ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\019_ICV.D\019_ICV.D#
Date Acquired: Mar 16 2018 03:07 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.49	ppb	0.39	20	97.45	
11 B	20.41	ppb	2.82	20	102.05	
23 Na	3,989.	ppb	0.78	4,000	99.725	
25 Mg	3,929.	ppb	0.90	4,000	98.225	
27 Al	397.6	ppb	0.63	400	99.4	
28 Si	287.2	ppb	26.78	400	71.8	
29 Si	354.4	ppb	77.31	400	88.6	Fail
39 K	3,951.	ppb	0.87	4,000	98.775	
43 Ca	3,981.	ppb	1.78	4,000	99.525	
44 Ca	4,101.	ppb	0.55	4,000	102.525	
51 V	19.99	ppb	1.37	20	99.95	
52 Cr	19.56	ppb	2.04	20	97.8	
53 Cr	15.23	ppb	5.69	20	76.15	
55 Mn	19.88	ppb	1.74	20	99.4	
56 Fe	3,930.	ppb	1.59	4,000	98.25	
57 Fe	4,059.	ppb	0.45	4,000	101.475	
59 Co	19.54	ppb	1.77	20	97.7	
60 Ni	19.93	ppb	2.60	20	99.65	
63 Cu	20.03	ppb	1.97	20	100.15	
65 Cu	19.94	ppb	2.37	20	99.7	
66 Zn	20.19	ppb	1.72	20	100.95	
68 Zn	20.08	ppb	1.66	20	100.4	
75 As	19.97	ppb	1.57	20	99.85	
82 Se	20.08	ppb	1.40	20	100.4	
88 Sr	19.73	ppb	0.87	20	98.65	
98 Mo	38.73	ppb	1.10	40	96.825	
107 Ag	19.84	ppb	2.38	20	99.2	
109 Ag	19.88	ppb	2.02	20	99.4	
111 Cd	20.08	ppb	1.92	20	100.4	
114 Cd	20.23	ppb	1.70	20	101.15	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.5	ppb	1.61	20	97.5	
120 Sn	19.46	ppb	0.70	20	97.3	
121 Sb	19.5	ppb	1.40	20	97.5	
123 Sb	19.41	ppb	0.59	20	97.05	
135 Ba	20.06	ppb	0.65	20	100.3	
137 Ba	19.68	ppb	1.73	20	98.4	
182 W	19.61	ppb	1.00	20	98.05	
203 Tl	20.02	ppb	1.11	20	100.1	
205 Tl	20.07	ppb	1.25	20	100.35	
208 Pb	19.62	ppb	1.19	20	98.1	
232 Th	19.59	ppb	1.07	20	97.95	
238 U	19.55	ppb	1.35	20	97.75	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3944345.30	3.90	3533775.30	111.6	80 - 120.4	
45 Sc	3615355.80	2.64	3253126.50	111.1	80 - 120.4	
89 Y	4872858.50	1.73	4442820.00	109.7	80 - 120.4	
159 Tb	5237913.00	2.22	4762571.00	110.0	80 - 120.4	
209 Bi	2976929.30	2.33	2744185.50	108.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000135

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\020_ICB.D\020_ICB.D#
Date Acquired: Mar 16 2018 03:11 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0002	ppb	250.16	1.00	
11 B	0.7864	ppb	11.26	1.00	
23 Na	-0.1233	ppb	202.43	1.00	
25 Mg	0.0076	ppb	272.33	1.00	
27 Al	0.0293	ppb	133.79	1.00	
28 Si	-93.15	ppb	93.29	1.00	
29 Si	-82.6	ppb	30.91	1.00	
39 K	-5.29	ppb	39.00	1.00	
43 Ca	-4.786	ppb	32.57	1.00	
44 Ca	-3.047	ppb	25.09	1.00	
51 V	0.0618	ppb	126.53	1.00	
52 Cr	-0.119	ppb	36.73	1.00	
53 Cr	-4.075	ppb	3.19	1.00	
55 Mn	0.0089	ppb	77.21	1.00	
56 Fe	-9.666	ppb	17.36	1.00	
57 Fe	-2.742	ppb	3.46	1.00	
59 Co	0.0014	ppb	159.96	1.00	
60 Ni	0.0017	ppb	92.59	1.00	
63 Cu	-0.0001	ppb	4008.80	1.00	
65 Cu	-0.0138	ppb	29.18	1.00	
66 Zn	0.0384	ppb	136.21	1.00	
68 Zn	0.0206	ppb	180.63	1.00	
75 As	0.0392	ppb	240.61	1.00	
82 Se	0.3341	ppb	45.26	1.00	
88 Sr	0.003	ppb	101.15	1.00	
98 Mo	0.0303	ppb	8.94	1.00	
107 Ag	-0.001	ppb	131.55	1.00	
109 Ag	0.0016	ppb	107.35	1.00	
111 Cd	-0.0098	ppb	296.37	1.00	
114 Cd	-0.0005	ppb	309.13	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0173	ppb	45.14	1.00	
120 Sn	0.0063	ppb	96.15	1.00	
121 Sb	-0.0499	ppb	20.10	1.00	
123 Sb	-0.0266	ppb	44.49	1.00	
135 Ba	0.0015	ppb	685.64	1.00	
137 Ba	-0.0024	ppb	158.27	1.00	
182 W	0.029	ppb	45.89	1.00	
203 Tl	0.0094	ppb	17.29	1.00	
205 Tl	0.0031	ppb	73.14	1.00	
208 Pb	0.004	ppb	46.39	1.00	
232 Th	0.0098	ppb	7.11	1.00	
238 U	0.0038	ppb	38.57	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3701940.30	2.07	3533775.30	104.8	79.5 - 120	
45 Sc	3442784.00	2.09	3253126.50	105.8	79.5 - 120	
89 Y	4596356.00	1.83	4442820.00	103.5	79.5 - 120	
159 Tb	4975054.50	1.37	4762571.00	104.5	79.5 - 120	
209 Bi	2859406.50	1.38	2744185.50	104.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000136

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\021_PQL.D\021_PQL.D#
Date Acquired: Mar 16 2018 03:14 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1964	ppb	5.91	0.20	98.2	
11 B	4.681	ppb	2.74	4.00	117.025	
23 Na	211.9	ppb	1.46	200.00	105.95	
25 Mg	20.27	ppb	5.74	20.00	101.35	
27 Al	20.44	ppb	1.44	20.00	102.2	
28 Si	10.67	ppb	614.71	100.00	10.67	
29 Si	-7.802	ppb	286.98	100.00	-7.802	Fail
39 K	196.7	ppb	1.74	200.00	98.35	
43 Ca	20.91	ppb	36.29	20.00	104.55	
44 Ca	17.15	ppb	11.77	20.00	85.75	
51 V	1.078	ppb	7.16	1.00	107.8	
52 Cr	0.9441	ppb	0.69	1.00	94.41	
53 Cr	-2.206	ppb	15.91	---	#VALUE!	
55 Mn	0.4169	ppb	1.86	0.40	104.225	
56 Fe	13.27	ppb	23.93	20.00	66.35	
57 Fe	17.78	ppb	8.57	20.00	88.9	
59 Co	0.2071	ppb	8.73	0.20	103.55	
60 Ni	0.4059	ppb	5.20	0.40	101.475	
63 Cu	0.6306	ppb	1.50	0.60	105.1	
65 Cu	0.6432	ppb	0.57	0.60	107.2	
66 Zn	2.331	ppb	3.08	2.00	116.55	
68 Zn	2.296	ppb	10.57	2.00	114.8	
75 As	1.033	ppb	8.07	1.00	103.3	
82 Se	1.157	ppb	22.22	1.00	115.7	
88 Sr	1.007	ppb	2.26	1.00	100.7	
98 Mo	1.03	ppb	1.86	1.00	103	
107 Ag	0.214	ppb	8.62	0.20	107	
109 Ag	0.2165	ppb	1.92	0.20	108.25	
111 Cd	0.2085	ppb	4.64	0.20	104.25	
114 Cd	0.1949	ppb	3.82	0.20	97.45	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.033	ppb	3.39	1.00	103.3	
120 Sn	1.042	ppb	2.17	1.00	104.2	
121 Sb	0.1396	ppb	5.96	0.20	69.8	
123 Sb	0.166	ppb	3.39	0.20	83	
135 Ba	0.431	ppb	4.44	0.40	107.75	
137 Ba	0.4105	ppb	2.30	0.40	102.625	
182 W	0.9954	ppb	3.25	1.00	99.54	
203 Tl	0.1877	ppb	4.38	0.20	93.85	
205 Tl	0.1894	ppb	4.37	0.20	94.7	
208 Pb	0.1949	ppb	6.25	0.20	97.45	
232 Th	0.2005	ppb	0.89	0.20	100.25	
238 U	0.2049	ppb	2.84	0.20	102.45	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3724437.00	0.57	3533775.30	105.4	80 - 120.4	
45 Sc	3433517.00	1.34	3253126.50	105.5	80 - 120.4	
89 Y	4620429.00	0.87	4442820.00	104.0	80 - 120.4	
159 Tb	4924873.50	0.46	4762571.00	103.4	80 - 120.4	
209 Bi	2831856.00	0.79	2744185.50	103.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000137

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\022SMPL.D\022SMPL.D#
Date Acquired: Mar 16 2018 03:18 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0009	0.0009	ppb	441.54	100.	
11 B	0.2959	0.2959	ppb	30.47	1000.	
23 Na	0.5275	0.5275	ppb	111.22	200000.	
25 Mg	0.4027	0.4027	ppb	142.04	200000.	
27 Al	0.0982	0.0982	ppb	54.42	200000.	
28 Si	-30.1	-30.1	ppb	216.81	#VALUE!	
29 Si	-43.14	-43.14	ppb	64.74	10000.	
39 K	-4.543	-4.543	ppb	27.41	200000.	
43 Ca	-7.079	-7.079	ppb	45.49	#VALUE!	
44 Ca	-2.025	-2.025	ppb	55.85	200000.	
51 V	0.0419	0.0419	ppb	90.00	1000.	
52 Cr	-0.067	-0.067	ppb	31.24	2000.	
53 Cr	-2.765	-2.765	ppb	5.58	#VALUE!	
55 Mn	0.0184	0.0184	ppb	99.51	2000.	
56 Fe	-3.175	-3.175	ppb	36.00	#VALUE!	
57 Fe	-0.9918	-0.9918	ppb	112.02	100000.	
59 Co	0.0074	0.0074	ppb	127.57	1000.	
60 Ni	0.018	0.018	ppb	44.55	1000.	
63 Cu	0.0048	0.0048	ppb	189.65	#VALUE!	
65 Cu	-0.0107	-0.0107	ppb	30.34	2000.	
66 Zn	0.0351	0.0351	ppb	169.89	2000.	
68 Zn	0.1797	0.1797	ppb	133.28	#VALUE!	
75 As	0.1418	0.1418	ppb	110.93	1000.	
82 Se	0.1509	0.1509	ppb	135.26	1000.	
88 Sr	0.0095	0.0095	ppb	122.01	2000.	
98 Mo	0.0113	0.0113	ppb	78.55	1000.	
107 Ag	0.0019	0.0019	ppb	207.34	100.	
109 Ag	0.002	0.002	ppb	178.88	#VALUE!	
111 Cd	0.0013	0.0013	ppb	763.04	#VALUE!	
114 Cd	0.	0.	ppb	5560.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0161	0.0161	ppb	65.61	1000.	
120 Sn	0.0093	0.0093	ppb	85.41	#VALUE!	
121 Sb	-0.0543	-0.0543	ppb	31.79	#VALUE!	
123 Sb	-0.0481	-0.0481	ppb	45.65	1000.	
135 Ba	0.0007	0.0007	ppb	248.51	2000.	
137 Ba	0.0087	0.0087	ppb	105.05	#VALUE!	
182 W	0.0089	0.0089	ppb	31.04	1000.	
203 Tl	0.0067	0.0067	ppb	83.32	1000.	
205 Tl	0.0042	0.0042	ppb	134.07	#VALUE!	
208 Pb	0.0073	0.0073	ppb	160.06	2000.	
232 Th	0.0053	0.0053	ppb	21.02	1000.	
238 U	0.0058	0.0058	ppb	157.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3633385.00	2.90	3533775.30	102.8	69.5 - 120	
45 Sc	3365169.00	1.58	3253126.50	103.4	69.5 - 120	
89 Y	4539641.00	1.04	4442820.00	102.2	69.5 - 120	
159 Tb	4876959.50	0.64	4762571.00	102.4	69.5 - 120	
209 Bi	2805596.30	0.75	2744185.50	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000138

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\023ICSA.D\023ICSA.D#
Date Acquired: Mar 16 2018 03:22 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0003	ppb	627.88		
11 B	0.4992	ppb	7.49		
23 Na	98,320.	ppb	0.92		
25 Mg	95,380.	ppb	1.45		
27 Al	96,580.	ppb	1.22		
28 Si	-195.1	ppb	22.36		
29 Si	-193.8	ppb	4.38		
39 K	98,070.	ppb	0.81		
43 Ca	101,500.	ppb	0.68		
44 Ca	98,280.	ppb	0.73		
51 V	0.2201	ppb	11.56		
52 Cr	0.824	ppb	1.97		
53 Cr	-2.759	ppb	1.15		
55 Mn	0.387	ppb	0.67		
56 Fe	96,610.	ppb	0.23		
57 Fe	94,480.	ppb	0.99		
59 Co	0.0903	ppb	2.26		
60 Ni	-0.1283	ppb	19.91		
63 Cu	2.981	ppb	3.65		
65 Cu	0.9208	ppb	2.82		
66 Zn	2.18	ppb	0.74		
68 Zn	0.1597	ppb	51.80		
75 As	0.0643	ppb	241.75		
82 Se	0.0365	ppb	634.32		
88 Sr	0.909	ppb	2.95		
98 Mo	1,895.	ppb	0.58		
107 Ag	0.02	ppb	9.32		
109 Ag	0.0281	ppb	6.96		
111 Cd	0.097	ppb	15.00		
114 Cd	0.0713	ppb	59.51		
115 In	--------	---	--------		
118 Sn	0.0564	ppb	11.84		
120 Sn	0.0291	ppb	41.31		
121 Sb	0.1603	ppb	30.71		
123 Sb	0.1684	ppb	30.06		
135 Ba	0.1138	ppb	20.56		
137 Ba	0.0679	ppb	35.61		
182 W	0.2529	ppb	2.13		
203 Tl	0.0044	ppb	12.83		
205 Tl	0.0014	ppb	150.00		
208 Pb	0.0906	ppb	8.10		
232 Th	0.0137	ppb	33.88		
238 U	0.001	ppb	15.00		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3884057.80	0.93	3533775.30	109.9	69.5 - 120.4	
45 Sc	3743159.00	1.96	3253126.50	115.1	69.5 - 120.4	
89 Y	4959277.00	1.02	4442820.00	111.6	69.5 - 120.4	
159 Tb	5169098.00	1.11	4762571.00	108.5	69.5 - 120.4	
209 Bi	2719526.80	0.87	2744185.50	99.1	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000139

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\024ICSB.D\024ICSB.D#
Date Acquired: Mar 16 2018 03:25 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.88	ppb	0.73	20.00	79.5 - 120	
11 B	19.7	ppb	1.51	20.00	79.5 - 120	
23 Na	100,100.	ppb	0.40	100000.00	79.5 - 120	
25 Mg	96,570.	ppb	1.10	100000.00	79.5 - 120	
27 Al	97,480.	ppb	1.10	100000.00	79.5 - 120	
28 Si	486.5	ppb	11.26	---	##### - #####	
29 Si	592.4	ppb	14.39	---	##### - #####	
39 K	100,500.	ppb	0.87	100000.00	79.5 - 120	
43 Ca	102,500.	ppb	0.55	100000.00	79.5 - 120	
44 Ca	100,100.	ppb	0.09	100000.00	79.5 - 120	
51 V	20.86	ppb	0.87	20.00	79.5 - 120	
52 Cr	21.07	ppb	0.49	20.00	79.5 - 120	
53 Cr	19.39	ppb	0.82	---	##### - #####	
55 Mn	20.43	ppb	0.61	20.00	79.5 - 120	
56 Fe	97,000.	ppb	0.83	100000.00	79.5 - 120	
57 Fe	95,630.	ppb	0.29	100000.00	79.5 - 120	
59 Co	19.98	ppb	0.56	20.00	79.5 - 120	
60 Ni	19.36	ppb	2.01	20.00	79.5 - 120	
63 Cu	22.23	ppb	1.06	20.00	79.5 - 120	
65 Cu	20.14	ppb	0.63	20.00	79.5 - 120	
66 Zn	20.94	ppb	0.74	20.00	79.5 - 120	
68 Zn	19.19	ppb	1.81	20.00	79.5 - 120	
75 As	20.56	ppb	0.38	20.00	79.5 - 120	
82 Se	19.99	ppb	0.91	20.00	79.5 - 120	
88 Sr	21.23	ppb	0.75	20.00	79.5 - 120	
98 Mo	1,934.	ppb	1.03	2000.00	79.5 - 120	
107 Ag	18.44	ppb	0.34	20.00	79.5 - 120	
109 Ag	18.58	ppb	0.74	20.00	79.5 - 120	
111 Cd	18.79	ppb	0.39	20.00	79.5 - 120	
114 Cd	18.81	ppb	0.65	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	19.85	ppb	0.40	20.00	79.5 - 120	
120 Sn	19.71	ppb	0.92	20.00	79.5 - 120	
121 Sb	20.51	ppb	0.52	20.00	79.5 - 120	
123 Sb	20.38	ppb	1.17	20.00	79.5 - 120	
135 Ba	20.94	ppb	2.26	20.00	79.5 - 120	
137 Ba	20.74	ppb	0.35	20.00	79.5 - 120	
182 W	20.46	ppb	1.04	20.00	79.5 - 120	
203 Tl	21.52	ppb	1.91	20.00	79.5 - 120	
205 Tl	21.43	ppb	1.37	20.00	79.5 - 120	
208 Pb	21.48	ppb	0.87	20.00	79.5 - 120	
232 Th	22.73	ppb	0.89	20.00	79.5 - 120	
238 U	22.3	ppb	0.95	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3862821.50	0.25	3533775.30	109.3	69.5 - 120	
45 Sc	3752773.30	0.95	3253126.50	115.4	69.5 - 120	
89 Y	4978522.50	0.45	4442820.00	112.1	69.5 - 120	
159 Tb	5231373.50	0.79	4762571.00	109.8	69.5 - 120	
209 Bi	2701942.30	1.11	2744185.50	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 16 2018 03:29 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0019	0.0019	ppb	87.95	100.	
11 B	0.3712	0.3712	ppb	12.47	1000.	
23 Na	8.899	8.899	ppb	79.26	200000.	
25 Mg	4.577	4.577	ppb	134.11	200000.	
27 Al	5.758	5.758	ppb	122.77	200000.	
28 Si	76.43	76.43	ppb	5.25	#VALUE!	
29 Si	-67.7	-67.7	ppb	44.83	10000.	
39 K	-0.0746	-0.0746	ppb	6044.50	200000.	
43 Ca	-3.9	-3.9	ppb	18.99	#VALUE!	
44 Ca	4.135	4.135	ppb	154.51	200000.	
51 V	0.0002	0.0002	ppb	26193.00	1000.	
52 Cr	-0.0408	-0.0408	ppb	68.16	2000.	
53 Cr	-1.597	-1.597	ppb	9.91	#VALUE!	
55 Mn	0.0137	0.0137	ppb	86.75	2000.	
56 Fe	2.649	2.649	ppb	257.19	#VALUE!	
57 Fe	1.146	1.146	ppb	515.27	100000.	
59 Co	0.0031	0.0031	ppb	58.18	1000.	
60 Ni	0.0067	0.0067	ppb	89.79	1000.	
63 Cu	0.0174	0.0174	ppb	27.44	#VALUE!	
65 Cu	0.0066	0.0066	ppb	88.38	2000.	
66 Zn	0.172	0.172	ppb	29.97	2000.	
68 Zn	0.1002	0.1002	ppb	108.78	#VALUE!	
75 As	0.0284	0.0284	ppb	977.08	1000.	
82 Se	0.0466	0.0466	ppb	279.92	1000.	
88 Sr	0.0025	0.0025	ppb	166.37	2000.	
98 Mo	0.4295	0.4295	ppb	34.76	1000.	
107 Ag	-0.0017	-0.0017	ppb	122.78	100.	
109 Ag	0.0011	0.0011	ppb	179.60	#VALUE!	
111 Cd	-0.076	-0.076	ppb	43.21	#VALUE!	
114 Cd	0.0001	0.0001	ppb	2048.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0126	0.0126	ppb	116.92	1000.	
120 Sn	0.0117	0.0117	ppb	35.49	#VALUE!	
121 Sb	0.0211	0.0211	ppb	87.92	#VALUE!	
123 Sb	0.0288	0.0288	ppb	54.82	1000.	
135 Ba	0.0064	0.0064	ppb	83.81	2000.	
137 Ba	0.0062	0.0062	ppb	64.57	#VALUE!	
182 W	-0.0048	-0.0048	ppb	151.21	1000.	
203 Tl	0.0082	0.0082	ppb	39.94	1000.	
205 Tl	0.0035	0.0035	ppb	17.48	#VALUE!	
208 Pb	0.0028	0.0028	ppb	172.22	2000.	
232 Th	0.006	0.006	ppb	33.84	1000.	
238 U	0.0027	0.0027	ppb	92.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3392131.30	0.49	3533775.30	96.0	69.5 - 120	
45 Sc	3256809.00	0.57	3253126.50	100.1	69.5 - 120	
89 Y	4434550.50	0.53	4442820.00	99.8	69.5 - 120	
159 Tb	4772167.50	0.89	4762571.00	100.2	69.5 - 120	
209 Bi	2727162.30	0.53	2744185.50	99.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000141

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 16 2018 03:33 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	102.6	102.6	ppb	0.27	100.	>LDR
11 B	580.6	580.6	ppb	1.52	1000.	
23 Na	5.131	5.131	ppb	2.77	200000.	
25 Mg	0.6729	0.6729	ppb	12.52	200000.	
27 Al	0.4573	0.4573	ppb	12.53	200000.	
28 Si	-196.2	-196.2	ppb	18.27	#VALUE!	
29 Si	-187.5	-187.5	ppb	15.87	10000.	LOW
39 K	-9.407	-9.407	ppb	15.18	200000.	
43 Ca	1,536.	1,536.	ppb	1.64	#VALUE!	
44 Ca	114.9	114.9	ppb	7.58	200000.	
51 V	1,006.	1,006.	ppb	0.94	1000.	>LDR
52 Cr	1,984.	1,984.	ppb	0.80	2000.	
53 Cr	2,138.	2,138.	ppb	0.92	#VALUE!	
55 Mn	1,976.	1,976.	ppb	0.71	2000.	
56 Fe	-17.5	-17.5	ppb	10.95	#VALUE!	
57 Fe	-10.35	-10.35	ppb	13.29	100000.	
59 Co	991.9	991.9	ppb	0.95	1000.	
60 Ni	990.8	990.8	ppb	0.50	1000.	
63 Cu	1,972.	1,972.	ppb	1.16	#VALUE!	
65 Cu	1,986.	1,986.	ppb	0.74	2000.	
66 Zn	1,999.	1,999.	ppb	0.85	2000.	
68 Zn	2,060.	2,060.	ppb	0.62	#VALUE!	
75 As	1,012.	1,012.	ppb	0.73	1000.	>LDR
82 Se	1,038.	1,038.	ppb	0.61	1000.	>LDR
88 Sr	1,982.	1,982.	ppb	0.45	2000.	
98 Mo	997.	997.	ppb	0.22	1000.	
107 Ag	104.6	104.6	ppb	1.02	100.	>LDR
109 Ag	105.1	105.1	ppb	0.54	#VALUE!	
111 Cd	1,048.	1,048.	ppb	1.01	#VALUE!	
114 Cd	1,022.	1,022.	ppb	0.93	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	990.6	990.6	ppb	1.33	1000.	
120 Sn	977.5	977.5	ppb	1.00	#VALUE!	
121 Sb	990.9	990.9	ppb	1.74	#VALUE!	
123 Sb	1,001.	1,001.	ppb	1.33	1000.	>LDR
135 Ba	2,075.	2,075.	ppb	1.61	2000.	>LDR
137 Ba	2,022.	2,022.	ppb	1.50	#VALUE!	
182 W	987.9	987.9	ppb	1.70	1000.	
203 Tl	980.	980.	ppb	1.88	1000.	
205 Tl	965.9	965.9	ppb	1.57	#VALUE!	
208 Pb	1,965.	1,965.	ppb	1.06	2000.	
232 Th	969.5	969.5	ppb	1.57	1000.	
238 U	964.4	964.4	ppb	1.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3582407.00	1.55	3533775.30	101.4	69.5 - 120	
45 Sc	3393715.30	1.21	3253126.50	104.3	69.5 - 120	
89 Y	4665486.00	1.04	4442820.00	105.0	69.5 - 120	
159 Tb	5117325.50	1.18	4762571.00	107.4	69.5 - 120	
209 Bi	2936556.80	1.40	2744185.50	107.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

8 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000142

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 16 2018 03:36 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0093	0.0093	ppb	22.56	100.	
11 B	7.106	7.106	ppb	23.07	1000.	
23 Na	203,200.	203,200.	ppb	1.33	200000.	>LDR
25 Mg	194,000.	194,000.	ppb	0.67	200000.	
27 Al	196,100.	196,100.	ppb	0.91	200000.	
28 Si	12,440.	12,440.	ppb	0.99	#VALUE!	
29 Si	7,798.	7,798.	ppb	0.92	10000.	
39 K	200,100.	200,100.	ppb	0.55	200000.	>LDR
43 Ca	200,700.	200,700.	ppb	0.69	#VALUE!	
44 Ca	198,700.	198,700.	ppb	0.80	200000.	
51 V	0.1627	0.1627	ppb	31.76	1000.	
52 Cr	3.122	3.122	ppb	0.75	2000.	
53 Cr	-2.296	-2.296	ppb	9.25	#VALUE!	
55 Mn	8.329	8.329	ppb	0.47	2000.	
56 Fe	101,400.	101,400.	ppb	0.28	#VALUE!	
57 Fe	99,990.	99,990.	ppb	0.89	100000.	
59 Co	2.858	2.858	ppb	1.29	1000.	
60 Ni	3.867	3.867	ppb	0.47	1000.	
63 Cu	8.11	8.11	ppb	1.17	#VALUE!	
65 Cu	2.99	2.99	ppb	2.55	2000.	
66 Zn	4.232	4.232	ppb	1.70	2000.	
68 Zn	2.471	2.471	ppb	8.35	#VALUE!	
75 As	0.4055	0.4055	ppb	21.50	1000.	
82 Se	0.4366	0.4366	ppb	55.25	1000.	
88 Sr	6.889	6.889	ppb	1.52	2000.	
98 Mo	0.6031	0.6031	ppb	7.51	1000.	
107 Ag	0.3522	0.3522	ppb	6.40	100.	
109 Ag	0.3486	0.3486	ppb	2.81	#VALUE!	
111 Cd	0.0421	0.0421	ppb	15.59	#VALUE!	
114 Cd	0.0059	0.0059	ppb	65.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2781	0.2781	ppb	10.77	1000.	
120 Sn	0.2642	0.2642	ppb	6.44	#VALUE!	
121 Sb	0.2892	0.2892	ppb	7.78	#VALUE!	
123 Sb	0.2836	0.2836	ppb	11.88	1000.	
135 Ba	0.2961	0.2961	ppb	15.53	2000.	
137 Ba	0.2842	0.2842	ppb	2.23	#VALUE!	
182 W	0.4901	0.4901	ppb	2.09	1000.	
203 Tl	0.0701	0.0701	ppb	22.35	1000.	
205 Tl	0.0706	0.0706	ppb	8.13	#VALUE!	
208 Pb	0.6286	0.6286	ppb	4.96	2000.	
232 Th	0.1769	0.1769	ppb	51.30	1000.	
238 U	0.1283	0.1283	ppb	10.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3797984.50	4.03	3533775.30	107.5	69.5 - 120	
45 Sc	3694942.00	2.58	3253126.50	113.6	69.5 - 120	
89 Y	4577495.50	1.24	4442820.00	103.0	69.5 - 120	
159 Tb	4768863.50	0.25	4762571.00	100.1	69.5 - 120	
209 Bi	2416616.80	0.32	2744185.50	88.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000143

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\028SMPL.D\028SMPL.D#
Date Acquired: Mar 16 2018 03:40 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0005	0.0005	ppb	371.62	100.	
11 B	3.151	3.151	ppb	10.86	1000.	
23 Na	11.31	11.31	ppb	20.52	200000.	
25 Mg	1.171	1.171	ppb	56.82	200000.	
27 Al	1.575	1.575	ppb	44.60	200000.	
28 Si	228.	228.	ppb	18.58	#VALUE!	
29 Si	-15.18	-15.18	ppb	189.46	10000.	
39 K	0.7596	0.7596	ppb	129.67	200000.	
43 Ca	-1.751	-1.751	ppb	237.75	#VALUE!	
44 Ca	3.939	3.939	ppb	13.70	200000.	
51 V	0.0008	0.0008	ppb	5355.50	1000.	
52 Cr	0.0612	0.0612	ppb	14.96	2000.	
53 Cr	3.986	3.986	ppb	15.74	#VALUE!	
55 Mn	0.032	0.032	ppb	8.17	2000.	
56 Fe	11.46	11.46	ppb	22.14	#VALUE!	
57 Fe	-0.1977	-0.1977	ppb	550.33	100000.	
59 Co	0.0066	0.0066	ppb	40.04	1000.	
60 Ni	0.0187	0.0187	ppb	91.32	1000.	
63 Cu	0.0491	0.0491	ppb	29.30	#VALUE!	
65 Cu	0.0294	0.0294	ppb	64.47	2000.	
66 Zn	0.2216	0.2216	ppb	19.55	2000.	
68 Zn	0.3691	0.3691	ppb	25.69	#VALUE!	
75 As	0.1049	0.1049	ppb	98.28	1000.	
82 Se	0.3091	0.3091	ppb	34.26	1000.	
88 Sr	0.0054	0.0054	ppb	24.14	2000.	
98 Mo	0.0963	0.0963	ppb	5.99	1000.	
107 Ag	0.0019	0.0019	ppb	117.94	100.	
109 Ag	0.0009	0.0009	ppb	34.18	#VALUE!	
111 Cd	-0.0729	-0.0729	ppb	5.71	#VALUE!	
114 Cd	-0.001	-0.001	ppb	220.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0508	0.0508	ppb	12.89	1000.	
120 Sn	0.071	0.071	ppb	18.39	#VALUE!	
121 Sb	0.1962	0.1962	ppb	3.50	#VALUE!	
123 Sb	0.1899	0.1899	ppb	12.53	1000.	
135 Ba	0.0145	0.0145	ppb	36.26	2000.	
137 Ba	0.0166	0.0166	ppb	29.43	#VALUE!	
182 W	0.1036	0.1036	ppb	14.81	1000.	
203 Tl	0.0125	0.0125	ppb	10.39	1000.	
205 Tl	0.0123	0.0123	ppb	9.04	#VALUE!	
208 Pb	0.0167	0.0167	ppb	35.26	2000.	
232 Th	0.0097	0.0097	ppb	6.78	1000.	
238 U	0.0103	0.0103	ppb	5.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3537765.30	1.78	3533775.30	100.1	69.5 - 120	
45 Sc	3314184.00	1.31	3253126.50	101.9	69.5 - 120	
89 Y	4385223.50	0.28	4442820.00	98.7	69.5 - 120	
159 Tb	4693434.00	0.94	4762571.00	98.5	69.5 - 120	
209 Bi	2696292.00	0.52	2744185.50	98.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000144

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\029SMPL.D\029SMPL.D#
Date Acquired: Mar 16 2018 03:44 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0006	ppb	691.78	100.	
11 B	1.697	1.697	ppb	10.76	1000.	
23 Na	6.876	6.876	ppb	28.49	200000.	
25 Mg	1.784	1.784	ppb	116.76	200000.	
27 Al	2.12	2.12	ppb	94.91	200000.	
28 Si	30.48	30.48	ppb	263.91	#VALUE!	
29 Si	-79.49	-79.49	ppb	43.54	10000.	
39 K	-1.948	-1.948	ppb	87.47	200000.	
43 Ca	-2.166	-2.166	ppb	26.54	#VALUE!	
44 Ca	0.6689	0.6689	ppb	329.94	200000.	
51 V	0.0615	0.0615	ppb	51.26	1000.	
52 Cr	0.0342	0.0342	ppb	53.99	2000.	
53 Cr	2.656	2.656	ppb	9.68	#VALUE!	
55 Mn	0.018	0.018	ppb	21.56	2000.	
56 Fe	6.346	6.346	ppb	34.35	#VALUE!	
57 Fe	0.2636	0.2636	ppb	1249.20	100000.	
59 Co	0.0034	0.0034	ppb	121.22	1000.	
60 Ni	0.0037	0.0037	ppb	339.21	1000.	
63 Cu	0.0283	0.0283	ppb	8.90	#VALUE!	
65 Cu	0.0283	0.0283	ppb	16.86	2000.	
66 Zn	0.1633	0.1633	ppb	42.10	2000.	
68 Zn	0.231	0.231	ppb	17.77	#VALUE!	
75 As	0.2826	0.2826	ppb	28.90	1000.	
82 Se	0.123	0.123	ppb	150.33	1000.	
88 Sr	0.0028	0.0028	ppb	18.65	2000.	
98 Mo	0.0559	0.0559	ppb	18.61	1000.	
107 Ag	0.0002	0.0002	ppb	1299.30	100.	
109 Ag	0.0021	0.0021	ppb	51.10	#VALUE!	
111 Cd	-0.0728	-0.0728	ppb	45.26	#VALUE!	
114 Cd	-0.0005	-0.0005	ppb	534.07	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0595	0.0595	ppb	17.99	1000.	
120 Sn	0.0426	0.0426	ppb	22.10	#VALUE!	
121 Sb	0.0985	0.0985	ppb	10.57	#VALUE!	
123 Sb	0.0794	0.0794	ppb	18.85	1000.	
135 Ba	0.0002	0.0002	ppb	4389.40	2000.	
137 Ba	0.0065	0.0065	ppb	60.51	#VALUE!	
182 W	0.0445	0.0445	ppb	29.00	1000.	
203 Tl	0.0091	0.0091	ppb	6.63	1000.	
205 Tl	0.0043	0.0043	ppb	48.41	#VALUE!	
208 Pb	0.008	0.008	ppb	50.01	2000.	
232 Th	0.0088	0.0088	ppb	15.36	1000.	
238 U	0.0052	0.0052	ppb	25.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3502402.80	0.90	3533775.30	99.1	69.5 - 120	
45 Sc	3312306.00	1.23	3253126.50	101.8	69.5 - 120	
89 Y	4415148.50	0.61	4442820.00	99.4	69.5 - 120	
159 Tb	4713207.00	0.14	4762571.00	99.0	69.5 - 120	
209 Bi	2717903.30	1.02	2744185.50	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000145

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\030_CCV.D\030_CCV.D#
Date Acquired: Mar 16 2018 03:47 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.97	ppb	0.41	25	99.88	
11 B	25.89	ppb	2.22	25	103.56	
23 Na	5,005.	ppb	0.27	5,000	100.1	
25 Mg	4,944.	ppb	0.92	5,000	98.88	
27 Al	496.2	ppb	1.22	500	99.24	
28 Si	546.8	ppb	6.60	500	109.36	
29 Si	570.2	ppb	9.98	500	114.04	Fail
39 K	4,996.	ppb	0.58	5,000	99.92	
43 Ca	4,974.	ppb	0.59	5,000	99.48	
44 Ca	5,183.	ppb	0.80	5,000	103.66	
51 V	24.83	ppb	0.82	25	99.32	
52 Cr	24.84	ppb	0.59	25	99.36	
53 Cr	24.18	ppb	5.03	25	96.72	
55 Mn	24.9	ppb	0.46	25	99.6	
56 Fe	4,964.	ppb	0.44	5,000	99.28	
57 Fe	5,126.	ppb	0.67	5,000	102.52	
59 Co	24.98	ppb	1.20	25	99.92	
60 Ni	25.29	ppb	0.34	25	101.16	
63 Cu	25.23	ppb	0.35	25	100.92	
65 Cu	25.23	ppb	0.86	25	100.92	
66 Zn	25.05	ppb	1.25	25	100.2	
68 Zn	25.14	ppb	1.29	25	100.56	
75 As	25.17	ppb	2.40	25	100.68	
82 Se	25.19	ppb	1.98	25	100.76	
88 Sr	25.14	ppb	0.87	25	100.56	
98 Mo	24.93	ppb	1.05	25	99.72	
107 Ag	25.15	ppb	0.85	25	100.6	
109 Ag	25.11	ppb	0.43	25	100.44	
111 Cd	25.13	ppb	0.61	25	100.52	
114 Cd	25.19	ppb	0.92	25	100.76	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.92	ppb	0.94	25	99.68	
120 Sn	24.94	ppb	0.56	25	99.76	
121 Sb	25.01	ppb	0.48	25	100.04	
123 Sb	25.01	ppb	0.42	25	100.04	
135 Ba	24.95	ppb	0.72	25	99.8	
137 Ba	25.14	ppb	1.93	25	100.56	
182 W	24.93	ppb	0.40	25	99.72	
203 Tl	24.47	ppb	0.49	25	97.88	
205 Tl	24.67	ppb	0.62	25	98.68	
208 Pb	24.65	ppb	0.20	25	98.6	
232 Th	24.4	ppb	0.56	25	97.6	
238 U	24.22	ppb	0.49	25	96.88	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3831676.30	1.49	3533775.30	108.4	80 - 120.4	
45 Sc	3594305.30	1.18	3253126.50	110.5	80 - 120.4	
89 Y	4800276.50	0.81	4442820.00	108.0	80 - 120.4	
159 Tb	5185803.00	0.62	4762571.00	108.9	80 - 120.4	
209 Bi	2958255.00	0.73	2744185.50	107.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000146

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\031_CCB.D\031_CCB.D#
Date Acquired: Mar 16 2018 03:51 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.	ppb	5040.90	1.00	
11 B	1.1	ppb	10.61	1.00	
23 Na	3.937	ppb	7.61	1.00	
25 Mg	0.5015	ppb	23.23	1.00	
27 Al	0.8215	ppb	2.52	1.00	
28 Si	122.	ppb	69.38	1.00	
29 Si	-8.658	ppb	354.70	1.00	
39 K	-0.8368	ppb	135.64	1.00	
43 Ca	-2.703	ppb	23.39	1.00	
44 Ca	0.487	ppb	203.49	1.00	
51 V	0.0277	ppb	280.84	1.00	
52 Cr	-0.0409	ppb	52.03	1.00	
53 Cr	-1.826	ppb	11.34	1.00	
55 Mn	0.0295	ppb	28.19	1.00	
56 Fe	1.263	ppb	308.71	1.00	
57 Fe	-0.195	ppb	58.05	1.00	
59 Co	0.0015	ppb	185.44	1.00	
60 Ni	0.0049	ppb	120.13	1.00	
63 Cu	0.0439	ppb	21.55	1.00	
65 Cu	0.0399	ppb	13.62	1.00	
66 Zn	0.1811	ppb	18.36	1.00	
68 Zn	0.249	ppb	43.94	1.00	
75 As	0.0419	ppb	369.95	1.00	
82 Se	0.2452	ppb	81.97	1.00	
88 Sr	0.0003	ppb	771.85	1.00	
98 Mo	0.0464	ppb	16.38	1.00	
107 Ag	0.0046	ppb	72.57	1.00	
109 Ag	0.0077	ppb	31.19	1.00	
111 Cd	-0.0833	ppb	10.68	1.00	
114 Cd	-0.0031	ppb	205.37	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0665	ppb	12.63	1.00	
120 Sn	0.0556	ppb	24.15	1.00	
121 Sb	-0.0083	ppb	77.03	1.00	
123 Sb	-0.0114	ppb	138.07	1.00	
135 Ba	0.0098	ppb	134.55	1.00	
137 Ba	0.0088	ppb	100.08	1.00	
182 W	0.0389	ppb	17.42	1.00	
203 Tl	0.0073	ppb	51.39	1.00	
205 Tl	0.0056	ppb	8.38	1.00	
208 Pb	0.0107	ppb	13.62	1.00	
232 Th	0.0136	ppb	18.31	1.00	
238 U	0.0036	ppb	15.17	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3478836.00	0.34	3533775.30	98.4	79.5 - 120	
45 Sc	3244398.80	1.14	3253126.50	99.7	79.5 - 120	
89 Y	4381900.00	1.71	4442820.00	98.6	79.5 - 120	
159 Tb	4764401.50	0.88	4762571.00	100.0	79.5 - 120	
209 Bi	2736175.30	1.40	2744185.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 16 2018 03:55 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2097-001
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.004	0.004	ppb	32.96	100.	
11 B	4.069	4.069	ppb	2.09	1000.	
23 Na	9,129.	9,129.	ppb	0.69	200000.	
25 Mg	594.2	594.2	ppb	0.42	200000.	
27 Al	14.17	14.17	ppb	1.95	200000.	
28 Si	1,910.	1,910.	ppb	5.67	#VALUE!	
29 Si	1,449.	1,449.	ppb	2.94	10000.	
39 K	500.7	500.7	ppb	0.37	200000.	
43 Ca	3,249.	3,249.	ppb	0.87	#VALUE!	
44 Ca	3,392.	3,392.	ppb	0.99	200000.	
51 V	0.1444	0.1444	ppb	46.05	1000.	
52 Cr	0.148	0.148	ppb	0.67	2000.	
53 Cr	-2.057	-2.057	ppb	14.44	#VALUE!	
55 Mn	1.567	1.567	ppb	1.01	2000.	
56 Fe	5.186	5.186	ppb	26.67	#VALUE!	
57 Fe	10.03	10.03	ppb	11.46	100000.	
59 Co	0.0148	0.0148	ppb	16.93	1000.	
60 Ni	0.2141	0.2141	ppb	9.20	1000.	
63 Cu	157.8	157.8	ppb	1.70	#VALUE!	
65 Cu	163.1	163.1	ppb	0.85	2000.	
66 Zn	151.4	151.4	ppb	0.74	2000.	
68 Zn	146.5	146.5	ppb	1.54	#VALUE!	
75 As	0.3472	0.3472	ppb	30.13	1000.	
82 Se	0.3365	0.3365	ppb	70.61	1000.	
88 Sr	27.24	27.24	ppb	1.20	2000.	
98 Mo	0.1342	0.1342	ppb	8.97	1000.	
107 Ag	0.0128	0.0128	ppb	55.65	100.	
109 Ag	0.0115	0.0115	ppb	30.15	#VALUE!	
111 Cd	-0.1004	-0.1004	ppb	7.52	#VALUE!	
114 Cd	0.0002	0.0002	ppb	1193.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2295	0.2295	ppb	20.17	1000.	
120 Sn	0.2077	0.2077	ppb	12.03	#VALUE!	
121 Sb	-0.0379	-0.0379	ppb	9.43	#VALUE!	
123 Sb	-0.0276	-0.0276	ppb	36.18	1000.	
135 Ba	4.782	4.782	ppb	2.42	2000.	
137 Ba	4.573	4.573	ppb	2.25	#VALUE!	
182 W	0.0094	0.0094	ppb	19.66	1000.	
203 Tl	0.0061	0.0061	ppb	36.12	1000.	
205 Tl	0.0062	0.0062	ppb	24.29	#VALUE!	
208 Pb	1.61	1.61	ppb	0.66	2000.	
232 Th	0.0224	0.0224	ppb	25.48	1000.	
238 U	0.1478	0.1478	ppb	3.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3716930.30	0.24	3533775.30	105.2	69.5 - 120	
45 Sc	3499905.00	1.27	3253126.50	107.6	69.5 - 120	
89 Y	4712101.50	0.43	4442820.00	106.1	69.5 - 120	
159 Tb	5142137.00	0.28	4762571.00	108.0	69.5 - 120	
209 Bi	2930064.50	0.87	2744185.50	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000148

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 16 2018 03:59 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: PBWLC14IMW2
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0019	0.0019	ppb	222.54	100.	
11 B	0.557	0.557	ppb	11.48	1000.	
23 Na	18.51	18.51	ppb	47.47	200000.	
25 Mg	8.215	8.215	ppb	92.95	200000.	
27 Al	7.322	7.322	ppb	114.04	200000.	
28 Si	176.1	176.1	ppb	14.01	#VALUE!	
29 Si	-54.1	-54.1	ppb	57.30	10000.	
39 K	-0.3987	-0.3987	ppb	2095.10	200000.	
43 Ca	3.744	3.744	ppb	412.13	#VALUE!	
44 Ca	8.136	8.136	ppb	114.20	200000.	
51 V	0.069	0.069	ppb	104.14	1000.	
52 Cr	0.0412	0.0412	ppb	190.78	2000.	
53 Cr	0.6361	0.6361	ppb	56.44	#VALUE!	
55 Mn	0.0534	0.0534	ppb	71.51	2000.	
56 Fe	1.764	1.764	ppb	378.51	#VALUE!	
57 Fe	0.1402	0.1402	ppb	5366.60	100000.	
59 Co	0.016	0.016	ppb	145.19	1000.	
60 Ni	0.0184	0.0184	ppb	138.14	1000.	
63 Cu	0.1149	0.1149	ppb	56.81	#VALUE!	
65 Cu	0.1024	0.1024	ppb	73.95	2000.	
66 Zn	0.291	0.291	ppb	42.17	2000.	
68 Zn	0.0589	0.0589	ppb	335.77	#VALUE!	
75 As	0.1961	0.1961	ppb	100.56	1000.	
82 Se	0.2807	0.2807	ppb	6.98	1000.	
88 Sr	0.0333	0.0333	ppb	139.46	2000.	
98 Mo	0.079	0.079	ppb	119.28	1000.	
107 Ag	0.0026	0.0026	ppb	133.74	100.	
109 Ag	0.0026	0.0026	ppb	227.63	#VALUE!	
111 Cd	-0.1216	-0.1216	ppb	29.81	#VALUE!	
114 Cd	0.0108	0.0108	ppb	177.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0565	0.0565	ppb	26.86	1000.	
120 Sn	0.0525	0.0525	ppb	61.93	#VALUE!	
121 Sb	0.055	0.055	ppb	25.74	#VALUE!	
123 Sb	0.0511	0.0511	ppb	26.80	1000.	
135 Ba	0.0202	0.0202	ppb	135.69	2000.	
137 Ba	0.027	0.027	ppb	97.41	#VALUE!	
182 W	0.0111	0.0111	ppb	170.59	1000.	
203 Tl	0.0103	0.0103	ppb	90.45	1000.	
205 Tl	0.0112	0.0112	ppb	178.19	#VALUE!	
208 Pb	0.0277	0.0277	ppb	110.35	2000.	
232 Th	0.012	0.012	ppb	125.21	1000.	
238 U	0.0093	0.0093	ppb	159.01	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3452635.50	0.53	3533775.30	97.7	69.5 - 120	
45 Sc	3244268.00	0.72	3253126.50	99.7	69.5 - 120	
89 Y	4467983.00	1.41	4442820.00	100.6	69.5 - 120	
159 Tb	4829211.50	1.52	4762571.00	101.4	69.5 - 120	
209 Bi	2786135.50	0.84	2744185.50	101.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000149

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 16 2018 04:02 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: LCSWLC14IMW2
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.4	10.08	ppb	0.87	100.	
11 B	509.	101.8	ppb	2.62	1000.	
23 Na	7,705.	1,541.	ppb	0.57	200000.	
25 Mg	5,445.	1,089.	ppb	1.43	200000.	
27 Al	2,086.	417.2	ppb	1.29	200000.	
28 Si	1,455.5	291.1	ppb	22.29	#VALUE!	
29 Si	697.	139.4	ppb	178.12	10000.	
39 K	10,255.	2,051.	ppb	1.04	200000.	
43 Ca	2,983.5	596.7	ppb	4.23	#VALUE!	
44 Ca	2,636.5	527.3	ppb	1.57	200000.	
51 V	512.	102.4	ppb	1.33	1000.	
52 Cr	198.7	39.74	ppb	1.04	2000.	
53 Cr	208.2	41.64	ppb	3.42	#VALUE!	
55 Mn	506.5	101.3	ppb	1.99	2000.	
56 Fe	939.5	187.9	ppb	2.55	#VALUE!	
57 Fe	991.	198.2	ppb	1.95	100000.	
59 Co	511.	102.2	ppb	1.55	1000.	
60 Ni	510.	102.	ppb	2.01	1000.	
63 Cu	254.35	50.87	ppb	1.73	#VALUE!	
65 Cu	255.7	51.14	ppb	1.71	2000.	
66 Zn	514.	102.8	ppb	1.64	2000.	
68 Zn	577.	115.4	ppb	2.37	#VALUE!	
75 As	104.95	20.99	ppb	1.68	1000.	
82 Se	104.7	20.94	ppb	1.89	1000.	
88 Sr	512.5	102.5	ppb	1.37	2000.	
98 Mo	102.35	20.47	ppb	1.36	1000.	
107 Ag	51.2	10.24	ppb	0.47	100.	
109 Ag	51.7	10.34	ppb	0.59	#VALUE!	
111 Cd	262.05	52.41	ppb	1.42	#VALUE!	
114 Cd	261.	52.2	ppb	1.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	509.5	101.9	ppb	0.59	1000.	
120 Sn	507.	101.4	ppb	0.53	#VALUE!	
121 Sb	105.45	21.09	ppb	0.33	#VALUE!	
123 Sb	103.9	20.78	ppb	0.16	1000.	
135 Ba	2,062.	412.4	ppb	0.73	2000.	
137 Ba	2,062.5	412.5	ppb	0.22	#VALUE!	
182 W	100.75	20.15	ppb	0.64	1000.	
203 Tl	103.15	20.63	ppb	1.36	1000.	
205 Tl	103.3	20.66	ppb	1.61	#VALUE!	
208 Pb	103.9	20.78	ppb	1.04	2000.	
232 Th	101.2	20.24	ppb	1.19	1000.	
238 U	101.45	20.29	ppb	1.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3702915.30	0.57	3533775.30	104.8	69.5 - 120	
45 Sc	3424225.30	0.92	3253126.50	105.3	69.5 - 120	
89 Y	4709895.50	1.35	4442820.00	106.0	69.5 - 120	
159 Tb	5056666.50	0.88	4762571.00	106.2	69.5 - 120	
209 Bi	2882667.80	0.88	2744185.50	105.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000150

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 16 2018 04:06 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL1951-001
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0017	0.0017	ppb	167.33	100.	
11 B	78.65	78.65	ppb	1.85	1000.	
23 Na	55,310.	55,310.	ppb	1.15	200000.	
25 Mg	2,984.	2,984.	ppb	1.38	200000.	
27 Al	51.8	51.8	ppb	5.08	200000.	
28 Si	5,757.	5,757.	ppb	1.73	#VALUE!	
29 Si	3,755.	3,755.	ppb	1.82	10000.	
39 K	5,992.	5,992.	ppb	0.96	200000.	
43 Ca	15,710.	15,710.	ppb	1.72	#VALUE!	
44 Ca	15,600.	15,600.	ppb	1.57	200000.	
51 V	0.2664	0.2664	ppb	7.58	1000.	
52 Cr	0.855	0.855	ppb	3.00	2000.	
53 Cr	-2.251	-2.251	ppb	37.39	#VALUE!	
55 Mn	122.8	122.8	ppb	2.19	2000.	
56 Fe	725.3	725.3	ppb	1.81	#VALUE!	
57 Fe	771.8	771.8	ppb	2.87	100000.	
59 Co	0.4403	0.4403	ppb	1.55	1000.	
60 Ni	1.518	1.518	ppb	2.24	1000.	
63 Cu	16.72	16.72	ppb	2.00	#VALUE!	
65 Cu	15.39	15.39	ppb	2.15	2000.	
66 Zn	20.41	20.41	ppb	1.41	2000.	
68 Zn	20.	20.	ppb	3.55	#VALUE!	
75 As	0.7681	0.7681	ppb	16.04	1000.	
82 Se	0.5361	0.5361	ppb	24.59	1000.	
88 Sr	82.13	82.13	ppb	1.52	2000.	
98 Mo	0.264	0.264	ppb	7.77	1000.	
107 Ag	0.0126	0.0126	ppb	19.24	100.	
109 Ag	0.0115	0.0115	ppb	23.74	#VALUE!	
111 Cd	-0.0631	-0.0631	ppb	17.79	#VALUE!	
114 Cd	0.0204	0.0204	ppb	37.75	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.3364	0.3364	ppb	4.11	1000.	
120 Sn	0.3357	0.3357	ppb	2.61	#VALUE!	
121 Sb	0.1996	0.1996	ppb	7.12	#VALUE!	
123 Sb	0.2186	0.2186	ppb	15.05	1000.	
135 Ba	13.05	13.05	ppb	1.00	2000.	
137 Ba	12.96	12.96	ppb	1.28	#VALUE!	
182 W	0.0975	0.0975	ppb	6.27	1000.	
203 Tl	0.0082	0.0082	ppb	39.49	1000.	
205 Tl	0.0048	0.0048	ppb	32.39	#VALUE!	
208 Pb	0.5737	0.5737	ppb	3.48	2000.	
232 Th	0.0453	0.0453	ppb	38.38	1000.	
238 U	0.03	0.03	ppb	9.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3815727.00	1.36	3533775.30	108.0	69.5 - 120	
45 Sc	3644678.80	0.72	3253126.50	112.0	69.5 - 120	
89 Y	4915666.00	1.39	4442820.00	110.6	69.5 - 120	
159 Tb	5273051.50	0.38	4762571.00	110.7	69.5 - 120	
209 Bi	2941585.80	0.54	2744185.50	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000151

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 16 2018 04:10 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2011-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0021	-0.0021	ppb	82.51	100.	
11 B	6.553	6.553	ppb	4.35	1000.	
23 Na	3,278.	3,278.	ppb	0.19	200000.	
25 Mg	2,934.	2,934.	ppb	0.31	200000.	
27 Al	7.067	7.067	ppb	2.02	200000.	
28 Si	7,173.	7,173.	ppb	0.31	#VALUE!	
29 Si	4,615.	4,615.	ppb	0.41	10000.	
39 K	1,370.	1,370.	ppb	0.58	200000.	
43 Ca	18,550.	18,550.	ppb	0.52	#VALUE!	
44 Ca	18,360.	18,360.	ppb	0.48	200000.	
51 V	0.3016	0.3016	ppb	11.90	1000.	
52 Cr	0.3583	0.3583	ppb	6.26	2000.	
53 Cr	2.385	2.385	ppb	42.94	#VALUE!	
55 Mn	9.782	9.782	ppb	1.92	2000.	
56 Fe	-8.619	-8.619	ppb	14.25	#VALUE!	
57 Fe	11.76	11.76	ppb	25.99	100000.	
59 Co	0.0789	0.0789	ppb	4.84	1000.	
60 Ni	0.1751	0.1751	ppb	15.13	1000.	
63 Cu	0.163	0.163	ppb	5.27	#VALUE!	
65 Cu	0.0819	0.0819	ppb	16.61	2000.	
66 Zn	1.024	1.024	ppb	4.73	2000.	
68 Zn	0.7252	0.7252	ppb	8.52	#VALUE!	
75 As	1.312	1.312	ppb	23.95	1000.	
82 Se	0.2592	0.2592	ppb	130.90	1000.	
88 Sr	75.55	75.55	ppb	0.96	2000.	
98 Mo	0.7779	0.7779	ppb	2.26	1000.	
107 Ag	-0.0004	-0.0004	ppb	362.88	100.	
109 Ag	0.0019	0.0019	ppb	53.20	#VALUE!	
111 Cd	-0.1272	-0.1272	ppb	8.58	#VALUE!	
114 Cd	0.0034	0.0034	ppb	40.38	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0736	0.0736	ppb	16.32	1000.	
120 Sn	0.0602	0.0602	ppb	7.18	#VALUE!	
121 Sb	0.0472	0.0472	ppb	26.46	#VALUE!	
123 Sb	0.0477	0.0477	ppb	27.93	1000.	
135 Ba	2.409	2.409	ppb	4.18	2000.	
137 Ba	2.513	2.513	ppb	5.94	#VALUE!	
182 W	0.0433	0.0433	ppb	17.34	1000.	
203 Tl	0.0068	0.0068	ppb	41.81	1000.	
205 Tl	0.0031	0.0031	ppb	32.40	#VALUE!	
208 Pb	0.0208	0.0208	ppb	9.63	2000.	
232 Th	0.0137	0.0137	ppb	13.72	1000.	
238 U	0.1361	0.1361	ppb	6.32	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3718823.80	1.13	3533775.30	105.2	69.5 - 120	
45 Sc	3503416.30	0.38	3253126.50	107.7	69.5 - 120	
89 Y	4816297.50	1.54	4442820.00	108.4	69.5 - 120	
159 Tb	5140481.00	1.50	4762571.00	107.9	69.5 - 120	
209 Bi	2945993.50	1.08	2744185.50	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000152

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 16 2018 04:14 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: PBSLC16IMS1
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0118	-0.0024	ppb	74.79	100.	
11 B	7.145	1.429	ppb	9.57	1000.	
23 Na	43.915	8.783	ppb	2.16	200000.	
25 Mg	12.545	2.509	ppb	5.96	200000.	
27 Al	7.8	1.56	ppb	1.28	200000.	
28 Si	388.75	77.75	ppb	72.50	#VALUE!	
29 Si	-446.35	-89.27	ppb	16.52	10000.	
39 K	-1.77	-0.354	ppb	485.88	200000.	
43 Ca	20.51	4.102	ppb	93.42	#VALUE!	
44 Ca	37.26	7.452	ppb	23.28	200000.	
51 V	1.148	0.2296	ppb	56.58	1000.	
52 Cr	2.916	0.5832	ppb	4.85	2000.	
53 Cr	149.45	29.89	ppb	1.43	#VALUE!	
55 Mn	0.4601	0.092	ppb	2.14	2000.	
56 Fe	29.77	5.954	ppb	12.96	#VALUE!	
57 Fe	-5.055	-1.011	ppb	91.40	100000.	
59 Co	0.0215	0.0043	ppb	74.80	1000.	
60 Ni	0.4905	0.0981	ppb	6.99	1000.	
63 Cu	0.9625	0.1925	ppb	1.81	#VALUE!	
65 Cu	1.017	0.2034	ppb	8.40	2000.	
66 Zn	0.9625	0.1925	ppb	8.16	2000.	
68 Zn	-1.0325	-0.2065	ppb	44.63	#VALUE!	
75 As	1.01	0.202	ppb	141.04	1000.	
82 Se	0.517	0.1034	ppb	334.72	1000.	
88 Sr	0.1599	0.032	ppb	28.14	2000.	
98 Mo	0.1855	0.0371	ppb	11.11	1000.	
107 Ag	0.006	0.0012	ppb	103.35	100.	
109 Ag	0.0049	0.001	ppb	182.64	#VALUE!	
111 Cd	-0.5285	-0.1057	ppb	2.12	#VALUE!	
114 Cd	-0.038	-0.0076	ppb	181.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.53	8.906	ppb	1.04	1000.	
120 Sn	44.395	8.879	ppb	0.70	#VALUE!	
121 Sb	0.5805	0.1161	ppb	95.00	#VALUE!	
123 Sb	0.539	0.1078	ppb	115.03	1000.	
135 Ba	0.2047	0.0409	ppb	6.80	2000.	
137 Ba	0.1575	0.0315	ppb	33.47	#VALUE!	
182 W	0.134	0.0268	ppb	46.42	1000.	
203 Tl	0.0101	0.002	ppb	99.75	1000.	
205 Tl	0.0134	0.0027	ppb	27.34	#VALUE!	
208 Pb	0.368	0.0736	ppb	4.13	2000.	
232 Th	0.124	0.0248	ppb	15.86	1000.	
238 U	0.0027	0.0005	ppb	140.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3492907.30	1.89	3533775.30	98.8	69.5 - 120	
45 Sc	3243123.50	1.44	3253126.50	99.7	69.5 - 120	
89 Y	4511201.00	0.09	4442820.00	101.5	69.5 - 120	
159 Tb	4854688.50	1.19	4762571.00	101.9	69.5 - 120	
209 Bi	2746219.80	0.03	2744185.50	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000153

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 16 2018 04:17 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: LCSOLC16IMS1
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.555	9.511	ppb	1.18	100.	
11 B	495.3	99.06	ppb	2.41	1000.	
23 Na	7,310.	1,462.	ppb	1.60	200000.	
25 Mg	5,075.	1,015.	ppb	1.53	200000.	
27 Al	2,007.5	401.5	ppb	0.94	200000.	
28 Si	900.	180.	ppb	46.13	#VALUE!	
29 Si	-176.7	-35.34	ppb	136.67	10000.	
39 K	9,690.	1,938.	ppb	0.32	200000.	
43 Ca	2,860.5	572.1	ppb	7.05	#VALUE!	
44 Ca	2,490.5	498.1	ppb	0.57	200000.	
51 V	478.3	95.66	ppb	0.72	1000.	
52 Cr	190.45	38.09	ppb	1.34	2000.	
53 Cr	301.55	60.31	ppb	6.13	#VALUE!	
55 Mn	476.9	95.38	ppb	1.26	2000.	
56 Fe	912.5	182.5	ppb	3.42	#VALUE!	
57 Fe	943.5	188.7	ppb	1.67	100000.	
59 Co	476.7	95.34	ppb	0.12	1000.	
60 Ni	475.	95.	ppb	1.20	1000.	
63 Cu	236.35	47.27	ppb	1.50	#VALUE!	
65 Cu	239.65	47.93	ppb	0.97	2000.	
66 Zn	465.1	93.02	ppb	0.70	2000.	
68 Zn	523.5	104.7	ppb	1.59	#VALUE!	
75 As	96.95	19.39	ppb	1.21	1000.	
82 Se	94.85	18.97	ppb	2.85	1000.	
88 Sr	496.95	99.39	ppb	0.61	2000.	
98 Mo	97.5	19.5	ppb	0.87	1000.	
107 Ag	49.075	9.815	ppb	2.00	100.	
109 Ag	49.11	9.822	ppb	0.89	#VALUE!	
111 Cd	243.95	48.79	ppb	1.12	#VALUE!	
114 Cd	243.45	48.69	ppb	2.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	516.5	103.3	ppb	0.73	1000.	
120 Sn	520.	104.	ppb	0.18	#VALUE!	
121 Sb	92.25	18.45	ppb	1.29	#VALUE!	
123 Sb	92.5	18.5	ppb	0.54	1000.	
135 Ba	1,973.5	394.7	ppb	0.55	2000.	
137 Ba	1,947.5	389.5	ppb	0.25	#VALUE!	
182 W	96.15	19.23	ppb	1.26	1000.	
203 Tl	97.4	19.48	ppb	1.17	1000.	
205 Tl	96.95	19.39	ppb	1.46	#VALUE!	
208 Pb	98.6	19.72	ppb	0.84	2000.	
232 Th	96.5	19.3	ppb	1.40	1000.	
238 U	97.25	19.45	ppb	0.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3709989.50	0.51	3533775.30	105.0	69.5 - 120	
45 Sc	3380015.30	0.69	3253126.50	103.9	69.5 - 120	
89 Y	4722487.00	0.77	4442820.00	106.3	69.5 - 120	
159 Tb	5120262.00	0.44	4762571.00	107.5	69.5 - 120	
209 Bi	2883736.50	1.02	2744185.50	105.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000154

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 16 2018 04:21 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2082-001
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.6805	0.1361	ppb	10.99	100.	
11 B	67.85	13.57	ppb	1.86	1000.	
23 Na	6,370.	1,274.	ppb	1.47	200000.	
25 Mg	6,985.	1,397.	ppb	0.37	200000.	
27 Al	23,645.	4,729.	ppb	1.50	200000.	
28 Si	3,740.5	748.1	ppb	2.38	#VALUE!	
29 Si	4,105.	821.	ppb	6.22	10000.	
39 K	4,298.	859.6	ppb	0.90	200000.	
43 Ca	73,600.	14,720.	ppb	1.32	#VALUE!	
44 Ca	73,100.	14,620.	ppb	1.54	200000.	
51 V	41.64	8.328	ppb	1.09	1000.	
52 Cr	44.435	8.887	ppb	2.37	2000.	
53 Cr	77.9	15.58	ppb	15.69	#VALUE!	
55 Mn	3,925.	785.	ppb	1.52	2000.	
56 Fe	26,295.	5,259.	ppb	1.62	#VALUE!	
57 Fe	27,160.	5,432.	ppb	2.06	100000.	
59 Co	7.17	1.434	ppb	1.65	1000.	
60 Ni	32.805	6.561	ppb	4.08	1000.	
63 Cu	195.35	39.07	ppb	2.20	#VALUE!	
65 Cu	197.4	39.48	ppb	2.73	2000.	
66 Zn	1,158.	231.6	ppb	2.38	2000.	
68 Zn	1,143.5	228.7	ppb	2.62	#VALUE!	
75 As	4.6275	0.9255	ppb	10.35	1000.	
82 Se	0.4057	0.0811	ppb	260.41	1000.	
88 Sr	295.95	59.19	ppb	0.67	2000.	
98 Mo	6.375	1.275	ppb	2.82	1000.	
107 Ag	1.2695	0.2539	ppb	3.54	100.	
109 Ag	1.149	0.2298	ppb	2.54	#VALUE!	
111 Cd	21.87	4.374	ppb	1.36	#VALUE!	
114 Cd	21.47	4.294	ppb	1.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.25	11.25	ppb	1.61	1000.	
120 Sn	56.35	11.27	ppb	0.84	#VALUE!	
121 Sb	1.469	0.2938	ppb	12.24	#VALUE!	
123 Sb	1.6005	0.3201	ppb	16.80	1000.	
135 Ba	517.	103.4	ppb	1.90	2000.	
137 Ba	515.5	103.1	ppb	1.55	#VALUE!	
182 W	1.395	0.279	ppb	1.71	1000.	
203 Tl	2.8175	0.5635	ppb	2.89	1000.	
205 Tl	2.7235	0.5447	ppb	3.60	#VALUE!	
208 Pb	74.05	14.81	ppb	0.65	2000.	
232 Th	4.8795	0.9759	ppb	3.54	1000.	
238 U	1.0775	0.2155	ppb	6.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3743777.80	1.69	3533775.30	105.9	69.5 - 120	
45 Sc	3514286.30	0.70	3253126.50	108.0	69.5 - 120	
89 Y	4907735.00	2.41	4442820.00	110.5	69.5 - 120	
159 Tb	5343736.50	1.41	4762571.00	112.2	69.5 - 120	
209 Bi	3007065.50	0.76	2744185.50	109.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000155

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\040SMPL.D\040SMPL.D#
Date Acquired: Mar 16 2018 04:25 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2082-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.64	0.128	ppb	6.96	100.	
11 B	184.	36.8	ppb	2.73	1000.	
23 Na	6,530.	1,306.	ppb	0.96	200000.	
25 Mg	4,162.5	832.5	ppb	1.79	200000.	
27 Al	47,095.	9,419.	ppb	0.90	200000.	
28 Si	3,098.	619.6	ppb	13.45	#VALUE!	
29 Si	3,145.	629.	ppb	3.49	10000.	
39 K	4,097.5	819.5	ppb	1.11	200000.	
43 Ca	52,200.	10,440.	ppb	0.36	#VALUE!	
44 Ca	52,400.	10,480.	ppb	0.96	200000.	
51 V	26.33	5.266	ppb	3.90	1000.	
52 Cr	56.45	11.29	ppb	0.88	2000.	
53 Cr	103.95	20.79	ppb	2.34	#VALUE!	
55 Mn	2,689.	537.8	ppb	1.20	2000.	
56 Fe	12,170.	2,434.	ppb	0.46	#VALUE!	
57 Fe	12,710.	2,542.	ppb	1.27	100000.	
59 Co	4.2725	0.8545	ppb	3.28	1000.	
60 Ni	39.895	7.979	ppb	0.98	1000.	
63 Cu	163.35	32.67	ppb	0.85	#VALUE!	
65 Cu	164.3	32.86	ppb	0.88	2000.	
66 Zn	1,168.	233.6	ppb	1.03	2000.	
68 Zn	1,145.	229.	ppb	1.27	#VALUE!	
75 As	5.855	1.171	ppb	29.73	1000.	
82 Se	2.7475	0.5495	ppb	10.38	1000.	
88 Sr	237.2	47.44	ppb	0.99	2000.	
98 Mo	13.505	2.701	ppb	1.44	1000.	
107 Ag	1.5825	0.3165	ppb	5.87	100.	
109 Ag	1.6615	0.3323	ppb	2.31	#VALUE!	
111 Cd	24.35	4.87	ppb	2.21	#VALUE!	
114 Cd	24.755	4.951	ppb	0.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.65	11.73	ppb	2.20	1000.	
120 Sn	59.15	11.83	ppb	1.21	#VALUE!	
121 Sb	0.9705	0.1941	ppb	15.29	#VALUE!	
123 Sb	1.2535	0.2507	ppb	21.48	1000.	
135 Ba	536.5	107.3	ppb	2.34	2000.	
137 Ba	533.5	106.7	ppb	2.95	#VALUE!	
182 W	1.362	0.2724	ppb	2.32	1000.	
203 Tl	1.396	0.2792	ppb	6.41	1000.	
205 Tl	1.336	0.2672	ppb	1.29	#VALUE!	
208 Pb	64.	12.8	ppb	0.76	2000.	
232 Th	2.705	0.541	ppb	8.47	1000.	
238 U	1.87	0.374	ppb	2.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3783287.00	1.28	3533775.30	107.1	69.5 - 120	
45 Sc	3509112.00	0.79	3253126.50	107.9	69.5 - 120	
89 Y	4934570.00	0.74	4442820.00	111.1	69.5 - 120	
159 Tb	5385798.00	1.94	4762571.00	113.1	69.5 - 120	
209 Bi	3027157.30	0.77	2744185.50	110.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000156

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\041SMPL.D\041SMPL.D#
Date Acquired: Mar 16 2018 04:29 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0016	-0.0016	ppb	109.12	100.	
11 B	1.149	1.149	ppb	17.47	1000.	
23 Na	2.275	2.275	ppb	4.40	200000.	
25 Mg	0.1664	0.1664	ppb	30.49	200000.	
27 Al	0.6125	0.6125	ppb	21.83	200000.	
28 Si	128.8	128.8	ppb	60.72	#VALUE!	
29 Si	-35.42	-35.42	ppb	51.67	10000.	
39 K	-4.075	-4.075	ppb	14.49	200000.	
43 Ca	-4.954	-4.954	ppb	54.28	#VALUE!	
44 Ca	2.314	2.314	ppb	25.11	200000.	
51 V	0.0791	0.0791	ppb	45.05	1000.	
52 Cr	0.003	0.003	ppb	379.80	2000.	
53 Cr	-0.1718	-0.1718	ppb	126.02	#VALUE!	
55 Mn	0.0233	0.0233	ppb	17.24	2000.	
56 Fe	2.506	2.506	ppb	107.70	#VALUE!	
57 Fe	-3.09	-3.09	ppb	16.73	100000.	
59 Co	0.0054	0.0054	ppb	5.33	1000.	
60 Ni	0.0023	0.0023	ppb	150.53	1000.	
63 Cu	0.0092	0.0092	ppb	40.30	#VALUE!	
65 Cu	-0.0061	-0.0061	ppb	174.06	2000.	
66 Zn	0.1976	0.1976	ppb	25.08	2000.	
68 Zn	0.0122	0.0122	ppb	832.51	#VALUE!	
75 As	0.0434	0.0434	ppb	117.09	1000.	
82 Se	0.023	0.023	ppb	1881.00	1000.	
88 Sr	0.0011	0.0011	ppb	311.21	2000.	
98 Mo	0.0126	0.0126	ppb	13.90	1000.	
107 Ag	-0.0002	-0.0002	ppb	1242.60	100.	
109 Ag	0.0005	0.0005	ppb	175.94	#VALUE!	
111 Cd	-0.0844	-0.0844	ppb	21.95	#VALUE!	
114 Cd	0.0013	0.0013	ppb	174.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0395	0.0395	ppb	14.32	1000.	
120 Sn	0.0238	0.0238	ppb	35.00	#VALUE!	
121 Sb	-0.1065	-0.1065	ppb	3.85	#VALUE!	
123 Sb	-0.0977	-0.0977	ppb	10.49	1000.	
135 Ba	0.013	0.013	ppb	115.63	2000.	
137 Ba	0.0012	0.0012	ppb	139.02	#VALUE!	
182 W	-0.0064	-0.0064	ppb	39.65	1000.	
203 Tl	0.0038	0.0038	ppb	13.29	1000.	
205 Tl	0.0003	0.0003	ppb	332.39	#VALUE!	
208 Pb	0.0046	0.0046	ppb	30.90	2000.	
232 Th	0.0025	0.0025	ppb	46.24	1000.	
238 U	0.0003	0.0003	ppb	158.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3490719.00	0.21	3533775.30	98.8	69.5 - 120	
45 Sc	3238894.80	0.32	3253126.50	99.6	69.5 - 120	
89 Y	4441553.50	0.37	4442820.00	100.0	69.5 - 120	
159 Tb	4773126.00	1.04	4762571.00	100.2	69.5 - 120	
209 Bi	2735638.00	0.53	2744185.50	99.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000157

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\042_CCV.D\042_CCV.D#
Date Acquired: Mar 16 2018 04:33 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.47	ppb	0.53	25	97.88	
11 B	24.66	ppb	2.61	25	98.64	
23 Na	4,939.	ppb	0.93	5,000	98.78	
25 Mg	5,028.	ppb	0.59	5,000	100.56	
27 Al	501.7	ppb	1.69	500	100.34	
28 Si	552.2	ppb	8.23	500	110.44	
29 Si	595.7	ppb	5.32	500	119.14	Fail
39 K	4,987.	ppb	0.64	5,000	99.74	
43 Ca	4,995.	ppb	0.97	5,000	99.9	
44 Ca	5,140.	ppb	0.85	5,000	102.8	
51 V	24.18	ppb	2.03	25	96.72	
52 Cr	24.08	ppb	0.72	25	96.32	
53 Cr	22.56	ppb	3.84	25	90.24	
55 Mn	24.31	ppb	1.35	25	97.24	
56 Fe	4,854.	ppb	1.57	5,000	97.08	
57 Fe	4,954.	ppb	0.49	5,000	99.08	
59 Co	24.14	ppb	1.08	25	96.56	
60 Ni	24.4	ppb	0.47	25	97.6	
63 Cu	24.23	ppb	0.93	25	96.92	
65 Cu	24.2	ppb	0.78	25	96.8	
66 Zn	24.35	ppb	0.47	25	97.4	
68 Zn	24.03	ppb	2.32	25	96.12	
75 As	24.37	ppb	2.02	25	97.48	
82 Se	25.18	ppb	1.78	25	100.72	
88 Sr	25.08	ppb	1.36	25	100.32	
98 Mo	24.21	ppb	1.04	25	96.84	
107 Ag	24.34	ppb	0.68	25	97.36	
109 Ag	24.58	ppb	1.50	25	98.32	
111 Cd	24.57	ppb	1.21	25	98.28	
114 Cd	24.78	ppb	0.46	25	99.12	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.52	ppb	0.53	25	98.08	
120 Sn	24.66	ppb	0.10	25	98.64	
121 Sb	24.54	ppb	0.71	25	98.16	
123 Sb	24.62	ppb	0.94	25	98.48	
135 Ba	24.71	ppb	0.85	25	98.84	
137 Ba	24.69	ppb	0.55	25	98.76	
182 W	24.35	ppb	0.80	25	97.4	
203 Tl	24.62	ppb	0.67	25	98.48	
205 Tl	24.59	ppb	0.43	25	98.36	
208 Pb	24.63	ppb	0.79	25	98.52	
232 Th	24.37	ppb	0.82	25	97.48	
238 U	24.04	ppb	0.71	25	96.16	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3783869.50	0.71	3533775.30	107.1	80 - 120.4	
45 Sc	3511695.80	0.36	3253126.50	107.9	80 - 120.4	
89 Y	4849966.50	0.57	4442820.00	109.2	80 - 120.4	
159 Tb	5227910.50	0.25	4762571.00	109.8	80 - 120.4	
209 Bi	2932264.80	0.19	2744185.50	106.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000158

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\043_CCB.D\043_CCB.D#
Date Acquired: Mar 16 2018 04:36 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0004	ppb	369.99	1.00	
11 B	0.81	ppb	13.28	1.00	
23 Na	2.098	ppb	19.44	1.00	
25 Mg	0.2531	ppb	62.39	1.00	
27 Al	0.942	ppb	17.37	1.00	
28 Si	154.5	ppb	47.67	1.00	
29 Si	-31.07	ppb	77.92	1.00	
39 K	-2.716	ppb	71.94	1.00	
43 Ca	-1.121	ppb	109.90	1.00	
44 Ca	0.5372	ppb	556.22	1.00	
51 V	0.0189	ppb	264.61	1.00	
52 Cr	-0.0782	ppb	33.47	1.00	
53 Cr	-3.287	ppb	4.30	1.00	
55 Mn	0.0313	ppb	32.00	1.00	
56 Fe	-3.014	ppb	33.74	1.00	
57 Fe	-3.475	ppb	19.52	1.00	
59 Co	0.0032	ppb	1.22	1.00	
60 Ni	0.0118	ppb	16.33	1.00	
63 Cu	0.0369	ppb	16.02	1.00	
65 Cu	0.0434	ppb	12.31	1.00	
66 Zn	0.2025	ppb	10.50	1.00	
68 Zn	-0.0801	ppb	67.26	1.00	
75 As	0.009	ppb	1098.80	1.00	
82 Se	-0.0643	ppb	175.09	1.00	
88 Sr	0.0024	ppb	161.84	1.00	
98 Mo	0.0206	ppb	33.66	1.00	
107 Ag	0.0067	ppb	17.88	1.00	
109 Ag	0.0079	ppb	24.59	1.00	
111 Cd	-0.1028	ppb	17.72	1.00	
114 Cd	-0.0028	ppb	127.77	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0669	ppb	36.40	1.00	
120 Sn	0.0502	ppb	10.57	1.00	
121 Sb	-0.1005	ppb	11.76	1.00	
123 Sb	-0.099	ppb	26.07	1.00	
135 Ba	0.0203	ppb	54.89	1.00	
137 Ba	0.013	ppb	109.57	1.00	
182 W	0.0084	ppb	22.08	1.00	
203 Tl	0.0073	ppb	38.38	1.00	
205 Tl	0.0029	ppb	20.04	1.00	
208 Pb	0.0036	ppb	61.91	1.00	
232 Th	0.015	ppb	8.87	1.00	
238 U	0.0026	ppb	75.33	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3474861.50	1.23	3533775.30	98.3	79.5 - 120	
45 Sc	3248438.30	1.03	3253126.50	99.9	79.5 - 120	
89 Y	4468201.00	0.36	4442820.00	100.6	79.5 - 120	
159 Tb	4789014.50	0.49	4762571.00	100.6	79.5 - 120	
209 Bi	2736173.00	0.66	2744185.50	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000159

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\044SMPL.D\044SMPL.D#
Date Acquired: Mar 16 2018 04:40 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2082-003
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.45	1.09	ppb	1.52	100.	
11 B	1,417.5	283.5	ppb	1.90	1000.	
23 Na	29,370.	5,874.	ppb	0.84	200000.	
25 Mg	59,400.	11,880.	ppb	1.85	200000.	
27 Al	483,650.	96,730.	ppb	0.68	200000.	
28 Si	1,294.5	258.9	ppb	19.50	#VALUE!	
29 Si	47.985	9.597	ppb	315.62	10000.	
39 K	140,500.	28,100.	ppb	0.43	200000.	
43 Ca	1,229,500.	245,900.	ppb	1.77	#VALUE!	
44 Ca	1,229,500.	245,900.	ppb	0.92	200000.	>LDR
51 V	205.3	41.06	ppb	1.05	1000.	
52 Cr	294.7	58.94	ppb	0.98	2000.	
53 Cr	326.3	65.26	ppb	1.59	#VALUE!	
55 Mn	42,985.	8,597.	ppb	1.17	2000.	>LDR
56 Fe	83,950.	16,790.	ppb	1.26	#VALUE!	
57 Fe	84,100.	16,820.	ppb	0.44	100000.	
59 Co	33.525	6.705	ppb	0.37	1000.	
60 Ni	217.3	43.46	ppb	1.59	1000.	
63 Cu	822.	164.4	ppb	1.21	#VALUE!	
65 Cu	845.5	169.1	ppb	1.61	2000.	
66 Zn	2,534.5	506.9	ppb	1.68	2000.	
68 Zn	2,726.5	545.3	ppb	1.01	#VALUE!	
75 As	21.005	4.201	ppb	1.63	1000.	
82 Se	4.2535	0.8507	ppb	39.34	1000.	
88 Sr	5,065.	1,013.	ppb	0.47	2000.	
98 Mo	52.	10.4	ppb	1.98	1000.	
107 Ag	4.826	0.9652	ppb	0.10	100.	
109 Ag	4.8105	0.9621	ppb	2.01	#VALUE!	
111 Cd	45.975	9.195	ppb	0.80	#VALUE!	
114 Cd	44.77	8.954	ppb	1.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	69.85	13.97	ppb	2.15	1000.	
120 Sn	70.1	14.02	ppb	0.47	#VALUE!	
121 Sb	1.5365	0.3073	ppb	29.18	#VALUE!	
123 Sb	1.5665	0.3133	ppb	29.40	1000.	
135 Ba	7,865.	1,573.	ppb	0.56	2000.	
137 Ba	7,645.	1,529.	ppb	0.93	#VALUE!	
182 W	8.06	1.612	ppb	0.30	1000.	
203 Tl	2.4025	0.4805	ppb	2.47	1000.	
205 Tl	2.4325	0.4865	ppb	3.73	#VALUE!	
208 Pb	190.	38.	ppb	0.70	2000.	
232 Th	59.1	11.82	ppb	1.19	1000.	
238 U	11.845	2.369	ppb	1.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3870822.80	0.25	3533775.30	109.5	69.5 - 120	
45 Sc	3669796.30	1.11	3253126.50	112.8	69.5 - 120	
89 Y	5132007.00	1.14	4442820.00	115.5	69.5 - 120	
159 Tb	5357721.50	0.65	4762571.00	112.5	69.5 - 120	
209 Bi	2818055.50	1.18	2744185.50	102.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000160

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\045SMPL.D\045SMPL.D#
Date Acquired: Mar 16 2018 04:44 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0019	-0.0004	ppb	654.70	100.	
11 B	22.515	4.503	ppb	19.85	1000.	
23 Na	10.54	2.108	ppb	8.94	200000.	
25 Mg	1.529	0.3058	ppb	21.33	200000.	
27 Al	5.295	1.059	ppb	13.92	200000.	
28 Si	884.5	176.9	ppb	37.22	#VALUE!	
29 Si	-24.13	-4.826	ppb	502.07	10000.	
39 K	-7.83	-1.566	ppb	97.06	200000.	
43 Ca	-4.615	-0.923	ppb	393.93	#VALUE!	
44 Ca	20.52	4.104	ppb	112.45	200000.	
51 V	-0.1641	-0.0328	ppb	254.97	1000.	
52 Cr	-0.1946	-0.0389	ppb	33.66	2000.	
53 Cr	-10.245	-2.049	ppb	11.10	#VALUE!	
55 Mn	0.4457	0.0891	ppb	17.46	2000.	
56 Fe	21.66	4.332	ppb	52.79	#VALUE!	
57 Fe	-14.3	-2.86	ppb	71.50	100000.	
59 Co	0.0082	0.0016	ppb	196.39	1000.	
60 Ni	0.0333	0.0067	ppb	60.97	1000.	
63 Cu	0.0564	0.0113	ppb	58.47	#VALUE!	
65 Cu	0.0457	0.0091	ppb	85.06	2000.	
66 Zn	0.4242	0.0848	ppb	36.27	2000.	
68 Zn	-0.4817	-0.0963	ppb	155.30	#VALUE!	
75 As	-0.0567	-0.0113	ppb	1789.20	1000.	
82 Se	0.4296	0.0859	ppb	295.27	1000.	
88 Sr	0.0432	0.0086	ppb	35.36	2000.	
98 Mo	0.0805	0.0161	ppb	20.16	1000.	
107 Ag	-0.007	-0.0014	ppb	22.27	100.	
109 Ag	0.0024	0.0005	ppb	189.10	#VALUE!	
111 Cd	-0.625	-0.125	ppb	35.05	#VALUE!	
114 Cd	-0.0322	-0.0064	ppb	85.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1851	0.037	ppb	10.71	1000.	
120 Sn	0.1452	0.029	ppb	47.47	#VALUE!	
121 Sb	-0.597	-0.1194	ppb	5.28	#VALUE!	
123 Sb	-0.568	-0.1136	ppb	2.69	1000.	
135 Ba	0.0319	0.0064	ppb	136.10	2000.	
137 Ba	0.0118	0.0024	ppb	111.59	#VALUE!	
182 W	-0.0665	-0.0133	ppb	20.25	1000.	
203 Tl	0.0186	0.0037	ppb	36.45	1000.	
205 Tl	-0.0001	0.	ppb	1630.00	#VALUE!	
208 Pb	0.0046	0.0009	ppb	528.23	2000.	
232 Th	0.0376	0.0075	ppb	31.27	1000.	
238 U	-0.0005	-0.0001	ppb	490.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3486141.50	1.08	3533775.30	98.7	69.5 - 120	
45 Sc	3254232.30	0.67	3253126.50	100.0	69.5 - 120	
89 Y	4500259.50	0.82	4442820.00	101.3	69.5 - 120	
159 Tb	4797146.50	1.91	4762571.00	100.7	69.5 - 120	
209 Bi	2763885.50	0.92	2744185.50	100.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000161

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\046SMPL.D\046SMPL.D#
Date Acquired: Mar 16 2018 04:48 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0012	-0.0012	ppb	116.52	100.	
11 B	1.992	1.992	ppb	8.96	1000.	
23 Na	1.948	1.948	ppb	5.73	200000.	
25 Mg	0.319	0.319	ppb	32.32	200000.	
27 Al	0.863	0.863	ppb	14.69	200000.	
28 Si	145.5	145.5	ppb	41.40	#VALUE!	
29 Si	-29.74	-29.74	ppb	146.91	10000.	
39 K	-1.126	-1.126	ppb	184.01	200000.	
43 Ca	-1.974	-1.974	ppb	155.42	#VALUE!	
44 Ca	1.825	1.825	ppb	78.19	200000.	
51 V	0.0144	0.0144	ppb	196.88	1000.	
52 Cr	-0.0225	-0.0225	ppb	135.77	2000.	
53 Cr	-1.59	-1.59	ppb	4.71	#VALUE!	
55 Mn	0.0706	0.0706	ppb	32.48	2000.	
56 Fe	3.318	3.318	ppb	43.79	#VALUE!	
57 Fe	-1.131	-1.131	ppb	146.51	100000.	
59 Co	0.0005	0.0005	ppb	235.11	1000.	
60 Ni	-0.0038	-0.0038	ppb	142.74	1000.	
63 Cu	0.0106	0.0106	ppb	11.52	#VALUE!	
65 Cu	0.0014	0.0014	ppb	193.72	2000.	
66 Zn	0.0576	0.0576	ppb	34.18	2000.	
68 Zn	-0.0056	-0.0056	ppb	3215.30	#VALUE!	
75 As	0.0257	0.0257	ppb	548.85	1000.	
82 Se	0.0428	0.0428	ppb	1040.20	1000.	
88 Sr	0.0067	0.0067	ppb	11.89	2000.	
98 Mo	0.0082	0.0082	ppb	24.61	1000.	
107 Ag	-0.0006	-0.0006	ppb	462.84	100.	
109 Ag	0.0008	0.0008	ppb	82.29	#VALUE!	
111 Cd	-0.0527	-0.0527	ppb	5.34	#VALUE!	
114 Cd	0.0013	0.0013	ppb	161.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0293	0.0293	ppb	38.75	1000.	
120 Sn	0.0179	0.0179	ppb	32.73	#VALUE!	
121 Sb	-0.1248	-0.1248	ppb	2.26	#VALUE!	
123 Sb	-0.1151	-0.1151	ppb	4.07	1000.	
135 Ba	0.0072	0.0072	ppb	22.12	2000.	
137 Ba	0.012	0.012	ppb	44.26	#VALUE!	
182 W	-0.0112	-0.0112	ppb	39.31	1000.	
203 Tl	0.0037	0.0037	ppb	15.19	1000.	
205 Tl	0.0003	0.0003	ppb	511.20	#VALUE!	
208 Pb	0.0014	0.0014	ppb	146.49	2000.	
232 Th	0.0048	0.0048	ppb	6.63	1000.	
238 U	-0.0006	-0.0006	ppb	48.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3532152.80	0.98	3533775.30	100.0	69.5 - 120	
45 Sc	3283360.30	1.75	3253126.50	100.9	69.5 - 120	
89 Y	4507681.00	1.80	4442820.00	101.5	69.5 - 120	
159 Tb	4843476.00	1.60	4762571.00	101.7	69.5 - 120	
209 Bi	2766358.50	1.05	2744185.50	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000162

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\047SMPL.D\047SMPL.D#
Date Acquired: Mar 16 2018 04:52 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: PBWLC16IMW1
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0122	-0.0024	ppb	56.22	100.	
11 B	5.975	1.195	ppb	16.79	1000.	
23 Na	24.535	4.907	ppb	2.37	200000.	
25 Mg	4.574	0.9148	ppb	8.89	200000.	
27 Al	5.225	1.045	ppb	7.90	200000.	
28 Si	305.95	61.19	ppb	40.38	#VALUE!	
29 Si	-227.	-45.4	ppb	51.61	10000.	
39 K	-1.309	-0.2618	ppb	361.92	200000.	
43 Ca	-11.135	-2.227	ppb	201.17	#VALUE!	
44 Ca	7.985	1.597	ppb	94.93	200000.	
51 V	0.1191	0.0238	ppb	687.95	1000.	
52 Cr	0.7395	0.1479	ppb	16.53	2000.	
53 Cr	47.685	9.537	ppb	4.05	#VALUE!	
55 Mn	0.3123	0.0625	ppb	20.53	2000.	
56 Fe	17.61	3.522	ppb	6.14	#VALUE!	
57 Fe	-16.56	-3.312	ppb	37.68	100000.	
59 Co	0.0139	0.0028	ppb	138.40	1000.	
60 Ni	0.0098	0.002	ppb	262.77	1000.	
63 Cu	0.1576	0.0315	ppb	20.15	#VALUE!	
65 Cu	0.0993	0.0199	ppb	96.93	2000.	
66 Zn	0.038	0.0076	ppb	833.11	2000.	
68 Zn	-1.922	-0.3844	ppb	9.00	#VALUE!	
75 As	1.007	0.2014	ppb	63.46	1000.	
82 Se	1.4955	0.2991	ppb	58.74	1000.	
88 Sr	0.0394	0.0079	ppb	27.35	2000.	
98 Mo	0.062	0.0124	ppb	15.58	1000.	
107 Ag	-0.0042	-0.0008	ppb	93.69	100.	
109 Ag	0.0056	0.0011	ppb	117.25	#VALUE!	
111 Cd	-0.1673	-0.0335	ppb	42.95	#VALUE!	
114 Cd	-0.0035	-0.0007	ppb	243.17	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.104	0.2208	ppb	2.38	1000.	
120 Sn	1.1025	0.2205	ppb	4.86	#VALUE!	
121 Sb	1.2345	0.2469	ppb	4.77	#VALUE!	
123 Sb	1.246	0.2492	ppb	10.31	1000.	
135 Ba	0.0631	0.0126	ppb	112.60	2000.	
137 Ba	-0.004	-0.0008	ppb	609.71	#VALUE!	
182 W	0.0636	0.0127	ppb	63.57	1000.	
203 Tl	0.0099	0.002	ppb	68.54	1000.	
205 Tl	-0.0032	-0.0006	ppb	144.02	#VALUE!	
208 Pb	0.0203	0.0041	ppb	62.27	2000.	
232 Th	0.0587	0.0117	ppb	5.85	1000.	
238 U	-0.002	-0.0004	ppb	85.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3519359.00	0.45	3533775.30	99.6	69.5 - 120	
45 Sc	3240788.50	0.58	3253126.50	99.6	69.5 - 120	
89 Y	4565317.50	1.21	4442820.00	102.8	69.5 - 120	
159 Tb	4831866.50	1.09	4762571.00	101.5	69.5 - 120	
209 Bi	2774895.00	0.79	2744185.50	101.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000163

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\048SMPL.D\048SMPL.D#
Date Acquired: Mar 16 2018 04:56 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: LCSWLC16IMW1
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	47.715	9.543	ppb	0.40	100.	
11 B	491.95	98.39	ppb	1.42	1000.	
23 Na	7,455.	1,491.	ppb	0.43	200000.	
25 Mg	5,225.	1,045.	ppb	1.45	200000.	
27 Al	2,073.5	414.7	ppb	1.15	200000.	
28 Si	951.5	190.3	ppb	12.38	#VALUE!	
29 Si	-18.74	-3.748	ppb	184.85	10000.	
39 K	9,835.	1,967.	ppb	0.79	200000.	
43 Ca	2,889.	577.8	ppb	3.41	#VALUE!	
44 Ca	2,525.	505.	ppb	1.04	200000.	
51 V	498.35	99.67	ppb	0.81	1000.	
52 Cr	193.05	38.61	ppb	0.79	2000.	
53 Cr	236.3	47.26	ppb	1.32	#VALUE!	
55 Mn	488.35	97.67	ppb	1.34	2000.	
56 Fe	926.	185.2	ppb	1.36	#VALUE!	
57 Fe	943.5	188.7	ppb	1.23	100000.	
59 Co	495.5	99.1	ppb	0.38	1000.	
60 Ni	489.1	97.82	ppb	0.63	1000.	
63 Cu	242.7	48.54	ppb	0.29	#VALUE!	
65 Cu	244.95	48.99	ppb	0.44	2000.	
66 Zn	480.05	96.01	ppb	0.72	2000.	
68 Zn	541.5	108.3	ppb	0.61	#VALUE!	
75 As	98.95	19.79	ppb	2.98	1000.	
82 Se	98.05	19.61	ppb	4.70	1000.	
88 Sr	510.5	102.1	ppb	1.04	2000.	
98 Mo	99.3	19.86	ppb	0.19	1000.	
107 Ag	49.19	9.838	ppb	0.29	100.	
109 Ag	49.53	9.906	ppb	0.49	#VALUE!	
111 Cd	250.35	50.07	ppb	0.68	#VALUE!	
114 Cd	248.7	49.74	ppb	0.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	488.95	97.79	ppb	1.13	1000.	
120 Sn	489.25	97.85	ppb	0.75	#VALUE!	
121 Sb	101.6	20.32	ppb	1.16	#VALUE!	
123 Sb	101.55	20.31	ppb	0.68	1000.	
135 Ba	2,058.	411.6	ppb	0.54	2000.	
137 Ba	2,019.	403.8	ppb	1.34	#VALUE!	
182 W	98.5	19.7	ppb	1.50	1000.	
203 Tl	99.65	19.93	ppb	2.00	1000.	
205 Tl	99.45	19.89	ppb	0.57	#VALUE!	
208 Pb	101.5	20.3	ppb	0.88	2000.	
232 Th	97.6	19.52	ppb	0.49	1000.	
238 U	98.15	19.63	ppb	0.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3780442.80	0.70	3533775.30	107.0	69.5 - 120	
45 Sc	3425297.30	0.07	3253126.50	105.3	69.5 - 120	
89 Y	4802979.50	1.11	4442820.00	108.1	69.5 - 120	
159 Tb	5167514.50	0.69	4762571.00	108.5	69.5 - 120	
209 Bi	2922606.50	0.25	2744185.50	106.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000164

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\049SMPL.D\049SMPL.D#
Date Acquired: Mar 16 2018 05:00 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2079-014
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0068	-0.0014	ppb	49.83	100.	
11 B	10.65	2.13	ppb	14.13	1000.	
23 Na	42.755	8.551	ppb	3.05	200000.	
25 Mg	12.95	2.59	ppb	0.21	200000.	
27 Al	9.175	1.835	ppb	4.33	200000.	
28 Si	16.725	3.345	ppb	1643.30	#VALUE!	
29 Si	-290.75	-58.15	ppb	51.90	10000.	
39 K	-2.1635	-0.4327	ppb	383.87	200000.	
43 Ca	71.65	14.33	ppb	16.30	#VALUE!	
44 Ca	60.85	12.17	ppb	17.80	200000.	
51 V	0.3574	0.0715	ppb	113.57	1000.	
52 Cr	0.7515	0.1503	ppb	8.06	2000.	
53 Cr	35.64	7.128	ppb	4.36	#VALUE!	
55 Mn	0.518	0.1036	ppb	17.07	2000.	
56 Fe	21.375	4.275	ppb	61.90	#VALUE!	
57 Fe	1.514	0.3028	ppb	129.03	100000.	
59 Co	0.0328	0.0066	ppb	20.10	1000.	
60 Ni	0.0748	0.015	ppb	74.67	1000.	
63 Cu	0.2715	0.0543	ppb	31.47	#VALUE!	
65 Cu	0.2345	0.0469	ppb	22.71	2000.	
66 Zn	0.596	0.1192	ppb	26.40	2000.	
68 Zn	-0.997	-0.1994	ppb	45.79	#VALUE!	
75 As	0.1844	0.0369	ppb	917.30	1000.	
82 Se	0.2635	0.0527	ppb	276.28	1000.	
88 Sr	0.3886	0.0777	ppb	4.28	2000.	
98 Mo	0.1503	0.0301	ppb	6.16	1000.	
107 Ag	-0.0027	-0.0005	ppb	500.75	100.	
109 Ag	-0.0022	-0.0004	ppb	175.71	#VALUE!	
111 Cd	-0.2127	-0.0425	ppb	49.17	#VALUE!	
114 Cd	-0.0002	0.	ppb	6766.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.196	0.2392	ppb	7.07	1000.	
120 Sn	1.1265	0.2253	ppb	2.94	#VALUE!	
121 Sb	0.9635	0.1927	ppb	16.02	#VALUE!	
123 Sb	1.021	0.2042	ppb	22.54	1000.	
135 Ba	0.1839	0.0368	ppb	36.43	2000.	
137 Ba	0.1471	0.0294	ppb	28.74	#VALUE!	
182 W	0.0603	0.0121	ppb	65.82	1000.	
203 Tl	0.0226	0.0045	ppb	55.70	1000.	
205 Tl	0.014	0.0028	ppb	49.55	#VALUE!	
208 Pb	0.0133	0.0027	ppb	7.89	2000.	
232 Th	0.1477	0.0295	ppb	45.16	1000.	
238 U	0.0055	0.0011	ppb	123.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3607254.00	0.40	3533775.30	102.1	69.5 - 120	
45 Sc	3290631.50	1.03	3253126.50	101.2	69.5 - 120	
89 Y	4581910.00	0.08	4442820.00	103.1	69.5 - 120	
159 Tb	4943711.00	0.47	4762571.00	103.8	69.5 - 120	
209 Bi	2795504.30	0.48	2744185.50	101.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000165

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\050SMPL.D\050SMPL.D#
Date Acquired: Mar 16 2018 05:04 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2081-011
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0055	-0.0011	ppb	105.87	100.	
11 B	5.27	1.054	ppb	6.90	1000.	
23 Na	28.78	5.756	ppb	6.27	200000.	
25 Mg	5.92	1.184	ppb	11.06	200000.	
27 Al	6.375	1.275	ppb	9.44	200000.	
28 Si	-22.77	-4.554	ppb	878.79	#VALUE!	
29 Si	-265.8	-53.16	ppb	59.18	10000.	
39 K	7.44	1.488	ppb	245.23	200000.	
43 Ca	-17.165	-3.433	ppb	135.54	#VALUE!	
44 Ca	4.3005	0.8601	ppb	382.05	200000.	
51 V	0.1843	0.0369	ppb	87.03	1000.	
52 Cr	0.6505	0.1301	ppb	19.54	2000.	
53 Cr	36.94	7.388	ppb	5.25	#VALUE!	
55 Mn	0.2923	0.0585	ppb	12.14	2000.	
56 Fe	-2.0115	-0.4023	ppb	287.84	#VALUE!	
57 Fe	-12.24	-2.448	ppb	48.16	100000.	
59 Co	0.0111	0.0022	ppb	127.87	1000.	
60 Ni	0.0609	0.0122	ppb	79.67	1000.	
63 Cu	0.2597	0.0519	ppb	14.43	#VALUE!	
65 Cu	0.216	0.0432	ppb	30.88	2000.	
66 Zn	1.6065	0.3213	ppb	10.52	2000.	
68 Zn	0.1251	0.025	ppb	633.49	#VALUE!	
75 As	0.8545	0.1709	ppb	48.61	1000.	
82 Se	1.1075	0.2215	ppb	79.46	1000.	
88 Sr	0.07	0.014	ppb	39.08	2000.	
98 Mo	0.0545	0.0109	ppb	12.72	1000.	
107 Ag	-0.0058	-0.0012	ppb	107.36	100.	
109 Ag	0.0038	0.0008	ppb	106.43	#VALUE!	
111 Cd	-0.2593	-0.0519	ppb	37.45	#VALUE!	
114 Cd	-0.0167	-0.0033	ppb	86.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.423	0.2846	ppb	8.87	1000.	
120 Sn	1.235	0.247	ppb	1.58	#VALUE!	
121 Sb	0.952	0.1904	ppb	12.36	#VALUE!	
123 Sb	0.9815	0.1963	ppb	7.82	1000.	
135 Ba	0.1236	0.0247	ppb	50.22	2000.	
137 Ba	0.1038	0.0208	ppb	37.74	#VALUE!	
182 W	0.0435	0.0087	ppb	114.94	1000.	
203 Tl	0.0183	0.0037	ppb	33.55	1000.	
205 Tl	0.005	0.001	ppb	258.96	#VALUE!	
208 Pb	0.0163	0.0033	ppb	48.30	2000.	
232 Th	0.0542	0.0108	ppb	23.26	1000.	
238 U	-0.0013	-0.0003	ppb	88.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3537757.50	1.06	3533775.30	100.1	69.5 - 120	
45 Sc	3260098.50	0.96	3253126.50	100.2	69.5 - 120	
89 Y	4571729.00	0.86	4442820.00	102.9	69.5 - 120	
159 Tb	4895546.50	0.46	4762571.00	102.8	69.5 - 120	
209 Bi	2786935.30	1.56	2744185.50	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000166

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\051SMPL.D\051SMPL.D#
Date Acquired: Mar 16 2018 05:07 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2081-012
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.009	-0.0018	ppb	194.28	100.	
11 B	3.638	0.7276	ppb	9.71	1000.	
23 Na	78.8	15.76	ppb	2.06	200000.	
25 Mg	9.985	1.997	ppb	10.98	200000.	
27 Al	6.23	1.246	ppb	3.36	200000.	
28 Si	36.585	7.317	ppb	167.69	#VALUE!	
29 Si	-114.25	-22.85	ppb	102.84	10000.	
39 K	51.3	10.26	ppb	5.50	200000.	
43 Ca	46.265	9.253	ppb	10.65	#VALUE!	
44 Ca	36.23	7.246	ppb	33.63	200000.	
51 V	0.2469	0.0494	ppb	146.48	1000.	
52 Cr	0.6805	0.1361	ppb	14.53	2000.	
53 Cr	39.42	7.884	ppb	2.99	#VALUE!	
55 Mn	0.4943	0.0989	ppb	6.28	2000.	
56 Fe	-11.205	-2.241	ppb	52.79	#VALUE!	
57 Fe	-7.695	-1.539	ppb	56.62	100000.	
59 Co	0.0207	0.0041	ppb	77.31	1000.	
60 Ni	0.1442	0.0288	ppb	23.17	1000.	
63 Cu	1.3275	0.2655	ppb	5.14	#VALUE!	
65 Cu	1.16	0.232	ppb	7.70	2000.	
66 Zn	4.5415	0.9083	ppb	1.17	2000.	
68 Zn	3.031	0.6062	ppb	22.52	#VALUE!	
75 As	-0.2472	-0.0494	ppb	145.19	1000.	
82 Se	-1.2585	-0.2517	ppb	31.34	1000.	
88 Sr	0.2366	0.0473	ppb	4.53	2000.	
98 Mo	0.0545	0.0109	ppb	48.22	1000.	
107 Ag	-0.0002	0.	ppb	8389.10	100.	
109 Ag	0.0047	0.0009	ppb	146.79	#VALUE!	
111 Cd	-0.1872	-0.0374	ppb	79.27	#VALUE!	
114 Cd	-0.0217	-0.0043	ppb	73.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.6455	0.3291	ppb	2.41	1000.	
120 Sn	1.5535	0.3107	ppb	2.50	#VALUE!	
121 Sb	1.258	0.2516	ppb	9.46	#VALUE!	
123 Sb	1.28	0.256	ppb	17.48	1000.	
135 Ba	0.1882	0.0376	ppb	42.61	2000.	
137 Ba	0.1637	0.0327	ppb	13.29	#VALUE!	
182 W	0.054	0.0108	ppb	53.91	1000.	
203 Tl	0.0148	0.003	ppb	101.15	1000.	
205 Tl	0.0005	0.0001	ppb	383.36	#VALUE!	
208 Pb	0.0704	0.0141	ppb	7.48	2000.	
232 Th	0.0436	0.0087	ppb	8.09	1000.	
238 U	0.0031	0.0006	ppb	128.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3591536.30	0.75	3533775.30	101.6	69.5 - 120	
45 Sc	3306572.80	0.41	3253126.50	101.6	69.5 - 120	
89 Y	4570911.50	0.36	4442820.00	102.9	69.5 - 120	
159 Tb	4966211.50	1.16	4762571.00	104.3	69.5 - 120	
209 Bi	2839449.00	0.88	2744185.50	103.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000167

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\052SMPL.D\052SMPL.D#
Date Acquired: Mar 16 2018 05:11 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: SL2081-001
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0028	0.0006	ppb	169.24	100.	
11 B	7,350.	1,470.	ppb	2.75	1000.	>LDR
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	856,000.	171,200.	ppb	0.57	200000.	
27 Al	34.17	6.834	ppb	1.07	200000.	
28 Si	9,275.	1,855.	ppb	3.26	#VALUE!	
29 Si	7,550.	1,510.	ppb	2.86	10000.	
39 K	98,550.	19,710.	ppb	0.97	200000.	
43 Ca	629,000.	125,800.	ppb	0.93	#VALUE!	
44 Ca	609,500.	121,900.	ppb	0.47	200000.	
51 V	2.5425	0.5085	ppb	7.10	1000.	
52 Cr	10.42	2.084	ppb	0.70	2000.	
53 Cr	65.25	13.05	ppb	16.74	#VALUE!	
55 Mn	596.5	119.3	ppb	0.73	2000.	
56 Fe	27,495.	5,499.	ppb	0.49	#VALUE!	
57 Fe	28,665.	5,733.	ppb	0.41	100000.	
59 Co	1.005	0.201	ppb	3.42	1000.	
60 Ni	7.745	1.549	ppb	4.28	1000.	
63 Cu	70.3	14.06	ppb	0.52	#VALUE!	
65 Cu	3.7865	0.7573	ppb	6.94	2000.	
66 Zn	15.275	3.055	ppb	2.40	2000.	
68 Zn	4.09	0.818	ppb	12.69	#VALUE!	
75 As	37.33	7.466	ppb	5.22	1000.	
82 Se	20.315	4.063	ppb	2.32	1000.	
88 Sr	8,585.	1,717.	ppb	1.24	2000.	
98 Mo	236.25	47.25	ppb	0.98	1000.	
107 Ag	0.0105	0.0021	ppb	118.83	100.	
109 Ag	0.0027	0.0005	ppb	217.85	#VALUE!	
111 Cd	-0.0585	-0.0117	ppb	126.58	#VALUE!	
114 Cd	-0.0015	-0.0003	ppb	2271.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.3285	0.2657	ppb	5.65	1000.	
120 Sn	1.2915	0.2583	ppb	6.20	#VALUE!	
121 Sb	1.3675	0.2735	ppb	5.54	#VALUE!	
123 Sb	1.423	0.2846	ppb	6.49	1000.	
135 Ba	33.13	6.626	ppb	2.54	2000.	
137 Ba	32.93	6.586	ppb	1.22	#VALUE!	
182 W	0.1376	0.0275	ppb	33.40	1000.	
203 Tl	0.0893	0.0179	ppb	20.01	1000.	
205 Tl	0.0124	0.0025	ppb	10.16	#VALUE!	
208 Pb	0.0621	0.0124	ppb	38.87	2000.	
232 Th	0.0909	0.0182	ppb	10.38	1000.	
238 U	11.86	2.372	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3872448.80	0.52	3533775.30	109.6	69.5 - 120	
45 Sc	3642790.00	0.56	3253126.50	112.0	69.5 - 120	
89 Y	4637186.50	0.45	4442820.00	104.4	69.5 - 120	
159 Tb	4808091.00	1.56	4762571.00	101.0	69.5 - 120	
209 Bi	2462326.80	0.73	2744185.50	89.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000168

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\053SMPL.D\053SMPL.D#
Date Acquired: Mar 16 2018 05:15 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0005	0.0001	ppb	2805.70	100.	
11 B	83.7	16.74	ppb	18.34	1000.	
23 Na	65.55	13.11	ppb	15.39	200000.	
25 Mg	4.064	0.8128	ppb	34.83	200000.	
27 Al	2.0015	0.4003	ppb	15.22	200000.	
28 Si	1,277.5	255.5	ppb	17.57	#VALUE!	
29 Si	602.5	120.5	ppb	29.54	10000.	
39 K	24.36	4.872	ppb	25.49	200000.	
43 Ca	-27.855	-5.571	ppb	95.93	#VALUE!	
44 Ca	17.825	3.565	ppb	58.63	200000.	
51 V	0.4678	0.0936	ppb	72.06	1000.	
52 Cr	0.4668	0.0934	ppb	7.27	2000.	
53 Cr	37.72	7.544	ppb	4.60	#VALUE!	
55 Mn	0.1673	0.0335	ppb	32.62	2000.	
56 Fe	125.4	25.08	ppb	6.24	#VALUE!	
57 Fe	11.035	2.207	ppb	16.87	100000.	
59 Co	0.007	0.0014	ppb	126.32	1000.	
60 Ni	0.1204	0.0241	ppb	22.30	1000.	
63 Cu	0.0485	0.0097	ppb	97.97	#VALUE!	
65 Cu	0.0406	0.0081	ppb	89.56	2000.	
66 Zn	0.1679	0.0336	ppb	107.12	2000.	
68 Zn	0.047	0.0094	ppb	1561.90	#VALUE!	
75 As	0.1182	0.0236	ppb	1049.90	1000.	
82 Se	1.9465	0.3893	ppb	31.29	1000.	
88 Sr	0.0208	0.0042	ppb	98.34	2000.	
98 Mo	0.0628	0.0126	ppb	46.09	1000.	
107 Ag	0.0068	0.0014	ppb	55.27	100.	
109 Ag	0.0089	0.0018	ppb	91.59	#VALUE!	
111 Cd	-0.1836	-0.0367	ppb	24.98	#VALUE!	
114 Cd	-0.0243	-0.0049	ppb	93.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1468	0.0294	ppb	39.71	1000.	
120 Sn	0.1694	0.0339	ppb	2.45	#VALUE!	
121 Sb	-0.6445	-0.1289	ppb	7.57	#VALUE!	
123 Sb	-0.6585	-0.1317	ppb	2.63	1000.	
135 Ba	-0.0035	-0.0007	ppb	561.89	2000.	
137 Ba	0.021	0.0042	ppb	71.34	#VALUE!	
182 W	-0.0631	-0.0126	ppb	20.58	1000.	
203 Tl	0.0133	0.0027	ppb	101.51	1000.	
205 Tl	0.0002	0.	ppb	1160.10	#VALUE!	
208 Pb	-0.003	-0.0006	ppb	313.85	2000.	
232 Th	0.0105	0.0021	ppb	55.90	1000.	
238 U	-0.0008	-0.0002	ppb	383.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3756793.30	0.06	3533775.30	106.3	69.5 - 120	
45 Sc	3384094.00	0.80	3253126.50	104.0	69.5 - 120	
89 Y	4419886.50	0.25	4442820.00	99.5	69.5 - 120	
159 Tb	4659281.50	0.92	4762571.00	97.8	69.5 - 120	
209 Bi	2719745.80	0.14	2744185.50	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000169

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\054_CCV.D\054_CCV.D#
Date Acquired: Mar 16 2018 05:19 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.74	ppb	1.44	25	98.96	
11 B	30.47	ppb	0.92	25	121.88	Fail
23 Na	5,055.	ppb	0.59	5,000	101.1	
25 Mg	5,091.	ppb	0.36	5,000	101.82	
27 Al	510.7	ppb	0.36	500	102.14	
28 Si	694.4	ppb	8.69	500	138.88	
29 Si	746.4	ppb	2.46	500	149.28	Fail
39 K	5,005.	ppb	0.63	5,000	100.1	
43 Ca	4,969.	ppb	1.00	5,000	99.38	
44 Ca	5,179.	ppb	0.64	5,000	103.58	
51 V	24.91	ppb	1.56	25	99.64	
52 Cr	24.91	ppb	0.96	25	99.64	
53 Cr	22.96	ppb	6.17	25	91.84	
55 Mn	24.79	ppb	0.96	25	99.16	
56 Fe	4,931.	ppb	0.29	5,000	98.62	
57 Fe	5,085.	ppb	0.39	5,000	101.7	
59 Co	24.7	ppb	1.04	25	98.8	
60 Ni	24.93	ppb	0.83	25	99.72	
63 Cu	24.93	ppb	1.03	25	99.72	
65 Cu	25.07	ppb	0.75	25	100.28	
66 Zn	25.01	ppb	0.49	25	100.04	
68 Zn	24.46	ppb	0.28	25	97.84	
75 As	24.89	ppb	1.09	25	99.56	
82 Se	24.65	ppb	1.29	25	98.6	
88 Sr	24.91	ppb	0.29	25	99.64	
98 Mo	24.18	ppb	0.28	25	96.72	
107 Ag	24.31	ppb	0.44	25	97.24	
109 Ag	24.53	ppb	0.59	25	98.12	
111 Cd	24.39	ppb	0.67	25	97.56	
114 Cd	24.44	ppb	0.91	25	97.76	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.36	ppb	1.14	25	97.44	
120 Sn	24.64	ppb	1.40	25	98.56	
121 Sb	24.58	ppb	0.83	25	98.32	
123 Sb	24.43	ppb	1.52	25	97.72	
135 Ba	24.69	ppb	1.72	25	98.76	
137 Ba	24.75	ppb	1.46	25	99	
182 W	24.46	ppb	0.32	25	97.84	
203 Tl	24.55	ppb	0.61	25	98.2	
205 Tl	24.48	ppb	0.68	25	97.92	
208 Pb	24.47	ppb	0.47	25	97.88	
232 Th	24.02	ppb	0.69	25	96.08	
238 U	23.79	ppb	1.10	25	95.16	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3976259.50	0.76	3533775.30	112.5	80 - 120.4	
45 Sc	3623197.00	0.43	3253126.50	111.4	80 - 120.4	
89 Y	4831111.00	0.24	4442820.00	108.7	80 - 120.4	
159 Tb	5161460.50	0.55	4762571.00	108.4	80 - 120.4	
209 Bi	2917463.50	0.71	2744185.50	106.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000170

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC16A.B\055_CCB.D\055_CCB.D#
Date Acquired: Mar 16 2018 05:23 pm
Acq. Method: 1PTCAL16.M
Operator: JS
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 16 2018 03:06 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0001	ppb	2756.50	1.00	
11 B	3.84	ppb	5.29	1.00	
23 Na	8.643	ppb	8.33	1.00	
25 Mg	1.061	ppb	18.62	1.00	
27 Al	0.963	ppb	13.86	1.00	
28 Si	174.6	ppb	24.22	1.00	
29 Si	38.12	ppb	52.28	1.00	
39 K	-0.8382	ppb	71.43	1.00	
43 Ca	-4.023	ppb	96.89	1.00	
44 Ca	1.627	ppb	166.63	1.00	
51 V	0.06	ppb	189.27	1.00	
52 Cr	-0.0687	ppb	19.77	1.00	
53 Cr	-3.799	ppb	5.25	1.00	
55 Mn	0.0407	ppb	11.05	1.00	
56 Fe	3.974	ppb	3.06	1.00	
57 Fe	1.066	ppb	53.60	1.00	
59 Co	0.004	ppb	18.78	1.00	
60 Ni	0.0134	ppb	61.76	1.00	
63 Cu	0.0331	ppb	24.70	1.00	
65 Cu	0.0307	ppb	33.96	1.00	
66 Zn	0.1675	ppb	55.73	1.00	
68 Zn	0.1543	ppb	131.82	1.00	
75 As	0.054	ppb	56.00	1.00	
82 Se	0.0359	ppb	298.64	1.00	
88 Sr	0.0123	ppb	45.11	1.00	
98 Mo	0.0205	ppb	40.14	1.00	
107 Ag	0.0049	ppb	21.74	1.00	
109 Ag	0.0059	ppb	67.23	1.00	
111 Cd	-0.0418	ppb	85.87	1.00	
114 Cd	-0.0033	ppb	115.29	1.00	
115 In	--------	---	--------	---	
118 Sn	0.072	ppb	23.50	1.00	
120 Sn	0.0525	ppb	32.57	1.00	
121 Sb	-0.1524	ppb	1.67	1.00	
123 Sb	-0.1493	ppb	6.54	1.00	
135 Ba	0.0227	ppb	78.03	1.00	
137 Ba	0.0106	ppb	101.50	1.00	
182 W	0.0042	ppb	241.83	1.00	
203 Tl	0.0057	ppb	30.34	1.00	
205 Tl	0.0032	ppb	63.12	1.00	
208 Pb	0.0019	ppb	84.49	1.00	
232 Th	0.0132	ppb	23.76	1.00	
238 U	0.0042	ppb	33.19	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3648787.00	1.76	3533775.30	103.3	79.5 - 120	
45 Sc	3372341.50	0.54	3253126.50	103.7	79.5 - 120	
89 Y	4474151.00	0.73	4442820.00	100.7	79.5 - 120	
159 Tb	4774319.00	1.61	4762571.00	100.2	79.5 - 120	
209 Bi	2764811.80	0.29	2744185.50	100.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC16A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000171

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 03/20/2018

FILE NAME: JLC20C **METHOD: ICP-MS**

- ☐ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
JS 3.22.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by _____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17581	02/21/2018	02/21/2019	0 ug/L
Standard 1	MW17608	03/09/2018	03/21/2018	Varies by Element
ICV	MW17588	02/23/2018	05/23/2018	Varies by Element
PQL	MW17610	03/12/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17570	02/16/2018	05/14/2018	Varies by Element
ICSA	MW17613	03/14/2018	03/20/2018	Varies by Element
ICSAB	MW17614	03/14/2018	03/20/2018	Varies by Element
CCV	MW17615	03/14/2018	03/21/2018	Varies by Element
Internal Standard	MW17585	02/22/2018	05/22/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Zn failed for DOD in the opening PQL, accepted all DOD samples with zinc concentrations greater than 10x the PQL result for zinc
- Accepted results for DOD samples with low Bi internal standard recoveries were accepted for internal std. recovery within DOD limits (30-120% recovery)

JS 3.22.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17581(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17581(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC20C	3/20/2018	5:25:00 14:01	MD
200.8 TUNE	1	JLC20C	3/20/2018	5:25:00 14:04	MD
Cal Blank	1	JLC20C	3/20/2018	5:25:00 17:25	MD
Cal Std 6	1	JLC20C	3/20/2018	5:29:00 17:29	MD
ICV	1	JLC20C	3/20/2018	5:33:00 17:33	MD
ICB	1	JLC20C	3/20/2018	5:37:00 17:37	MD
PQL	1	JLC20C	3/20/2018	5:40:00 17:40	MD
RINSE	1	JLC20C	3/20/2018	5:44:00 17:44	MD
ICSA	1	JLC20C	3/20/2018	5:48:00 17:48	MD
ICSAB	1	JLC20C	3/20/2018	5:53:00 17:53	MD
RINSE	1	JLC20C	3/20/2018	5:57:00 17:57	MD
LRS1	1	JLC20C	3/20/2018	6:01:00 18:01	MD
LRS2	1	JLC20C	3/20/2018	6:04:00 18:04	MD
RINSE	1	JLC20C	3/20/2018	6:09:00 18:09	MD
RINSE	1	JLC20C	3/20/2018	6:13:00 18:13	MD
CCV	1	JLC20C	3/20/2018	6:17:00 18:17	MD
CCB	1	JLC20C	3/20/2018	6:21:00 18:21	MD
PBSLC19IMS1	5	JLC20C	3/20/2018	6:25:00 18:25	MD
LCSOLC19IMS1	5	JLC20C	3/20/2018	6:29:00 18:29	MD
SL2079-001	5	JLC20C	3/20/2018	6:33:00 18:33	MD
SL2079-002	5	JLC20C	3/20/2018	6:37:00 18:37	MD
SL2079-003	5	JLC20C	3/20/2018	6:41:00 18:41	MD
SL2079-004	5	JLC20C	3/20/2018	6:45:00 18:45	MD
SL2079-005	5	JLC20C	3/20/2018	6:50:00 18:50	MD
SL2079-006	5	JLC20C	3/20/2018	6:54:00 18:54	MD
SL2079-007	5	JLC20C	3/20/2018	6:58:00 18:58	MD
RINSE	1	JLC20C	3/20/2018	7:02:00 19:02	MD
CCV	1	JLC20C	3/20/2018	7:06:00 19:06	MD
CCB	1	JLC20C	3/20/2018	7:10:00 19:10	MD
SL2079-008	5	JLC20C	3/20/2018	7:14:00 19:14	MD
SL2079-009	5	JLC20C	3/20/2018	7:19:00 19:19	MD
SL2079-009L	25	JLC20C	3/20/2018	7:23:00 19:23	MD
SL2079-009A	5	JLC20C	3/20/2018	7:27:00 19:27	MD
SL2079-009S	5	JLC20C	3/20/2018	7:31:00 19:31	MD
SL2079-009P	5	JLC20C	3/20/2018	7:35:00 19:35	MD
SL2079-010	5	JLC20C	3/20/2018	7:40:00 19:40	MD
SL2079-011	5	JLC20C	3/20/2018	7:44:00 19:44	MD
SL2079-012	5	JLC20C	3/20/2018	7:48:00 19:48	MD
RINSE	1	JLC20C	3/20/2018	7:52:00 19:52	MD
CCV	1	JLC20C	3/20/2018	7:56:00 19:56	MD
CCB	1	JLC20C	3/20/2018	8:00:00 20:00	MD
SL2079-013	5	JLC20C	3/20/2018	8:04:00 20:04	MD
SL2133-001	5	JLC20C	3/20/2018	8:09:00 20:09	MD
SL2133-002	5	JLC20C	3/20/2018	8:13:00 20:13	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2133-003	5	JLC20C	3/20/2018	8:17:00 20:17	MD
SL2133-004	5	JLC20C	3/20/2018	8:21:00 20:21	MD
SL2133-005	5	JLC20C	3/20/2018	8:25:00 20:25	MD
SL2133-006	5	JLC20C	3/20/2018	8:30:00 20:30	MD
SL2133-007	5	JLC20C	3/20/2018	8:34:00 20:34	MD
PBWLC16IMW1	5	JLC20C	3/20/2018	8:38:00 20:38	MD
LCSWLC16IMW1	5	JLC20C	3/20/2018	8:42:00 20:42	MD
CCV	1	JLC20C	3/20/2018	8:47:00 20:47	MD
CCB	1	JLC20C	3/20/2018	8:51:00 20:51	MD
PBSLC20IMS1	5	JLC20C	3/20/2018	8:55:00 20:55	MD
LCSOLC20IMS1	5	JLC20C	3/20/2018	8:59:00 20:59	MD
SL2133-008	5	JLC20C	3/20/2018	9:03:00 21:03	MD
SL2133-009	5	JLC20C	3/20/2018	9:07:00 21:07	MD
SL2133-010	5	JLC20C	3/20/2018	9:12:00 21:12	MD
SL2133-011	5	JLC20C	3/20/2018	9:16:00 21:16	MD
SL2133-012	5	JLC20C	3/20/2018	9:20:00 21:20	MD
SL2133-013	5	JLC20C	3/20/2018	9:24:00 21:24	MD
SL2133-014	5	JLC20C	3/20/2018	9:29:00 21:29	MD
RINSE	1	JLC20C	3/20/2018	9:33:00 21:33	MD
CCV	1	JLC20C	3/20/2018	9:37:00 21:37	MD
CCB	1	JLC20C	3/20/2018	9:41:00 21:41	MD
SL2133-015	5	JLC20C	3/20/2018	9:46:00 21:46	MD
SL2133-016	5	JLC20C	3/20/2018	9:50:00 21:50	MD
SL2133-017	5	JLC20C	3/20/2018	9:54:00 21:54	MD
SL2133-018	5	JLC20C	3/20/2018	9:58:00 21:58	MD
SL2133-019	5	JLC20C	3/20/2018	10:03:0 22:03	MD
SL2133-019L	25	JLC20C	3/20/2018	10:07:0 22:07	MD
SL2133-019A	5	JLC20C	3/20/2018	10:11:0 22:11	MD
SL2133-019S	5	JLC20C	3/20/2018	10:15:0 22:15	MD
SL2133-019P	5	JLC20C	3/20/2018	10:20:0 22:20	MD
RINSE	1	JLC20C	3/20/2018	10:24:0 22:24	MD
CCV	1	JLC20C	3/20/2018	10:28:0 22:28	MD
CCB	1	JLC20C	3/20/2018	10:32:0 22:32	MD
SL2133-021	5	JLC20C	3/20/2018	10:37:0 22:37	MD
SL2133-022	5	JLC20C	3/20/2018	10:41:0 22:41	MD
RINSE	1	JLC20C	3/20/2018	10:45:0 22:45	MD
RINSE	1	JLC20C	3/20/2018	10:49:0 22:49	MD
PBWLC19IMW2	5	JLC20C	3/20/2018	10:53:0 22:53	MD
LCSWLC19IMW2	5	JLC20C	3/20/2018	10:58:0 22:58	MD
SL2133-020	5	JLC20C	3/20/2018	11:02:0 23:02	MD
SL2138-011	5	JLC20C	3/20/2018	11:06:0 23:06	MD
SL2138-012	5	JLC20C	3/20/2018	11:10:0 23:10	MD
RINSE	1	JLC20C	3/20/2018	11:14:0 23:14	MD
CCV	1	JLC20C	3/20/2018	11:18:0 23:18	MD
CCB	1	JLC20C	3/20/2018	11:23:0 23:23	MD
SL2138-001	5	JLC20C	3/20/2018	11:27:0 23:27	MD
SL2138-002	5	JLC20C	3/20/2018	11:31:0 23:31	MD

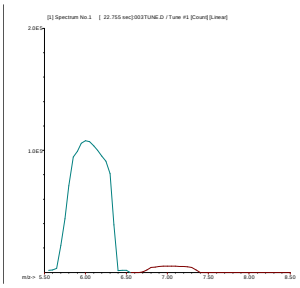
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2138-003	5	JLC20C	3/20/2018 11:35:0	23:35	MD
RINSE	1	JLC20C	3/20/2018 11:39:0	23:39	MD
RINSE	1	JLC20C	3/20/2018 11:43:0	23:43	MD
SL2138-004	5	JLC20C	3/20/2018 11:48:0	23:48	MD
SL2138-005	5	JLC20C	3/20/2018 11:52:0	23:52	MD
SL2138-006	5	JLC20C	3/20/2018 11:56:0	23:56	MD
RINSE	1	JLC20C	3/21/2018	0:00	MD
RINSE	1	JLC20C	3/21/2018 12:04:0	0:04	MD
CCV	1	JLC20C	3/21/2018 12:08:0	0:08	MD
CCB	1	JLC20C	3/21/2018 12:12:0	0:12	MD
SL2138-007	5	JLC20C	3/21/2018 12:17:0	0:17	MD
SL2138-008	5	JLC20C	3/21/2018 12:21:0	0:21	MD
SL2138-009	5	JLC20C	3/21/2018 12:25:0	0:25	MD
RINSE	1	JLC20C	3/21/2018 12:29:0	0:29	MD
RINSE	1	JLC20C	3/21/2018 12:33:0	0:33	MD
SL2138-010	5	JLC20C	3/21/2018 12:38:0	0:38	MD
RINSE	1	JLC20C	3/21/2018 12:42:0	0:42	MD
RINSE	1	JLC20C	3/21/2018 12:46:0	0:46	MD
RINSE	1	JLC20C	3/21/2018 12:50:0	0:50	MD
RINSE	1	JLC20C	3/21/2018 12:54:0	0:54	MD
CCV	1	JLC20C	3/21/2018 12:58:0	0:58	MD
CCB	1	JLC20C	3/21/2018 1:03:00	1:03	MD
PQL	1	JLC20C	3/21/2018 1:07:00	1:07	MD
CCV	1	JLC20C	3/21/2018 1:11:00	1:11	MD
CCB	1	JLC20C	3/21/2018 1:15:00	1:15	MD

6020 QC Tune Report

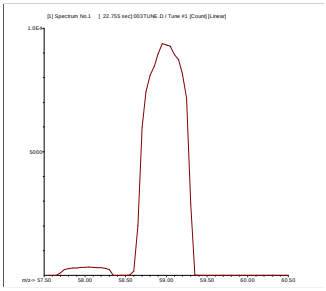
Data File: C:\ICPCHEM\1\DATA\JLC20A.B\003TUNE.D
Date Acquired: Mar 20 2018 02:01 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

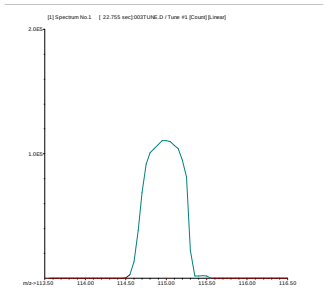
Element	Actual	Required	Flag
7 Li	0.64	5.00	
59 Co	1.48	5.00	
115 In	1.07	5.00	
205 Tl	1.00	5.00	



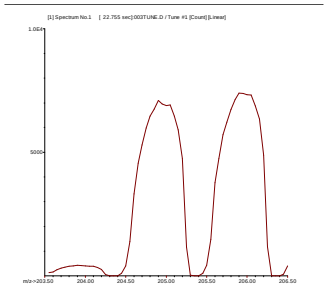
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



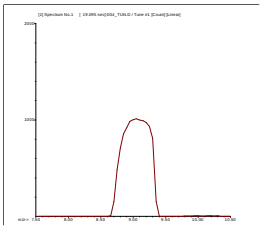
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

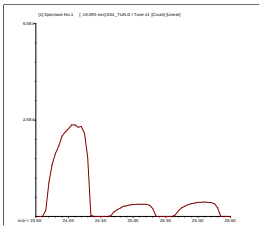
Data File: C:\ICPCHEM\1\DATA\JLC20A.B\004_TUN.D
Date Acquired: Mar 20 2018 02:04 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

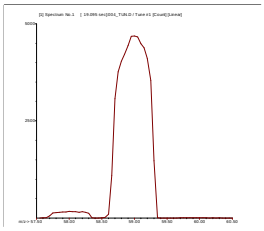
Element	Actual	Required	Flag
9 Be	1.83	5.00	
24 Mg	1.12	5.00	
59 Co	2.21	5.00	
115 In	1.49	5.00	
208 Pb	0.97	5.00	



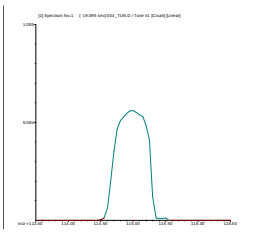
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



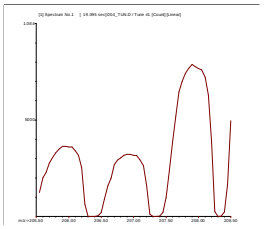
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.I
Date Acquired: Mar 20 2018 05:25 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 20 2018 05:27 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3440039.00	A	32650.00	0.95
9	Be	18.89	P	5.09	26.96
11	B	360.02	P	57.83	16.06
23	Na	45458.00	P	886.00	1.95
25	Mg	137.79	P	31.51	22.87
27	Al	2067.46	P	100.10	4.84
28	Si	6967709.00	A	249300.00	3.58
29	Si	527997.50	P	16940.00	3.21
39	K	1168954.00	A	4387.00	0.38
43	Ca	262.99	P	12.83	4.88
44	Ca	12502.06	P	889.70	7.12
45	Sc	3153680.00	A	29810.00	0.95
51	V	2088.25	P	710.50	34.02
52	Cr	7455.41	P	71.79	0.96
53	Cr	6241.47	P	219.70	3.52
55	Mn	1542.36	P	68.02	4.41
56	Fe	1711136.00	A	9485.00	0.55
57	Fe	14044.61	P	416.50	2.97
59	Co	77.78	P	26.94	34.63
60	Ni	66.57	P	18.36	27.58
63	Cu	241.12	P	26.94	11.17
65	Cu	101.11	P	5.09	5.04
66	Zn	902.28	P	22.20	2.46
68	Zn	3564.99	P	167.70	4.70
72	Ge		P		
75	As	-12.18	P	21.39	175.60
82	Se	-22.63	P	28.83	127.43
88	Sr	125.94	P	16.97	13.48
89	Y	4049389.00	A	24800.00	0.61
98	Mo	40.74	P	10.81	26.54
107	Ag	27.78	P	15.03	54.11
109	Ag	21.11	P	13.88	65.75
111	Cd	1056.06	P	7.48	0.71
114	Cd	-2.71	P	9.68	357.00
115	In	3549920.00	A	24980.00	0.70
118	Sn	435.58	P	8.39	1.93
120	Sn	561.14	P	73.14	13.03
121	Sb	55.56	P	9.62	17.32
123	Sb	47.78	P	13.88	29.05
135	Ba	13.33	P	0.00	0.00
137	Ba	27.78	P	1.93	6.93
159	Tb	4277856.00	A	42970.00	1.00
182	W	82.23	P	27.76	33.76
203	Tl	36.67	P	3.33	9.09
205	Tl	40.00	P	11.55	28.87
208	Pb	275.57	P	23.65	8.58
209	Bi	2443113.00	A	27370.00	1.12
232	Th	25.56	P	11.71	45.82
238	U	7.78	P	8.39	107.85

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\016CALI.D\016CALI.D#
Date Acquired: Mar 20 2018 05:29 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 20 2018 05:27 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3651432.00	A	81820.00	2.24
9 Be	128394.70	P	866.40	0.67
11 B	77476.97	P	2700.00	3.48
23 Na	85578048.00	A	820500.00	0.96
25 Mg	7408177.00	A	76280.00	1.03
27 Al	7377639.00	A	46260.00	0.63
28 Si	10945840.00	A	90020.00	0.82
29 Si	875658.00	A	5930.00	0.68
39 K	95396176.00	A	1675000.00	1.76
43 Ca	173911.00	P	4543.00	2.61
44 Ca	2777314.00	A	49090.00	1.77
45 Sc	3350597.00	A	55350.00	1.65
51 V	607008.63	P	4260.00	0.70
52 Cr	527407.63	P	7068.00	1.34
53 Cr	68067.10	P	983.60	1.45
55 Mn	658685.69	P	4575.00	0.69
56 Fe	107301400.00	A	185000.00	0.17
57 Fe	2604992.00	A	14500.00	0.56
59 Co	569045.63	P	6012.00	1.06
60 Ni	125009.50	P	1939.00	1.55
63 Cu	291833.69	P	3151.00	1.08
65 Cu	136754.70	P	1040.00	0.76
66 Zn	67977.86	P	1083.00	1.59
68 Zn	50948.79	P	592.60	1.16
72 Ge		P		
75 As	64992.34	P	1064.00	1.64
82 Se	4591.80	P	20.83	0.45
88 Sr	667868.88	P	7136.00	1.07
89 Y	4352465.00	A	43880.00	1.01
98 Mo	210651.91	P	1510.00	0.72
107 Ag	323493.91	P	4067.00	1.26
109 Ag	307495.81	P	5220.00	1.70
111 Cd	62591.72	P	937.00	1.50
114 Cd	134615.59	P	1813.00	1.35
115 In	3843002.00	A	24180.00	0.63
118 Sn	183977.91	P	1166.00	0.63
120 Sn	254328.41	P	4778.00	1.88
121 Sb	228947.59	P	1382.00	0.60
123 Sb	171637.00	P	2434.00	1.42
135 Ba	51542.68	P	764.20	1.48
137 Ba	89473.65	P	994.00	1.11
159 Tb	4621247.00	A	56150.00	1.22
182 W	203653.91	P	2989.00	1.47
203 Tl	178254.70	P	1219.00	0.68
205 Tl	423863.00	P	6014.00	1.42
208 Pb	587184.13	P	6019.00	1.03
209 Bi	2570094.00	A	37590.00	1.46
232 Th	672103.69	P	10860.00	1.62
238 U	646366.69	P	3445.00	0.53

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3651432.00	2.24	3440039.00	106.1	79.5 - 120.4	
45 Sc	3350597.30	1.65	3153680.00	106.2	79.5 - 120.4	
89 Y	4352465.50	1.01	4049389.00	107.5	79.5 - 120.4	
159 Tb	4621247.50	1.22	4277856.00	108.0	79.5 - 120.4	
209 Bi	2570094.00	1.46	2443113.00	105.2	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000179

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\017_ICV.D\017_ICV.D#
Date Acquired: Mar 20 2018 05:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.93	ppb	0.58	20	99.65	
11 B	20.09	ppb	3.37	20	100.45	
23 Na	3,961.	ppb	0.33	4,000	99.025	
25 Mg	3,976.	ppb	1.40	4,000	99.4	
27 Al	390.2	ppb	0.45	400	97.55	
28 Si	324.3	ppb	13.24	400	81.075	
29 Si	400.	ppb	54.58	400	100	
39 K	3,895.	ppb	0.85	4,000	97.375	
43 Ca	4,008.	ppb	2.34	4,000	100.2	
44 Ca	4,082.	ppb	0.19	4,000	102.05	
51 V	20.11	ppb	1.80	20	100.55	
52 Cr	19.88	ppb	0.94	20	99.4	
53 Cr	18.81	ppb	0.33	20	94.05	
55 Mn	19.96	ppb	0.89	20	99.8	
56 Fe	3,991.	ppb	0.77	4,000	99.775	
57 Fe	4,081.	ppb	1.18	4,000	102.025	
59 Co	20.16	ppb	1.12	20	100.8	
60 Ni	20.31	ppb	0.76	20	101.55	
63 Cu	20.11	ppb	0.26	20	100.55	
65 Cu	20.13	ppb	0.21	20	100.65	
66 Zn	20.82	ppb	2.78	20	104.1	
68 Zn	20.56	ppb	0.65	20	102.8	
75 As	20.09	ppb	1.61	20	100.45	
82 Se	20.25	ppb	3.20	20	101.25	
88 Sr	19.62	ppb	1.42	20	98.1	
98 Mo	39.3	ppb	1.49	40	98.25	
107 Ag	20.1	ppb	2.18	20	100.5	
109 Ag	19.97	ppb	1.19	20	99.85	
111 Cd	20.47	ppb	1.90	20	102.35	
114 Cd	20.45	ppb	1.34	20	102.25	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.81	ppb	2.12	20	99.05	
120 Sn	19.81	ppb	1.05	20	99.05	
121 Sb	19.6	ppb	1.32	20	98	
123 Sb	19.96	ppb	0.87	20	99.8	
135 Ba	20.22	ppb	0.57	20	101.1	
137 Ba	20.17	ppb	0.60	20	100.85	
182 W	19.91	ppb	2.04	20	99.55	
203 Tl	19.99	ppb	1.82	20	99.95	
205 Tl	20.34	ppb	1.39	20	101.7	
208 Pb	19.8	ppb	1.99	20	99	
232 Th	19.49	ppb	1.82	20	97.45	
238 U	19.68	ppb	1.67	20	98.4	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3599457.80	0.11	3440039.00	104.6	80 - 120.4	
45 Sc	3325251.50	0.44	3153680.00	105.4	80 - 120.4	
89 Y	4263809.50	0.94	4049389.00	105.3	80 - 120.4	
159 Tb	4533759.00	0.98	4277856.00	106.0	80 - 120.4	
209 Bi	2575436.30	0.92	2443113.00	105.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000180

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\018_ICB.D\018_ICB.D#
Date Acquired: Mar 20 2018 05:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0009	ppb	224.89	1.00	
11 B	0.7327	ppb	15.38	1.00	
23 Na	0.1187	ppb	132.43	1.00	
25 Mg	0.0231	ppb	154.42	1.00	
27 Al	0.0833	ppb	56.43	1.00	
28 Si	84.84	ppb	135.08	1.00	
29 Si	21.06	ppb	99.43	1.00	
39 K	0.6075	ppb	308.48	1.00	
43 Ca	-2.064	ppb	126.55	1.00	
44 Ca	-1.268	ppb	118.38	1.00	
51 V	-0.014	ppb	413.17	1.00	
52 Cr	-0.0273	ppb	55.18	1.00	
53 Cr	-0.6058	ppb	48.00	1.00	
55 Mn	-0.0115	ppb	12.97	1.00	
56 Fe	-3.744	ppb	53.95	1.00	
57 Fe	1.432	ppb	19.11	1.00	
59 Co	0.0063	ppb	52.13	1.00	
60 Ni	0.0014	ppb	209.02	1.00	
63 Cu	0.0004	ppb	1700.80	1.00	
65 Cu	0.0027	ppb	309.73	1.00	
66 Zn	-0.0251	ppb	207.38	1.00	
68 Zn	0.2806	ppb	22.39	1.00	
75 As	0.0533	ppb	343.40	1.00	
82 Se	0.2307	ppb	22.23	1.00	
88 Sr	0.001	ppb	501.18	1.00	
98 Mo	0.0244	ppb	8.19	1.00	
107 Ag	0.0003	ppb	240.21	1.00	
109 Ag	0.0001	ppb	3364.60	1.00	
111 Cd	-0.0394	ppb	141.29	1.00	
114 Cd	-0.0001	ppb	4544.60	1.00	
115 In	--------	---	--------	---	
118 Sn	-0.003	ppb	461.54	1.00	
120 Sn	0.0052	ppb	125.55	1.00	
121 Sb	0.0011	ppb	440.36	1.00	
123 Sb	0.0113	ppb	87.27	1.00	
135 Ba	0.0098	ppb	107.39	1.00	
137 Ba	0.0057	ppb	92.17	1.00	
182 W	0.0202	ppb	19.02	1.00	
203 Tl	0.0012	ppb	224.57	1.00	
205 Tl	0.0032	ppb	32.94	1.00	
208 Pb	0.0018	ppb	76.11	1.00	
232 Th	0.0077	ppb	39.40	1.00	
238 U	0.0033	ppb	39.87	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3331690.80	0.98	3440039.00	96.9	79.5 - 120	
45 Sc	3103388.50	1.33	3153680.00	98.4	79.5 - 120	
89 Y	3993805.80	0.85	4049389.00	98.6	79.5 - 120	
159 Tb	4203028.00	0.81	4277856.00	98.3	79.5 - 120	
209 Bi	2396445.50	1.09	2443113.00	98.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000181

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\019_PQL.D\019_PQL.D#
Date Acquired: Mar 20 2018 05:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2032	ppb	0.90	0.20	101.6	
11 B	4.572	ppb	5.04	4.00	114.3	
23 Na	207.4	ppb	1.67	200.00	103.7	
25 Mg	20.47	ppb	2.61	20.00	102.35	
27 Al	20.06	ppb	0.72	20.00	100.3	
28 Si	114.2	ppb	89.58	100.00	114.2	
29 Si	70.97	ppb	75.64	100.00	70.97	Fail-DoD
39 K	198.1	ppb	2.15	200.00	99.05	
43 Ca	18.82	ppb	17.58	20.00	94.1	
44 Ca	20.39	ppb	4.67	20.00	101.95	
51 V	1.008	ppb	8.49	1.00	100.8	
52 Cr	0.981	ppb	0.99	1.00	98.1	
53 Cr	0.6507	ppb	50.02	---	#VALUE!	
55 Mn	0.4045	ppb	0.58	0.40	101.125	
56 Fe	19.62	ppb	5.17	20.00	98.1	
57 Fe	21.35	ppb	5.50	20.00	106.75	
59 Co	0.2144	ppb	8.53	0.20	107.2	
60 Ni	0.4239	ppb	5.04	0.40	105.975	
63 Cu	0.6477	ppb	2.78	0.60	107.95	
65 Cu	0.7066	ppb	2.05	0.60	117.767	
66 Zn	2.427	ppb	6.46	2.00	121.35	Fail-DoD
68 Zn	2.413	ppb	4.93	2.00	120.65	
75 As	1.017	ppb	18.05	1.00	101.7	
82 Se	1.127	ppb	37.05	1.00	112.7	
88 Sr	1.033	ppb	2.20	1.00	103.3	
98 Mo	1.05	ppb	4.20	1.00	105	
107 Ag	0.2185	ppb	4.81	0.20	109.25	
109 Ag	0.2179	ppb	2.60	0.20	108.95	
111 Cd	0.1959	ppb	10.36	0.20	97.95	
114 Cd	0.1858	ppb	7.04	0.20	92.9	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.033	ppb	6.23	1.00	103.3	
120 Sn	1.012	ppb	2.01	1.00	101.2	
121 Sb	0.1735	ppb	5.17	0.20	86.75	
123 Sb	0.1994	ppb	12.04	0.20	99.7	
135 Ba	0.405	ppb	6.05	0.40	101.25	
137 Ba	0.4028	ppb	4.93	0.40	100.7	
182 W	1.002	ppb	2.06	1.00	100.2	
203 Tl	0.1854	ppb	8.41	0.20	92.7	
205 Tl	0.1879	ppb	5.86	0.20	93.95	
208 Pb	0.1874	ppb	2.53	0.20	93.7	
232 Th	0.1926	ppb	0.95	0.20	96.3	
238 U	0.1982	ppb	3.90	0.20	99.1	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3371708.50	1.29	3440039.00	98.0	80 - 120.4	
45 Sc	3113596.30	1.47	3153680.00	98.7	80 - 120.4	
89 Y	3988083.30	1.03	4049389.00	98.5	80 - 120.4	
159 Tb	4315815.00	0.68	4277856.00	100.9	80 - 120.4	
209 Bi	2462107.80	0.44	2443113.00	100.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000182

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\020SMPL.D\020SMPL.D#
Date Acquired: Mar 20 2018 05:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	213.84	100.	
11 B	0.2901	0.2901	ppb	13.59	1000.	
23 Na	-0.0486	-0.0486	ppb	296.07	200000.	
25 Mg	0.0632	0.0632	ppb	69.63	200000.	
27 Al	0.0132	0.0132	ppb	382.60	200000.	
28 Si	50.18	50.18	ppb	78.00	#VALUE!	
29 Si	28.46	28.46	ppb	41.74	10000.	
39 K	1.275	1.275	ppb	75.37	200000.	
43 Ca	-4.972	-4.972	ppb	50.66	#VALUE!	
44 Ca	0.4231	0.4231	ppb	612.15	200000.	
51 V	-0.0133	-0.0133	ppb	116.95	1000.	
52 Cr	-0.0291	-0.0291	ppb	94.30	2000.	
53 Cr	-0.5063	-0.5063	ppb	12.15	#VALUE!	
55 Mn	-0.0051	-0.0051	ppb	81.62	2000.	
56 Fe	-1.993	-1.993	ppb	205.47	#VALUE!	
57 Fe	1.097	1.097	ppb	139.74	100000.	
59 Co	0.0065	0.0065	ppb	108.49	1000.	
60 Ni	-0.003	-0.003	ppb	290.10	1000.	
63 Cu	0.0008	0.0008	ppb	286.55	#VALUE!	
65 Cu	-0.0008	-0.0008	ppb	873.01	2000.	
66 Zn	0.0273	0.0273	ppb	241.00	2000.	
68 Zn	0.0794	0.0794	ppb	138.52	#VALUE!	
75 As	-0.1005	-0.1005	ppb	127.96	1000.	
82 Se	0.1405	0.1405	ppb	293.95	1000.	
88 Sr	0.0023	0.0023	ppb	61.87	2000.	
98 Mo	0.003	0.003	ppb	126.68	1000.	
107 Ag	0.0006	0.0006	ppb	310.29	100.	
109 Ag	-0.0003	-0.0003	ppb	197.86	#VALUE!	
111 Cd	-0.0305	-0.0305	ppb	97.54	#VALUE!	
114 Cd	-0.0014	-0.0014	ppb	192.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0008	-0.0008	ppb	1008.70	1000.	
120 Sn	0.009	0.009	ppb	55.05	#VALUE!	
121 Sb	0.0012	0.0012	ppb	394.51	#VALUE!	
123 Sb	0.0026	0.0026	ppb	117.76	1000.	
135 Ba	0.0037	0.0037	ppb	418.71	2000.	
137 Ba	-0.0039	-0.0039	ppb	125.23	#VALUE!	
182 W	0.0033	0.0033	ppb	23.48	1000.	
203 Tl	-0.0015	-0.0015	ppb	169.06	1000.	
205 Tl	0.0002	0.0002	ppb	283.76	#VALUE!	
208 Pb	0.0027	0.0027	ppb	102.83	2000.	
232 Th	0.0034	0.0034	ppb	79.19	1000.	
238 U	0.001	0.001	ppb	0.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3324830.30	1.13	3440039.00	96.7	69.5 - 120	
45 Sc	3085808.80	0.20	3153680.00	97.8	69.5 - 120	
89 Y	3993560.80	0.10	4049389.00	98.6	69.5 - 120	
159 Tb	4230002.00	1.00	4277856.00	98.9	69.5 - 120	
209 Bi	2405876.30	0.47	2443113.00	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000183

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\021ICSA.D\021ICSA.D#
Date Acquired: Mar 20 2018 05:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	79.59		
11 B	0.6169	ppb	4.02		
23 Na	97,650.	ppb	1.10		
25 Mg	96,440.	ppb	1.21		
27 Al	95,700.	ppb	0.73		
28 Si	-80.62	ppb	29.48		
29 Si	-147.4	ppb	8.56		
39 K	98,660.	ppb	0.98		
43 Ca	101,900.	ppb	0.77		
44 Ca	98,950.	ppb	0.85		
51 V	0.2002	ppb	4.60		
52 Cr	0.8755	ppb	1.46		
53 Cr	-0.1417	ppb	90.61		
55 Mn	0.3337	ppb	2.86		
56 Fe	98,130.	ppb	2.74		
57 Fe	95,490.	ppb	2.65		
59 Co	0.0972	ppb	14.61		
60 Ni	-0.0862	ppb	31.76		
63 Cu	3.042	ppb	1.11		
65 Cu	0.967	ppb	3.53		
66 Zn	2.283	ppb	3.61		
68 Zn	0.2122	ppb	57.87		
75 As	0.3416	ppb	20.35		
82 Se	0.2011	ppb	41.40		
88 Sr	0.9121	ppb	4.08		
98 Mo	1,966.	ppb	1.42		
107 Ag	0.0252	ppb	10.24		
109 Ag	0.0281	ppb	2.31		
111 Cd	0.0907	ppb	19.45		
114 Cd	0.0189	ppb	88.64		
115 In	--------	---	--------		
118 Sn	0.0387	ppb	39.82		
120 Sn	0.0394	ppb	6.49		
121 Sb	0.0672	ppb	21.61		
123 Sb	0.066	ppb	19.62		
135 Ba	0.0861	ppb	7.77		
137 Ba	0.0694	ppb	15.52		
182 W	0.2417	ppb	6.29		
203 Tl	-0.0028	ppb	138.59		
205 Tl	0.0044	ppb	35.76		
208 Pb	0.0871	ppb	4.13		
232 Th	0.0112	ppb	24.54		
238 U	0.0019	ppb	49.23		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3363915.00	0.92	3440039.00	97.8	69.5 - 120.4	
45 Sc	3281377.80	0.91	3153680.00	104.0	69.5 - 120.4	
89 Y	4210051.00	2.07	4049389.00	104.0	69.5 - 120.4	
159 Tb	4428196.50	0.81	4277856.00	103.5	69.5 - 120.4	
209 Bi	2280791.00	1.67	2443113.00	93.4	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000184

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\022ICSB.D\022ICSB.D#
Date Acquired: Mar 20 2018 05:53 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.99	ppb	1.50	20.00	79.5 - 120	
11 B	20.19	ppb	0.67	20.00	79.5 - 120	
23 Na	98,390.	ppb	1.86	100000.00	79.5 - 120	
25 Mg	97,350.	ppb	1.77	100000.00	79.5 - 120	
27 Al	96,200.	ppb	1.60	100000.00	79.5 - 120	
28 Si	429.9	ppb	6.42	---	##### - #####	
29 Si	270.6	ppb	72.03	---	##### - #####	
39 K	99,710.	ppb	1.82	100000.00	79.5 - 120	
43 Ca	102,400.	ppb	2.26	100000.00	79.5 - 120	
44 Ca	100,000.	ppb	2.11	100000.00	79.5 - 120	
51 V	21.28	ppb	2.24	20.00	79.5 - 120	
52 Cr	21.5	ppb	2.09	20.00	79.5 - 120	
53 Cr	21.11	ppb	2.09	---	##### - #####	
55 Mn	20.7	ppb	2.35	20.00	79.5 - 120	
56 Fe	99,300.	ppb	2.38	100000.00	79.5 - 120	
57 Fe	97,530.	ppb	1.75	100000.00	79.5 - 120	
59 Co	20.49	ppb	2.06	20.00	79.5 - 120	
60 Ni	19.86	ppb	3.61	20.00	79.5 - 120	
63 Cu	22.78	ppb	2.50	20.00	79.5 - 120	
65 Cu	20.6	ppb	2.91	20.00	79.5 - 120	
66 Zn	21.47	ppb	2.19	20.00	79.5 - 120	
68 Zn	19.63	ppb	3.39	20.00	79.5 - 120	
75 As	21.27	ppb	2.21	20.00	79.5 - 120	
82 Se	20.57	ppb	3.40	20.00	79.5 - 120	
88 Sr	21.6	ppb	0.85	20.00	79.5 - 120	
98 Mo	1,998.	ppb	1.36	2000.00	79.5 - 120	
107 Ag	19.27	ppb	1.50	20.00	79.5 - 120	
109 Ag	19.29	ppb	0.96	20.00	79.5 - 120	
111 Cd	19.67	ppb	2.22	20.00	79.5 - 120	
114 Cd	19.62	ppb	1.98	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.05	ppb	0.51	20.00	79.5 - 120	
120 Sn	20.18	ppb	2.09	20.00	79.5 - 120	
121 Sb	20.68	ppb	1.48	20.00	79.5 - 120	
123 Sb	20.65	ppb	1.58	20.00	79.5 - 120	
135 Ba	21.34	ppb	2.56	20.00	79.5 - 120	
137 Ba	20.95	ppb	0.26	20.00	79.5 - 120	
182 W	20.6	ppb	0.79	20.00	79.5 - 120	
203 Tl	21.78	ppb	1.69	20.00	79.5 - 120	
205 Tl	21.78	ppb	0.63	20.00	79.5 - 120	
208 Pb	21.68	ppb	0.96	20.00	79.5 - 120	
232 Th	22.8	ppb	1.63	20.00	79.5 - 120	
238 U	22.58	ppb	1.09	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3350610.50	1.08	3440039.00	97.4	69.5 - 120	
45 Sc	3305461.50	0.80	3153680.00	104.8	69.5 - 120	
89 Y	4241910.00	0.72	4049389.00	104.8	69.5 - 120	
159 Tb	4500148.00	0.35	4277856.00	105.2	69.5 - 120	
209 Bi	2308974.80	0.65	2443113.00	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000185

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\023SMPL.D\023SMPL.D#
Date Acquired: Mar 20 2018 05:57 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	410.88	100.	
11 B	0.3959	0.3959	ppb	16.19	1000.	
23 Na	5.787	5.787	ppb	85.59	200000.	
25 Mg	3.966	3.966	ppb	101.99	200000.	
27 Al	3.791	3.791	ppb	99.34	200000.	
28 Si	19.09	19.09	ppb	270.67	#VALUE!	
29 Si	-78.6	-78.6	ppb	4.56	10000.	
39 K	0.038	0.038	ppb	10021.00	200000.	
43 Ca	3.778	3.778	ppb	70.22	#VALUE!	
44 Ca	4.237	4.237	ppb	69.46	200000.	
51 V	0.0023	0.0023	ppb	1141.50	1000.	
52 Cr	-0.0199	-0.0199	ppb	6.77	2000.	
53 Cr	-0.4427	-0.4427	ppb	25.16	#VALUE!	
55 Mn	-0.0119	-0.0119	ppb	19.03	2000.	
56 Fe	4.518	4.518	ppb	95.31	#VALUE!	
57 Fe	2.322	2.322	ppb	100.52	100000.	
59 Co	0.003	0.003	ppb	74.82	1000.	
60 Ni	-0.0057	-0.0057	ppb	78.81	1000.	
63 Cu	0.005	0.005	ppb	144.20	#VALUE!	
65 Cu	0.0069	0.0069	ppb	185.20	2000.	
66 Zn	-0.0135	-0.0135	ppb	539.20	2000.	
68 Zn	0.019	0.019	ppb	708.64	#VALUE!	
75 As	0.1056	0.1056	ppb	118.66	1000.	
82 Se	0.4062	0.4062	ppb	86.68	1000.	
88 Sr	0.0039	0.0039	ppb	131.96	2000.	
98 Mo	0.3902	0.3902	ppb	27.55	1000.	
107 Ag	0.0027	0.0027	ppb	150.95	100.	
109 Ag	0.0016	0.0016	ppb	42.99	#VALUE!	
111 Cd	-0.0705	-0.0705	ppb	4.64	#VALUE!	
114 Cd	-0.0014	-0.0014	ppb	298.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0133	-0.0133	ppb	49.96	1000.	
120 Sn	0.0088	0.0088	ppb	123.66	#VALUE!	
121 Sb	0.0109	0.0109	ppb	47.92	#VALUE!	
123 Sb	0.008	0.008	ppb	83.40	1000.	
135 Ba	-0.0008	-0.0008	ppb	714.80	2000.	
137 Ba	-0.0002	-0.0002	ppb	3139.60	#VALUE!	
182 W	-0.0039	-0.0039	ppb	58.51	1000.	
203 Tl	0.0008	0.0008	ppb	280.73	1000.	
205 Tl	0.0059	0.0059	ppb	48.95	#VALUE!	
208 Pb	0.0004	0.0004	ppb	1026.90	2000.	
232 Th	0.004	0.004	ppb	24.99	1000.	
238 U	0.0027	0.0027	ppb	40.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3056349.00	2.19	3440039.00	88.8	69.5 - 120	
45 Sc	2947844.00	0.95	3153680.00	93.5	69.5 - 120	
89 Y	3860015.00	1.16	4049389.00	95.3	69.5 - 120	
159 Tb	4151257.00	0.67	4277856.00	97.0	69.5 - 120	
209 Bi	2353446.80	0.21	2443113.00	96.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000186

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\024SMPL.D\024SMPL.D#
Date Acquired: Mar 20 2018 06:01 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	103.9	103.9	ppb	2.40	100.	>LDR
11 B	565.6	565.6	ppb	5.07	1000.	
23 Na	3.054	3.054	ppb	3.64	200000.	
25 Mg	0.879	0.879	ppb	6.15	200000.	
27 Al	0.6976	0.6976	ppb	18.42	200000.	
28 Si	-51.73	-51.73	ppb	137.56	#VALUE!	
29 Si	-134.7	-134.7	ppb	27.86	10000.	LOW
39 K	-7.505	-7.505	ppb	45.89	200000.	
43 Ca	1,518.	1,518.	ppb	3.92	#VALUE!	
44 Ca	143.2	143.2	ppb	5.71	200000.	
51 V	1,017.	1,017.	ppb	2.82	1000.	>LDR
52 Cr	2,017.	2,017.	ppb	2.50	2000.	>LDR
53 Cr	2,056.	2,056.	ppb	3.09	#VALUE!	
55 Mn	2,019.	2,019.	ppb	2.62	2000.	>LDR
56 Fe	-8.99	-8.99	ppb	38.71	#VALUE!	
57 Fe	-8.846	-8.846	ppb	6.65	100000.	
59 Co	1,002.	1,002.	ppb	2.68	1000.	>LDR
60 Ni	1,016.	1,016.	ppb	1.37	1000.	>LDR
63 Cu	2,012.	2,012.	ppb	3.17	#VALUE!	
65 Cu	2,013.	2,013.	ppb	2.69	2000.	>LDR
66 Zn	2,041.	2,041.	ppb	2.33	2000.	>LDR
68 Zn	2,095.	2,095.	ppb	1.81	#VALUE!	
75 As	1,039.	1,039.	ppb	2.71	1000.	>LDR
82 Se	1,065.	1,065.	ppb	2.34	1000.	>LDR
88 Sr	2,019.	2,019.	ppb	2.93	2000.	>LDR
98 Mo	1,032.	1,032.	ppb	2.74	1000.	>LDR
107 Ag	107.7	107.7	ppb	2.37	100.	>LDR
109 Ag	107.5	107.5	ppb	1.51	#VALUE!	
111 Cd	1,073.	1,073.	ppb	3.48	#VALUE!	
114 Cd	1,052.	1,052.	ppb	3.17	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,024.	1,024.	ppb	1.88	1000.	>LDR
120 Sn	1,009.	1,009.	ppb	2.52	#VALUE!	
121 Sb	1,012.	1,012.	ppb	2.44	#VALUE!	
123 Sb	1,036.	1,036.	ppb	2.95	1000.	>LDR
135 Ba	2,130.	2,130.	ppb	1.54	2000.	>LDR
137 Ba	2,082.	2,082.	ppb	2.55	#VALUE!	
182 W	1,001.	1,001.	ppb	2.30	1000.	>LDR
203 Tl	1,006.	1,006.	ppb	1.68	1000.	>LDR
205 Tl	990.2	990.2	ppb	1.79	#VALUE!	
208 Pb	2,018.	2,018.	ppb	2.59	2000.	>LDR
232 Th	977.4	977.4	ppb	2.39	1000.	
238 U	993.2	993.2	ppb	2.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3141640.30	2.65	3440039.00	91.3	69.5 - 120	
45 Sc	3071577.80	2.24	3153680.00	97.4	69.5 - 120	
89 Y	4058057.80	2.12	4049389.00	100.2	69.5 - 120	
159 Tb	4389522.00	1.66	4277856.00	102.6	69.5 - 120	
209 Bi	2498276.50	1.57	2443113.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

20 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000187

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 20 2018 06:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0086	0.0086	ppb	42.93	100.	
11 B	7.05	7.05	ppb	16.94	1000.	
23 Na	196,000.	196,000.	ppb	0.07	200000.	
25 Mg	190,000.	190,000.	ppb	0.64	200000.	
27 Al	189,200.	189,200.	ppb	1.14	200000.	
28 Si	11,620.	11,620.	ppb	1.35	#VALUE!	
29 Si	7,305.	7,305.	ppb	1.54	10000.	
39 K	196,400.	196,400.	ppb	1.13	200000.	
43 Ca	197,600.	197,600.	ppb	0.20	#VALUE!	
44 Ca	196,300.	196,300.	ppb	0.40	200000.	
51 V	0.2146	0.2146	ppb	7.47	1000.	
52 Cr	3.191	3.191	ppb	2.13	2000.	
53 Cr	1.56	1.56	ppb	8.13	#VALUE!	
55 Mn	8.261	8.261	ppb	0.72	2000.	
56 Fe	101,300.	101,300.	ppb	0.69	#VALUE!	
57 Fe	99,200.	99,200.	ppb	0.74	100000.	
59 Co	2.924	2.924	ppb	1.27	1000.	
60 Ni	3.822	3.822	ppb	2.30	1000.	
63 Cu	8.256	8.256	ppb	0.94	#VALUE!	
65 Cu	2.955	2.955	ppb	0.89	2000.	
66 Zn	4.362	4.362	ppb	3.56	2000.	
68 Zn	2.381	2.381	ppb	13.11	#VALUE!	
75 As	0.4207	0.4207	ppb	29.74	1000.	
82 Se	0.2864	0.2864	ppb	14.72	1000.	
88 Sr	6.974	6.974	ppb	0.80	2000.	
98 Mo	0.5508	0.5508	ppb	14.27	1000.	
107 Ag	0.3697	0.3697	ppb	2.28	100.	
109 Ag	0.3631	0.3631	ppb	3.22	#VALUE!	
111 Cd	-0.0462	-0.0462	ppb	55.60	#VALUE!	
114 Cd	0.0043	0.0043	ppb	146.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2569	0.2569	ppb	9.23	1000.	
120 Sn	0.2473	0.2473	ppb	7.10	#VALUE!	
121 Sb	0.1218	0.1218	ppb	7.47	#VALUE!	
123 Sb	0.1244	0.1244	ppb	12.26	1000.	
135 Ba	0.3109	0.3109	ppb	7.20	2000.	
137 Ba	0.2819	0.2819	ppb	12.31	#VALUE!	
182 W	0.4095	0.4095	ppb	10.69	1000.	
203 Tl	0.052	0.052	ppb	8.79	1000.	
205 Tl	0.0616	0.0616	ppb	15.33	#VALUE!	
208 Pb	0.624	0.624	ppb	4.53	2000.	
232 Th	0.1836	0.1836	ppb	44.60	1000.	
238 U	0.1291	0.1291	ppb	23.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3268713.50	4.46	3440039.00	95.0	69.5 - 120	
45 Sc	3295930.30	1.79	3153680.00	104.5	69.5 - 120	
89 Y	3967992.80	0.96	4049389.00	98.0	69.5 - 120	
159 Tb	4141300.30	0.13	4277856.00	96.8	69.5 - 120	
209 Bi	2065935.60	0.54	2443113.00	84.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000188

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 20 2018 06:09 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	1991.80	100.	
11 B	3.176	3.176	ppb	9.54	1000.	
23 Na	8.825	8.825	ppb	45.48	200000.	
25 Mg	3.068	3.068	ppb	82.66	200000.	
27 Al	2.78	2.78	ppb	87.48	200000.	
28 Si	74.29	74.29	ppb	44.17	#VALUE!	
29 Si	-68.23	-68.23	ppb	15.07	10000.	
39 K	0.3968	0.3968	ppb	642.39	200000.	
43 Ca	0.3299	0.3299	ppb	1211.60	#VALUE!	
44 Ca	2.998	2.998	ppb	96.63	200000.	
51 V	0.0009	0.0009	ppb	5304.40	1000.	
52 Cr	0.0282	0.0282	ppb	77.51	2000.	
53 Cr	0.8151	0.8151	ppb	39.68	#VALUE!	
55 Mn	0.0008	0.0008	ppb	2020.60	2000.	
56 Fe	4.219	4.219	ppb	116.09	#VALUE!	
57 Fe	3.185	3.185	ppb	205.90	100000.	
59 Co	0.0057	0.0057	ppb	59.57	1000.	
60 Ni	0.014	0.014	ppb	64.89	1000.	
63 Cu	0.021	0.021	ppb	76.12	#VALUE!	
65 Cu	0.0201	0.0201	ppb	25.82	2000.	
66 Zn	-0.0387	-0.0387	ppb	145.73	2000.	
68 Zn	0.0682	0.0682	ppb	291.60	#VALUE!	
75 As	-0.1838	-0.1838	ppb	62.19	1000.	
82 Se	-0.0277	-0.0277	ppb	407.94	1000.	
88 Sr	0.0165	0.0165	ppb	69.15	2000.	
98 Mo	0.0904	0.0904	ppb	39.85	1000.	
107 Ag	0.0036	0.0036	ppb	87.63	100.	
109 Ag	0.0011	0.0011	ppb	230.53	#VALUE!	
111 Cd	-0.0712	-0.0712	ppb	47.48	#VALUE!	
114 Cd	0.0094	0.0094	ppb	104.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0493	0.0493	ppb	40.29	1000.	
120 Sn	0.0563	0.0563	ppb	5.66	#VALUE!	
121 Sb	0.0209	0.0209	ppb	38.68	#VALUE!	
123 Sb	0.0159	0.0159	ppb	9.84	1000.	
135 Ba	0.023	0.023	ppb	74.87	2000.	
137 Ba	0.0133	0.0133	ppb	124.29	#VALUE!	
182 W	0.0754	0.0754	ppb	17.66	1000.	
203 Tl	0.0041	0.0041	ppb	269.05	1000.	
205 Tl	0.0132	0.0132	ppb	64.96	#VALUE!	
208 Pb	0.015	0.015	ppb	103.34	2000.	
232 Th	0.0112	0.0112	ppb	49.89	1000.	
238 U	0.0159	0.0159	ppb	10.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3183505.30	2.81	3440039.00	92.5	69.5 - 120	
45 Sc	3046242.00	0.04	3153680.00	96.6	69.5 - 120	
89 Y	3899948.80	0.50	4049389.00	96.3	69.5 - 120	
159 Tb	4195899.50	1.62	4277856.00	98.1	69.5 - 120	
209 Bi	2370111.80	0.79	2443113.00	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000189

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 20 2018 06:13 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	432.42	100.	
11 B	1.818	1.818	ppb	9.03	1000.	
23 Na	3.083	3.083	ppb	10.90	200000.	
25 Mg	0.7798	0.7798	ppb	30.21	200000.	
27 Al	0.4672	0.4672	ppb	46.13	200000.	
28 Si	22.02	22.02	ppb	38.66	#VALUE!	
29 Si	50.98	50.98	ppb	417.03	10000.	
39 K	-1.936	-1.936	ppb	129.65	200000.	
43 Ca	-2.	-2.	ppb	106.95	#VALUE!	
44 Ca	-1.655	-1.655	ppb	187.67	200000.	
51 V	0.0551	0.0551	ppb	48.97	1000.	
52 Cr	0.0056	0.0056	ppb	565.14	2000.	
53 Cr	0.3613	0.3613	ppb	40.69	#VALUE!	
55 Mn	-0.0046	-0.0046	ppb	136.46	2000.	
56 Fe	1.475	1.475	ppb	280.20	#VALUE!	
57 Fe	-1.865	-1.865	ppb	134.80	100000.	
59 Co	0.0063	0.0063	ppb	34.53	1000.	
60 Ni	-0.0001	-0.0001	ppb	14351.00	1000.	
63 Cu	0.0146	0.0146	ppb	14.78	#VALUE!	
65 Cu	0.01	0.01	ppb	28.60	2000.	
66 Zn	-0.0193	-0.0193	ppb	146.71	2000.	
68 Zn	0.0344	0.0344	ppb	194.08	#VALUE!	
75 As	-0.0599	-0.0599	ppb	249.54	1000.	
82 Se	0.3165	0.3165	ppb	62.18	1000.	
88 Sr	0.0028	0.0028	ppb	113.65	2000.	
98 Mo	0.0393	0.0393	ppb	14.96	1000.	
107 Ag	0.0013	0.0013	ppb	88.70	100.	
109 Ag	0.0005	0.0005	ppb	416.05	#VALUE!	
111 Cd	-0.085	-0.085	ppb	20.74	#VALUE!	
114 Cd	0.001	0.001	ppb	454.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0147	0.0147	ppb	76.67	1000.	
120 Sn	0.0338	0.0338	ppb	29.03	#VALUE!	
121 Sb	0.0059	0.0059	ppb	74.48	#VALUE!	
123 Sb	0.0077	0.0077	ppb	24.62	1000.	
135 Ba	0.0146	0.0146	ppb	67.16	2000.	
137 Ba	0.0032	0.0032	ppb	300.38	#VALUE!	
182 W	0.0478	0.0478	ppb	24.87	1000.	
203 Tl	-0.0007	-0.0007	ppb	246.04	1000.	
205 Tl	0.0047	0.0047	ppb	45.98	#VALUE!	
208 Pb	0.0065	0.0065	ppb	61.39	2000.	
232 Th	0.0062	0.0062	ppb	27.85	1000.	
238 U	0.0041	0.0041	ppb	35.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177742.80	2.23	3440039.00	92.4	69.5 - 120	
45 Sc	3048740.30	2.04	3153680.00	96.7	69.5 - 120	
89 Y	3915306.30	1.39	4049389.00	96.7	69.5 - 120	
159 Tb	4194156.30	1.77	4277856.00	98.0	69.5 - 120	
209 Bi	2376836.80	2.24	2443113.00	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000190

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\028_CCV.D\028_CCV.D#
Date Acquired: Mar 20 2018 06:17 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.1	ppb	1.16	25	100.4	
11 B	25.76	ppb	3.48	25	103.04	
23 Na	4,913.	ppb	1.14	5,000	98.26	
25 Mg	4,945.	ppb	0.65	5,000	98.9	
27 Al	484.5	ppb	0.92	500	96.9	
28 Si	426.2	ppb	12.65	500	85.24	
29 Si	152.3	ppb	9.28	500	30.46	Fail
39 K	4,901.	ppb	0.38	5,000	98.02	
43 Ca	4,953.	ppb	1.76	5,000	99.06	
44 Ca	5,088.	ppb	0.28	5,000	101.76	
51 V	24.69	ppb	0.59	25	98.76	
52 Cr	24.93	ppb	0.41	25	99.72	
53 Cr	24.9	ppb	1.01	25	99.6	
55 Mn	24.82	ppb	0.23	25	99.28	
56 Fe	4,991.	ppb	0.61	5,000	99.82	
57 Fe	5,113.	ppb	1.21	5,000	102.26	
59 Co	24.92	ppb	0.48	25	99.68	
60 Ni	25.08	ppb	0.78	25	100.32	
63 Cu	25.38	ppb	0.35	25	101.52	
65 Cu	25.06	ppb	1.63	25	100.24	
66 Zn	25.08	ppb	0.92	25	100.32	
68 Zn	24.89	ppb	2.58	25	99.56	
75 As	25.03	ppb	1.04	25	100.12	
82 Se	25.69	ppb	2.61	25	102.76	
88 Sr	24.96	ppb	1.07	25	99.84	
98 Mo	25.31	ppb	1.22	25	101.24	
107 Ag	25.66	ppb	0.53	25	102.64	
109 Ag	25.57	ppb	0.42	25	102.28	
111 Cd	25.72	ppb	1.63	25	102.88	
114 Cd	25.59	ppb	0.69	25	102.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.03	ppb	0.20	25	100.12	
120 Sn	24.8	ppb	1.87	25	99.2	
121 Sb	24.64	ppb	0.52	25	98.56	
123 Sb	24.95	ppb	1.24	25	99.8	
135 Ba	25.45	ppb	0.81	25	101.8	
137 Ba	25.19	ppb	1.45	25	100.76	
182 W	24.67	ppb	0.91	25	98.68	
203 Tl	24.65	ppb	0.86	25	98.6	
205 Tl	24.76	ppb	1.39	25	99.04	
208 Pb	24.69	ppb	1.71	25	98.76	
232 Th	24.68	ppb	1.40	25	98.72	
238 U	24.95	ppb	0.66	25	99.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3409218.00	0.98	3440039.00	99.1	80 - 120.4	
45 Sc	3252504.30	0.19	3153680.00	103.1	80 - 120.4	
89 Y	4222293.50	0.46	4049389.00	104.3	80 - 120.4	
159 Tb	4582039.50	0.57	4277856.00	107.1	80 - 120.4	
209 Bi	2563228.00	0.67	2443113.00	104.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000191

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\029_CCB.D\029_CCB.D#
Date Acquired: Mar 20 2018 06:21 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	95.35	1.00	
11 B	1.147	ppb	13.30	1.00	
23 Na	1.914	ppb	5.12	1.00	
25 Mg	0.5609	ppb	23.68	1.00	
27 Al	0.3149	ppb	15.97	1.00	
28 Si	22.84	ppb	422.33	1.00	
29 Si	-53.32	ppb	67.27	1.00	
39 K	-2.998	ppb	9.75	1.00	
43 Ca	-3.952	ppb	81.53	1.00	
44 Ca	-1.199	ppb	106.51	1.00	
51 V	0.0497	ppb	138.92	1.00	
52 Cr	-0.0348	ppb	74.35	1.00	
53 Cr	-0.4515	ppb	44.25	1.00	
55 Mn	-0.0109	ppb	19.65	1.00	
56 Fe	-3.379	ppb	81.21	1.00	
57 Fe	-2.041	ppb	12.42	1.00	
59 Co	0.0102	ppb	35.37	1.00	
60 Ni	-0.0035	ppb	174.68	1.00	
63 Cu	0.0058	ppb	82.17	1.00	
65 Cu	0.0106	ppb	76.85	1.00	
66 Zn	-0.0325	ppb	66.70	1.00	
68 Zn	0.0046	ppb	4378.00	1.00	
75 As	-0.0579	ppb	31.73	1.00	
82 Se	0.1921	ppb	82.09	1.00	
88 Sr	0.0034	ppb	166.74	1.00	
98 Mo	0.037	ppb	16.70	1.00	
107 Ag	0.0005	ppb	175.26	1.00	
109 Ag	0.0011	ppb	5.41	1.00	
111 Cd	-0.0492	ppb	15.34	1.00	
114 Cd	0.0053	ppb	58.18	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0131	ppb	63.77	1.00	
120 Sn	0.0223	ppb	50.00	1.00	
121 Sb	0.0046	ppb	113.37	1.00	
123 Sb	0.0054	ppb	99.22	1.00	
135 Ba	0.0048	ppb	171.13	1.00	
137 Ba	0.0103	ppb	44.52	1.00	
182 W	0.0323	ppb	10.03	1.00	
203 Tl	0.0006	ppb	277.16	1.00	
205 Tl	0.0056	ppb	47.24	1.00	
208 Pb	0.0044	ppb	16.56	1.00	
232 Th	0.0139	ppb	22.23	1.00	
238 U	0.0056	ppb	6.54	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3160834.30	0.60	3440039.00	91.9	79.5 - 120	
45 Sc	3007026.00	0.90	3153680.00	95.3	79.5 - 120	
89 Y	3927302.80	1.25	4049389.00	97.0	79.5 - 120	
159 Tb	4246431.00	0.57	4277856.00	99.3	79.5 - 120	
209 Bi	2391103.50	0.99	2443113.00	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000192

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\030SMPL.D\030SMPL.D#
Date Acquired: Mar 20 2018 06:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLC19IMS1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0038	0.0008	ppb	213.90	100.	
11 B	4.196	0.8392	ppb	4.41	1000.	
23 Na	40.335	8.067	ppb	3.89	200000.	
25 Mg	16.96	3.392	ppb	3.44	200000.	
27 Al	14.06	2.812	ppb	1.73	200000.	
28 Si	-136.7	-27.34	ppb	485.74	#VALUE!	
29 Si	-390.95	-78.19	ppb	30.75	10000.	
39 K	14.135	2.827	ppb	13.13	200000.	
43 Ca	7.535	1.507	ppb	222.16	#VALUE!	
44 Ca	29.59	5.918	ppb	23.27	200000.	
51 V	-0.0551	-0.011	ppb	593.73	1000.	
52 Cr	1.158	0.2316	ppb	4.89	2000.	
53 Cr	31.915	6.383	ppb	1.35	#VALUE!	
55 Mn	0.3513	0.0703	ppb	13.92	2000.	
56 Fe	8.85	1.77	ppb	189.83	#VALUE!	
57 Fe	12.28	2.456	ppb	27.31	100000.	
59 Co	0.0499	0.01	ppb	49.92	1000.	
60 Ni	0.52	0.104	ppb	21.34	1000.	
63 Cu	0.6185	0.1237	ppb	15.63	#VALUE!	
65 Cu	0.7535	0.1507	ppb	9.75	2000.	
66 Zn	0.6805	0.1361	ppb	34.87	2000.	
68 Zn	0.1714	0.0343	ppb	244.75	#VALUE!	
75 As	0.0835	0.0167	ppb	528.26	1000.	
82 Se	0.0723	0.0145	ppb	2054.60	1000.	
88 Sr	0.1774	0.0355	ppb	10.66	2000.	
98 Mo	0.2238	0.0448	ppb	18.93	1000.	
107 Ag	0.007	0.0014	ppb	158.84	100.	
109 Ag	0.0024	0.0005	ppb	222.36	#VALUE!	
111 Cd	-0.3716	-0.0743	ppb	10.88	#VALUE!	
114 Cd	-0.0205	-0.0041	ppb	252.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.45	8.69	ppb	2.34	1000.	
120 Sn	43.285	8.657	ppb	2.29	#VALUE!	
121 Sb	0.1462	0.0292	ppb	36.20	#VALUE!	
123 Sb	0.1576	0.0315	ppb	5.94	1000.	
135 Ba	0.309	0.0618	ppb	16.91	2000.	
137 Ba	0.3464	0.0693	ppb	18.71	#VALUE!	
182 W	0.2176	0.0435	ppb	9.05	1000.	
203 Tl	-0.0104	-0.0021	ppb	158.55	1000.	
205 Tl	0.0211	0.0042	ppb	49.41	#VALUE!	
208 Pb	0.3072	0.0614	ppb	11.71	2000.	
232 Th	0.0985	0.0197	ppb	25.98	1000.	
238 U	0.0149	0.003	ppb	14.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3127207.00	2.40	3440039.00	90.9	69.5 - 120	
45 Sc	2960250.30	1.34	3153680.00	93.9	69.5 - 120	
89 Y	3968085.30	0.98	4049389.00	98.0	69.5 - 120	
159 Tb	4269939.50	1.27	4277856.00	99.8	69.5 - 120	
209 Bi	2388984.80	1.02	2443113.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000193

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\031SMPL.D\031SMPL.D#
Date Acquired: Mar 20 2018 06:29 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLC19IMS1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.29	9.858	ppb	0.86	100.	
11 B	502.	100.4	ppb	3.12	1000.	
23 Na	7,310.	1,462.	ppb	1.49	200000.	
25 Mg	5,075.	1,015.	ppb	3.16	200000.	
27 Al	1,980.	396.	ppb	1.76	200000.	
28 Si	408.55	81.71	ppb	5.17	#VALUE!	
29 Si	-265.15	-53.03	ppb	62.70	10000.	
39 K	9,755.	1,951.	ppb	1.88	200000.	
43 Ca	2,839.	567.8	ppb	2.29	#VALUE!	
44 Ca	2,526.	505.2	ppb	2.91	200000.	
51 V	490.3	98.06	ppb	1.49	1000.	
52 Cr	193.95	38.79	ppb	1.85	2000.	
53 Cr	226.55	45.31	ppb	2.33	#VALUE!	
55 Mn	488.55	97.71	ppb	0.97	2000.	
56 Fe	949.	189.8	ppb	1.47	#VALUE!	
57 Fe	973.	194.6	ppb	2.00	100000.	
59 Co	501.5	100.3	ppb	1.28	1000.	
60 Ni	505.	101.	ppb	2.32	1000.	
63 Cu	244.9	48.98	ppb	1.81	#VALUE!	
65 Cu	246.7	49.34	ppb	2.44	2000.	
66 Zn	479.05	95.81	ppb	1.78	2000.	
68 Zn	543.5	108.7	ppb	2.48	#VALUE!	
75 As	100.	20.	ppb	0.45	1000.	
82 Se	97.85	19.57	ppb	2.54	1000.	
88 Sr	505.	101.	ppb	1.30	2000.	
98 Mo	101.3	20.26	ppb	1.14	1000.	
107 Ag	51.1	10.22	ppb	0.22	100.	
109 Ag	51.7	10.34	ppb	1.45	#VALUE!	
111 Cd	254.65	50.93	ppb	1.15	#VALUE!	
114 Cd	255.05	51.01	ppb	1.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	547.	109.4	ppb	1.34	1000.	
120 Sn	543.	108.6	ppb	0.87	#VALUE!	
121 Sb	100.65	20.13	ppb	0.20	#VALUE!	
123 Sb	102.45	20.49	ppb	0.96	1000.	
135 Ba	2,051.5	410.3	ppb	0.99	2000.	
137 Ba	2,052.	410.4	ppb	0.64	#VALUE!	
182 W	98.25	19.65	ppb	0.96	1000.	
203 Tl	100.55	20.11	ppb	1.06	1000.	
205 Tl	100.95	20.19	ppb	1.31	#VALUE!	
208 Pb	102.25	20.45	ppb	0.99	2000.	
232 Th	101.15	20.23	ppb	1.06	1000.	
238 U	103.05	20.61	ppb	1.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3317135.00	1.16	3440039.00	96.4	69.5 - 120	
45 Sc	3101099.30	1.27	3153680.00	98.3	69.5 - 120	
89 Y	4176889.00	0.78	4049389.00	103.1	69.5 - 120	
159 Tb	4470974.00	0.59	4277856.00	104.5	69.5 - 120	
209 Bi	2484766.80	0.88	2443113.00	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000194

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 20 2018 06:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.375	2.875	ppb	1.10	100.	
11 B	92.55	18.51	ppb	0.89	1000.	
23 Na	35,280.	7,056.	ppb	2.40	200000.	
25 Mg	102,350.	20,470.	ppb	2.24	200000.	
27 Al	234,150.	46,830.	ppb	2.05	200000.	
28 Si	1,051.5	210.3	ppb	33.21	#VALUE!	
29 Si	-225.25	-45.05	ppb	46.77	10000.	
39 K	62,250.	12,450.	ppb	1.52	200000.	
43 Ca	221,150.	44,230.	ppb	0.96	#VALUE!	
44 Ca	212,950.	42,590.	ppb	0.98	200000.	
51 V	363.55	72.71	ppb	1.06	1000.	
52 Cr	185.45	37.09	ppb	1.20	2000.	
53 Cr	202.4	40.48	ppb	1.74	#VALUE!	
55 Mn	1,531.5	306.3	ppb	0.36	2000.	
56 Fe	194,400.	38,880.	ppb	1.20	#VALUE!	
57 Fe	189,250.	37,850.	ppb	0.68	100000.	
59 Co	79.55	15.91	ppb	1.57	1000.	
60 Ni	209.1	41.82	ppb	2.14	1000.	
63 Cu	177.	35.4	ppb	0.87	#VALUE!	
65 Cu	176.8	35.36	ppb	1.64	2000.	
66 Zn	619.	123.8	ppb	1.81	2000.	
68 Zn	698.5	139.7	ppb	1.03	#VALUE!	
75 As	97.45	19.49	ppb	1.48	1000.	
82 Se	5.44	1.088	ppb	18.15	1000.	
88 Sr	1,222.5	244.5	ppb	1.12	2000.	
98 Mo	4.352	0.8704	ppb	4.84	1000.	
107 Ag	1.2205	0.2441	ppb	3.17	100.	
109 Ag	1.0735	0.2147	ppb	0.83	#VALUE!	
111 Cd	1.9185	0.3837	ppb	4.84	#VALUE!	
114 Cd	-0.0015	-0.0003	ppb	2617.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.85	11.37	ppb	1.49	1000.	
120 Sn	56.3	11.26	ppb	1.86	#VALUE!	
121 Sb	2.138	0.4276	ppb	2.15	#VALUE!	
123 Sb	2.034	0.4068	ppb	2.72	1000.	
135 Ba	3,216.5	643.3	ppb	1.60	2000.	
137 Ba	3,211.5	642.3	ppb	1.82	#VALUE!	
182 W	0.731	0.1462	ppb	5.51	1000.	
203 Tl	4.658	0.9316	ppb	0.42	1000.	
205 Tl	4.6865	0.9373	ppb	1.34	#VALUE!	
208 Pb	187.8	37.56	ppb	1.68	2000.	
232 Th	127.45	25.49	ppb	1.46	1000.	
238 U	22.435	4.487	ppb	2.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3378208.50	1.38	3440039.00	98.2	69.5 - 120	
45 Sc	3357179.00	1.23	3153680.00	106.5	69.5 - 120	
89 Y	4972454.50	0.76	4049389.00	122.8	69.5 - 120	IS Fai
159 Tb	4647154.50	1.34	4277856.00	108.6	69.5 - 120	
209 Bi	2463710.50	1.09	2443113.00	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000195

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 20 2018 06:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.645	2.729	ppb	2.47	100.	
11 B	107.15	21.43	ppb	2.97	1000.	
23 Na	32,320.	6,464.	ppb	0.81	200000.	
25 Mg	86,400.	17,280.	ppb	0.58	200000.	
27 Al	231,750.	46,350.	ppb	0.47	200000.	
28 Si	2,097.	419.4	ppb	9.40	#VALUE!	
29 Si	913.	182.6	ppb	106.24	10000.	
39 K	65,850.	13,170.	ppb	0.58	200000.	
43 Ca	167,850.	33,570.	ppb	0.88	#VALUE!	
44 Ca	166,500.	33,300.	ppb	0.53	200000.	
51 V	468.35	93.67	ppb	0.31	1000.	
52 Cr	196.4	39.28	ppb	0.15	2000.	
53 Cr	215.6	43.12	ppb	1.44	#VALUE!	
55 Mn	1,618.5	323.7	ppb	1.22	2000.	
56 Fe	218,150.	43,630.	ppb	0.43	#VALUE!	
57 Fe	214,200.	42,840.	ppb	0.69	100000.	
59 Co	95.95	19.19	ppb	0.22	1000.	
60 Ni	245.8	49.16	ppb	0.31	1000.	
63 Cu	188.7	37.74	ppb	0.38	#VALUE!	
65 Cu	188.1	37.62	ppb	1.05	2000.	
66 Zn	636.	127.2	ppb	0.35	2000.	
68 Zn	689.	137.8	ppb	0.56	#VALUE!	
75 As	186.8	37.36	ppb	0.49	1000.	
82 Se	5.64	1.128	ppb	20.33	1000.	
88 Sr	849.5	169.9	ppb	0.39	2000.	
98 Mo	8.945	1.789	ppb	1.03	1000.	
107 Ag	1.5325	0.3065	ppb	6.87	100.	
109 Ag	1.3475	0.2695	ppb	1.03	#VALUE!	
111 Cd	1.8845	0.3769	ppb	16.80	#VALUE!	
114 Cd	-0.3605	-0.0721	ppb	46.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.6	10.32	ppb	0.64	1000.	
120 Sn	51.05	10.21	ppb	0.84	#VALUE!	
121 Sb	2.9315	0.5863	ppb	2.90	#VALUE!	
123 Sb	3.0165	0.6033	ppb	4.51	1000.	
135 Ba	2,087.5	417.5	ppb	0.61	2000.	
137 Ba	2,076.	415.2	ppb	0.28	#VALUE!	
182 W	1.056	0.2112	ppb	10.16	1000.	
203 Tl	4.2285	0.8457	ppb	5.34	1000.	
205 Tl	4.2985	0.8597	ppb	1.65	#VALUE!	
208 Pb	200.05	40.01	ppb	0.45	2000.	
232 Th	120.75	24.15	ppb	0.62	1000.	
238 U	26.	5.2	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3442120.30	0.71	3440039.00	100.1	69.5 - 120	
45 Sc	3364367.50	0.73	3153680.00	106.7	69.5 - 120	
89 Y	4959504.00	0.50	4049389.00	122.5	69.5 - 120	IS Fai
159 Tb	4681858.50	0.34	4277856.00	109.4	69.5 - 120	
209 Bi	2493624.30	0.58	2443113.00	102.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000196

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 20 2018 06:41 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-003
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.52	2.104	ppb	2.04	100.	
11 B	135.35	27.07	ppb	1.01	1000.	
23 Na	11,410.	2,282.	ppb	1.07	200000.	
25 Mg	83,200.	16,640.	ppb	1.30	200000.	
27 Al	216,050.	43,210.	ppb	0.34	200000.	
28 Si	2,386.	477.2	ppb	9.65	#VALUE!	
29 Si	1,171.	234.2	ppb	85.91	10000.	
39 K	55,600.	11,120.	ppb	0.56	200000.	
43 Ca	593,500.	118,700.	ppb	0.62	#VALUE!	
44 Ca	584,000.	116,800.	ppb	1.16	200000.	
51 V	445.65	89.13	ppb	0.88	1000.	
52 Cr	190.65	38.13	ppb	1.50	2000.	
53 Cr	211.7	42.34	ppb	1.40	#VALUE!	
55 Mn	1,664.	332.8	ppb	1.20	2000.	
56 Fe	179,900.	35,980.	ppb	1.38	#VALUE!	
57 Fe	175,950.	35,190.	ppb	1.13	100000.	
59 Co	80.25	16.05	ppb	1.67	1000.	
60 Ni	202.	40.4	ppb	1.82	1000.	
63 Cu	130.2	26.04	ppb	1.98	#VALUE!	
65 Cu	131.95	26.39	ppb	0.96	2000.	
66 Zn	494.85	98.97	ppb	2.74	2000.	
68 Zn	616.	123.2	ppb	1.88	#VALUE!	
75 As	105.25	21.05	ppb	1.93	1000.	
82 Se	5.12	1.024	ppb	10.01	1000.	
88 Sr	1,457.	291.4	ppb	0.74	2000.	
98 Mo	5.63	1.126	ppb	2.78	1000.	
107 Ag	0.837	0.1674	ppb	3.51	100.	
109 Ag	0.587	0.1174	ppb	2.26	#VALUE!	
111 Cd	3.4285	0.6857	ppb	2.19	#VALUE!	
114 Cd	0.042	0.0084	ppb	285.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.2	11.44	ppb	1.37	1000.	
120 Sn	55.75	11.15	ppb	1.37	#VALUE!	
121 Sb	2.567	0.5134	ppb	2.41	#VALUE!	
123 Sb	2.6875	0.5375	ppb	0.44	1000.	
135 Ba	4,120.5	824.1	ppb	0.95	2000.	
137 Ba	4,039.	807.8	ppb	0.93	#VALUE!	
182 W	0.892	0.1784	ppb	12.14	1000.	
203 Tl	3.753	0.7506	ppb	4.86	1000.	
205 Tl	3.686	0.7372	ppb	3.65	#VALUE!	
208 Pb	146.5	29.3	ppb	0.90	2000.	
232 Th	97.25	19.45	ppb	0.81	1000.	
238 U	20.865	4.173	ppb	1.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3438885.50	0.82	3440039.00	100.0	69.5 - 120	
45 Sc	3355001.50	0.54	3153680.00	106.4	69.5 - 120	
89 Y	4863368.50	1.09	4049389.00	120.1	69.5 - 120	
159 Tb	4727172.00	0.47	4277856.00	110.5	69.5 - 120	
209 Bi	2476370.50	0.33	2443113.00	101.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000197

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 20 2018 06:45 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-004
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.835	1.567	ppb	1.13	100.	
11 B	89.3	17.86	ppb	2.95	1000.	
23 Na	16,385.	3,277.	ppb	1.40	200000.	
25 Mg	46,630.	9,326.	ppb	1.02	200000.	
27 Al	146,200.	29,240.	ppb	1.92	200000.	
28 Si	2,320.	464.	ppb	8.30	#VALUE!	
29 Si	529.5	105.9	ppb	24.32	10000.	
39 K	38,170.	7,634.	ppb	0.90	200000.	
43 Ca	63,350.	12,670.	ppb	0.76	#VALUE!	
44 Ca	62,450.	12,490.	ppb	0.69	200000.	
51 V	304.4	60.88	ppb	0.99	1000.	
52 Cr	136.9	27.38	ppb	1.65	2000.	
53 Cr	159.5	31.9	ppb	1.16	#VALUE!	
55 Mn	812.5	162.5	ppb	1.14	2000.	
56 Fe	152,100.	30,420.	ppb	0.70	#VALUE!	
57 Fe	149,200.	29,840.	ppb	0.82	100000.	
59 Co	38.54	7.708	ppb	1.15	1000.	
60 Ni	136.3	27.26	ppb	2.51	1000.	
63 Cu	114.95	22.99	ppb	1.51	#VALUE!	
65 Cu	115.95	23.19	ppb	1.20	2000.	
66 Zn	349.9	69.98	ppb	2.26	2000.	
68 Zn	370.85	74.17	ppb	1.82	#VALUE!	
75 As	48.13	9.626	ppb	0.74	1000.	
82 Se	3.125	0.625	ppb	30.99	1000.	
88 Sr	361.35	72.27	ppb	0.66	2000.	
98 Mo	6.395	1.279	ppb	2.79	1000.	
107 Ag	0.671	0.1342	ppb	5.11	100.	
109 Ag	0.4556	0.0911	ppb	5.27	#VALUE!	
111 Cd	1.919	0.3838	ppb	1.81	#VALUE!	
114 Cd	-0.223	-0.0446	ppb	38.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.45	9.89	ppb	1.97	1000.	
120 Sn	49.575	9.915	ppb	1.90	#VALUE!	
121 Sb	1.7795	0.3559	ppb	4.22	#VALUE!	
123 Sb	1.8035	0.3607	ppb	10.90	1000.	
135 Ba	1,062.	212.4	ppb	2.03	2000.	
137 Ba	1,053.5	210.7	ppb	0.82	#VALUE!	
182 W	0.645	0.129	ppb	10.77	1000.	
203 Tl	2.919	0.5838	ppb	4.05	1000.	
205 Tl	2.94	0.588	ppb	2.40	#VALUE!	
208 Pb	140.5	28.1	ppb	0.28	2000.	
232 Th	73.2	14.64	ppb	0.71	1000.	
238 U	13.18	2.636	ppb	0.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3439075.50	1.50	3440039.00	100.0	69.5 - 120	
45 Sc	3287444.00	1.37	3153680.00	104.2	69.5 - 120	
89 Y	4729257.50	1.48	4049389.00	116.8	69.5 - 120	
159 Tb	4710183.50	1.31	4277856.00	110.1	69.5 - 120	
209 Bi	2520693.50	0.75	2443113.00	103.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000198

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 20 2018 06:50 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-005
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.715	1.943	ppb	4.28	100.	
11 B	115.05	23.01	ppb	1.40	1000.	
23 Na	33,500.	6,700.	ppb	0.60	200000.	
25 Mg	90,550.	18,110.	ppb	0.46	200000.	
27 Al	179,150.	35,830.	ppb	0.91	200000.	
28 Si	1,867.	373.4	ppb	8.43	#VALUE!	
29 Si	171.5	34.3	ppb	48.69	10000.	
39 K	49,920.	9,984.	ppb	1.06	200000.	
43 Ca	203,850.	40,770.	ppb	0.73	#VALUE!	
44 Ca	196,900.	39,380.	ppb	1.01	200000.	
51 V	294.95	58.99	ppb	0.73	1000.	
52 Cr	155.	31.	ppb	0.69	2000.	
53 Cr	172.4	34.48	ppb	0.32	#VALUE!	
55 Mn	2,205.5	441.1	ppb	0.46	2000.	
56 Fe	158,150.	31,630.	ppb	0.10	#VALUE!	
57 Fe	154,700.	30,940.	ppb	1.06	100000.	
59 Co	52.5	10.5	ppb	1.15	1000.	
60 Ni	125.3	25.06	ppb	0.84	1000.	
63 Cu	113.75	22.75	ppb	0.88	#VALUE!	
65 Cu	114.35	22.87	ppb	0.55	2000.	
66 Zn	445.9	89.18	ppb	0.46	2000.	
68 Zn	496.85	99.37	ppb	1.66	#VALUE!	
75 As	34.435	6.887	ppb	2.39	1000.	
82 Se	5.66	1.132	ppb	14.00	1000.	
88 Sr	862.	172.4	ppb	0.18	2000.	
98 Mo	9.555	1.911	ppb	4.21	1000.	
107 Ag	0.992	0.1984	ppb	3.74	100.	
109 Ag	0.738	0.1476	ppb	9.27	#VALUE!	
111 Cd	2.0185	0.4037	ppb	16.86	#VALUE!	
114 Cd	-0.402	-0.0804	ppb	19.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.45	10.09	ppb	1.96	1000.	
120 Sn	49.945	9.989	ppb	1.32	#VALUE!	
121 Sb	1.624	0.3248	ppb	9.32	#VALUE!	
123 Sb	1.771	0.3542	ppb	6.65	1000.	
135 Ba	1,939.	387.8	ppb	1.07	2000.	
137 Ba	1,928.5	385.7	ppb	0.64	#VALUE!	
182 W	0.7785	0.1557	ppb	12.67	1000.	
203 Tl	3.1675	0.6335	ppb	4.25	1000.	
205 Tl	3.0905	0.6181	ppb	2.91	#VALUE!	
208 Pb	143.6	28.72	ppb	1.56	2000.	
232 Th	88.35	17.67	ppb	1.50	1000.	
238 U	18.965	3.793	ppb	2.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3418222.80	3.12	3440039.00	99.4	69.5 - 120	
45 Sc	3386331.80	0.58	3153680.00	107.4	69.5 - 120	
89 Y	4809434.00	0.48	4049389.00	118.8	69.5 - 120	
159 Tb	4705654.00	1.07	4277856.00	110.0	69.5 - 120	
209 Bi	2498451.00	1.28	2443113.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000199

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 20 2018 06:54 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-006
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.12	1.824	ppb	1.03	100.	
11 B	97.6	19.52	ppb	2.09	1000.	
23 Na	18,365.	3,673.	ppb	1.02	200000.	
25 Mg	80,600.	16,120.	ppb	1.26	200000.	
27 Al	176,900.	35,380.	ppb	1.34	200000.	
28 Si	2,378.5	475.7	ppb	19.70	#VALUE!	
29 Si	985.5	197.1	ppb	92.39	10000.	
39 K	44,730.	8,946.	ppb	0.83	200000.	
43 Ca	142,950.	28,590.	ppb	0.70	#VALUE!	
44 Ca	140,900.	28,180.	ppb	0.63	200000.	
51 V	360.65	72.13	ppb	0.37	1000.	
52 Cr	151.55	30.31	ppb	0.73	2000.	
53 Cr	173.75	34.75	ppb	0.17	#VALUE!	
55 Mn	2,605.5	521.1	ppb	0.48	2000.	
56 Fe	169,000.	33,800.	ppb	0.74	#VALUE!	
57 Fe	165,450.	33,090.	ppb	0.22	100000.	
59 Co	57.9	11.58	ppb	0.25	1000.	
60 Ni	126.6	25.32	ppb	1.18	1000.	
63 Cu	126.4	25.28	ppb	0.70	#VALUE!	
65 Cu	125.85	25.17	ppb	1.70	2000.	
66 Zn	434.9	86.98	ppb	0.35	2000.	
68 Zn	465.8	93.16	ppb	0.67	#VALUE!	
75 As	87.95	17.59	ppb	1.05	1000.	
82 Se	5.065	1.013	ppb	23.13	1000.	
88 Sr	508.5	101.7	ppb	1.35	2000.	
98 Mo	8.1	1.62	ppb	1.94	1000.	
107 Ag	0.716	0.1432	ppb	2.22	100.	
109 Ag	0.5265	0.1053	ppb	7.70	#VALUE!	
111 Cd	1.97	0.394	ppb	4.88	#VALUE!	
114 Cd	-0.3695	-0.0739	ppb	31.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.25	10.25	ppb	1.45	1000.	
120 Sn	51.4	10.28	ppb	1.40	#VALUE!	
121 Sb	1.864	0.3728	ppb	4.90	#VALUE!	
123 Sb	1.8765	0.3753	ppb	1.65	1000.	
135 Ba	1,415.	283.	ppb	1.21	2000.	
137 Ba	1,411.	282.2	ppb	0.66	#VALUE!	
182 W	0.852	0.1704	ppb	8.96	1000.	
203 Tl	3.157	0.6314	ppb	1.84	1000.	
205 Tl	3.217	0.6434	ppb	0.86	#VALUE!	
208 Pb	129.95	25.99	ppb	0.88	2000.	
232 Th	85.95	17.19	ppb	1.29	1000.	
238 U	11.485	2.297	ppb	1.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3439196.30	1.05	3440039.00	100.0	69.5 - 120	
45 Sc	3359273.80	0.84	3153680.00	106.5	69.5 - 120	
89 Y	4762933.00	0.34	4049389.00	117.6	69.5 - 120	
159 Tb	4710218.00	0.94	4277856.00	110.1	69.5 - 120	
209 Bi	2506283.80	0.98	2443113.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000200

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 20 2018 06:58 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-007
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.075	1.015	ppb	0.69	100.	
11 B	57.7	11.54	ppb	2.32	1000.	
23 Na	3,474.5	694.9	ppb	0.75	200000.	
25 Mg	22,190.	4,438.	ppb	0.38	200000.	
27 Al	88,050.	17,610.	ppb	1.46	200000.	
28 Si	3,406.	681.2	ppb	4.33	#VALUE!	
29 Si	1,487.	297.4	ppb	49.09	10000.	
39 K	29,325.	5,865.	ppb	0.54	200000.	
43 Ca	18,755.	3,751.	ppb	1.39	#VALUE!	
44 Ca	18,935.	3,787.	ppb	1.20	200000.	
51 V	184.	36.8	ppb	0.58	1000.	
52 Cr	91.35	18.27	ppb	0.56	2000.	
53 Cr	115.85	23.17	ppb	0.63	#VALUE!	
55 Mn	2,814.	562.8	ppb	1.09	2000.	
56 Fe	77,500.	15,500.	ppb	0.95	#VALUE!	
57 Fe	76,050.	15,210.	ppb	0.77	100000.	
59 Co	51.4	10.28	ppb	0.44	1000.	
60 Ni	69.5	13.9	ppb	0.54	1000.	
63 Cu	73.8	14.76	ppb	1.23	#VALUE!	
65 Cu	73.95	14.79	ppb	0.78	2000.	
66 Zn	264.05	52.81	ppb	0.20	2000.	
68 Zn	299.55	59.91	ppb	1.30	#VALUE!	
75 As	23.175	4.635	ppb	6.63	1000.	
82 Se	5.56	1.112	ppb	13.57	1000.	
88 Sr	273.4	54.68	ppb	1.17	2000.	
98 Mo	10.6	2.12	ppb	0.91	1000.	
107 Ag	0.5235	0.1047	ppb	7.33	100.	
109 Ag	0.4756	0.0951	ppb	3.46	#VALUE!	
111 Cd	2.4815	0.4963	ppb	7.37	#VALUE!	
114 Cd	1.751	0.3502	ppb	1.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.85	9.17	ppb	0.35	1000.	
120 Sn	45.845	9.169	ppb	1.00	#VALUE!	
121 Sb	1.175	0.235	ppb	5.14	#VALUE!	
123 Sb	1.1985	0.2397	ppb	2.98	1000.	
135 Ba	1,275.	255.	ppb	0.43	2000.	
137 Ba	1,274.5	254.9	ppb	0.69	#VALUE!	
182 W	0.686	0.1372	ppb	11.27	1000.	
203 Tl	1.9815	0.3963	ppb	2.29	1000.	
205 Tl	2.1175	0.4235	ppb	1.89	#VALUE!	
208 Pb	127.5	25.5	ppb	0.25	2000.	
232 Th	78.35	15.67	ppb	0.93	1000.	
238 U	14.81	2.962	ppb	0.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3424235.30	0.98	3440039.00	99.5	69.5 - 120	
45 Sc	3279925.80	0.44	3153680.00	104.0	69.5 - 120	
89 Y	4710840.50	0.44	4049389.00	116.3	69.5 - 120	
159 Tb	4710868.50	0.37	4277856.00	110.1	69.5 - 120	
209 Bi	2549624.00	0.58	2443113.00	104.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000201

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 20 2018 07:02 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0006	ppb	357.43	100.	
11 B	0.5989	0.5989	ppb	11.85	1000.	
23 Na	17.88	17.88	ppb	3.50	200000.	
25 Mg	0.9888	0.9888	ppb	0.42	200000.	
27 Al	11.58	11.58	ppb	3.14	200000.	
28 Si	88.56	88.56	ppb	91.08	#VALUE!	
29 Si	-81.89	-81.89	ppb	1.33	10000.	
39 K	-4.708	-4.708	ppb	38.42	200000.	
43 Ca	-0.6559	-0.6559	ppb	443.97	#VALUE!	
44 Ca	2.931	2.931	ppb	43.43	200000.	
51 V	-0.0078	-0.0078	ppb	189.38	1000.	
52 Cr	0.0133	0.0133	ppb	67.35	2000.	
53 Cr	-0.4388	-0.4388	ppb	18.52	#VALUE!	
55 Mn	0.0275	0.0275	ppb	32.21	2000.	
56 Fe	-2.711	-2.711	ppb	42.60	#VALUE!	
57 Fe	-2.826	-2.826	ppb	21.30	100000.	
59 Co	0.0054	0.0054	ppb	50.53	1000.	
60 Ni	0.0028	0.0028	ppb	274.23	1000.	
63 Cu	0.0035	0.0035	ppb	25.11	#VALUE!	
65 Cu	0.0051	0.0051	ppb	105.34	2000.	
66 Zn	0.046	0.046	ppb	40.37	2000.	
68 Zn	0.0301	0.0301	ppb	588.92	#VALUE!	
75 As	-0.0823	-0.0823	ppb	120.59	1000.	
82 Se	-0.043	-0.043	ppb	381.92	1000.	
88 Sr	0.0055	0.0055	ppb	62.64	2000.	
98 Mo	0.0051	0.0051	ppb	103.46	1000.	
107 Ag	0.0009	0.0009	ppb	258.13	100.	
109 Ag	-0.0011	-0.0011	ppb	64.30	#VALUE!	
111 Cd	-0.1447	-0.1447	ppb	17.73	#VALUE!	
114 Cd	-0.0027	-0.0027	ppb	107.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0157	0.0157	ppb	109.49	1000.	
120 Sn	0.0187	0.0187	ppb	47.22	#VALUE!	
121 Sb	0.0013	0.0013	ppb	279.06	#VALUE!	
123 Sb	0.0034	0.0034	ppb	100.59	1000.	
135 Ba	0.0144	0.0144	ppb	49.28	2000.	
137 Ba	0.0118	0.0118	ppb	62.99	#VALUE!	
182 W	-0.0015	-0.0015	ppb	201.37	1000.	
203 Tl	-0.0017	-0.0017	ppb	321.42	1000.	
205 Tl	0.003	0.003	ppb	102.94	#VALUE!	
208 Pb	0.0039	0.0039	ppb	37.11	2000.	
232 Th	0.005	0.005	ppb	19.37	1000.	
238 U	0.0014	0.0014	ppb	29.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3140989.30	1.13	3440039.00	91.3	69.5 - 120	
45 Sc	3007982.50	0.39	3153680.00	95.4	69.5 - 120	
89 Y	3938443.80	0.85	4049389.00	97.3	69.5 - 120	
159 Tb	4219080.50	0.37	4277856.00	98.6	69.5 - 120	
209 Bi	2365206.50	0.28	2443113.00	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000202

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\040_CCV.D\040_CCV.D#
Date Acquired: Mar 20 2018 07:06 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.82	ppb	2.57	25	99.28	
11 B	24.36	ppb	4.13	25	97.44	
23 Na	4,849.	ppb	2.20	5,000	96.98	
25 Mg	4,897.	ppb	0.62	5,000	97.94	
27 Al	483.9	ppb	1.34	500	96.78	
28 Si	404.4	ppb	30.14	500	80.88	
29 Si	83.7	ppb	66.63	500	16.74	Fail
39 K	4,910.	ppb	1.75	5,000	98.2	
43 Ca	4,931.	ppb	2.02	5,000	98.62	
44 Ca	5,097.	ppb	1.29	5,000	101.94	
51 V	24.98	ppb	2.97	25	99.92	
52 Cr	24.8	ppb	2.96	25	99.2	
53 Cr	24.31	ppb	4.50	25	97.24	
55 Mn	24.63	ppb	3.23	25	98.52	
56 Fe	4,961.	ppb	1.60	5,000	99.22	
57 Fe	5,095.	ppb	2.40	5,000	101.9	
59 Co	25.	ppb	2.14	25	100	
60 Ni	25.25	ppb	3.49	25	101	
63 Cu	25.17	ppb	3.88	25	100.68	
65 Cu	24.76	ppb	3.41	25	99.04	
66 Zn	24.81	ppb	2.85	25	99.24	
68 Zn	25.37	ppb	3.15	25	101.48	
75 As	24.87	ppb	1.87	25	99.48	
82 Se	25.11	ppb	1.76	25	100.44	
88 Sr	24.94	ppb	1.67	25	99.76	
98 Mo	25.11	ppb	1.50	25	100.44	
107 Ag	25.27	ppb	3.27	25	101.08	
109 Ag	25.21	ppb	2.32	25	100.84	
111 Cd	24.79	ppb	3.73	25	99.16	
114 Cd	25.11	ppb	2.52	25	100.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.12	ppb	2.59	25	100.48	
120 Sn	24.98	ppb	2.10	25	99.92	
121 Sb	24.96	ppb	1.79	25	99.84	
123 Sb	25.19	ppb	1.96	25	100.76	
135 Ba	25.8	ppb	2.18	25	103.2	
137 Ba	25.	ppb	1.98	25	100	
182 W	24.3	ppb	0.35	25	97.2	
203 Tl	24.7	ppb	1.55	25	98.8	
205 Tl	24.9	ppb	0.24	25	99.6	
208 Pb	24.71	ppb	0.62	25	98.84	
232 Th	24.74	ppb	0.99	25	98.96	
238 U	25.	ppb	0.71	25	100	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3541578.30	4.70	3440039.00	103.0	80 - 120.4	
45 Sc	3374350.50	3.74	3153680.00	107.0	80 - 120.4	
89 Y	4368642.50	1.82	4049389.00	107.9	80 - 120.4	
159 Tb	4644677.50	3.60	4277856.00	108.6	80 - 120.4	
209 Bi	2575018.50	3.78	2443113.00	105.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000203

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\041_CCB.D\041_CCB.D#
Date Acquired: Mar 20 2018 07:10 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	28.45	1.00	
11 B	0.6046	ppb	10.70	1.00	
23 Na	0.4878	ppb	48.18	1.00	
25 Mg	0.2615	ppb	23.63	1.00	
27 Al	0.211	ppb	22.10	1.00	
28 Si	143.5	ppb	37.32	1.00	
29 Si	-19.66	ppb	169.18	1.00	
39 K	-1.611	ppb	19.63	1.00	
43 Ca	-0.6182	ppb	148.51	1.00	
44 Ca	1.92	ppb	167.03	1.00	
51 V	-0.0261	ppb	370.23	1.00	
52 Cr	-0.0274	ppb	59.99	1.00	
53 Cr	-0.2598	ppb	101.85	1.00	
55 Mn	0.0071	ppb	105.40	1.00	
56 Fe	0.8879	ppb	336.75	1.00	
57 Fe	-0.5282	ppb	295.72	1.00	
59 Co	0.0062	ppb	17.41	1.00	
60 Ni	0.0012	ppb	541.92	1.00	
63 Cu	0.0081	ppb	50.87	1.00	
65 Cu	0.0032	ppb	442.56	1.00	
66 Zn	-0.0243	ppb	191.35	1.00	
68 Zn	0.0137	ppb	1244.00	1.00	
75 As	-0.0515	ppb	187.64	1.00	
82 Se	0.2434	ppb	157.23	1.00	
88 Sr	-0.0002	ppb	983.63	1.00	
98 Mo	0.009	ppb	33.52	1.00	
107 Ag	0.0002	ppb	1220.20	1.00	
109 Ag	-0.0015	ppb	22.23	1.00	
111 Cd	-0.117	ppb	32.97	1.00	
114 Cd	0.0002	ppb	752.36	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0225	ppb	33.39	1.00	
120 Sn	0.0372	ppb	16.14	1.00	
121 Sb	0.003	ppb	206.09	1.00	
123 Sb	0.0046	ppb	109.88	1.00	
135 Ba	0.0115	ppb	114.47	1.00	
137 Ba	0.0021	ppb	709.24	1.00	
182 W	0.0132	ppb	45.41	1.00	
203 Tl	0.0064	ppb	88.83	1.00	
205 Tl	0.0042	ppb	45.38	1.00	
208 Pb	-0.002	ppb	160.92	1.00	
232 Th	0.0117	ppb	20.84	1.00	
238 U	0.0028	ppb	10.70	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3064106.50	1.90	3440039.00	89.1	79.5 - 120	
45 Sc	2956593.80	0.56	3153680.00	93.8	79.5 - 120	
89 Y	3883028.80	1.45	4049389.00	95.9	79.5 - 120	
159 Tb	4113470.80	0.19	4277856.00	96.2	79.5 - 120	
209 Bi	2323465.50	0.39	2443113.00	95.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000204

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\042SMPL.D\042SMPL.D#
Date Acquired: Mar 20 2018 07:14 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-008
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.79	1.158	ppb	4.23	100.	
11 B	57.3	11.46	ppb	6.51	1000.	
23 Na	1,886.5	377.3	ppb	0.63	200000.	
25 Mg	23,225.	4,645.	ppb	0.34	200000.	
27 Al	98,700.	19,740.	ppb	1.07	200000.	
28 Si	3,520.5	704.1	ppb	10.97	#VALUE!	
29 Si	2,415.	483.	ppb	41.12	10000.	
39 K	29,390.	5,878.	ppb	1.06	200000.	
43 Ca	16,965.	3,393.	ppb	0.72	#VALUE!	
44 Ca	16,985.	3,397.	ppb	0.99	200000.	
51 V	192.15	38.43	ppb	1.24	1000.	
52 Cr	100.1	20.02	ppb	1.71	2000.	
53 Cr	124.25	24.85	ppb	2.64	#VALUE!	
55 Mn	3,290.	658.	ppb	1.57	2000.	
56 Fe	83,950.	16,790.	ppb	1.55	#VALUE!	
57 Fe	82,450.	16,490.	ppb	1.96	100000.	
59 Co	51.65	10.33	ppb	1.35	1000.	
60 Ni	74.15	14.83	ppb	1.68	1000.	
63 Cu	73.85	14.77	ppb	2.25	#VALUE!	
65 Cu	74.4	14.88	ppb	0.93	2000.	
66 Zn	279.55	55.91	ppb	2.72	2000.	
68 Zn	321.55	64.31	ppb	2.39	#VALUE!	
75 As	23.92	4.784	ppb	7.64	1000.	
82 Se	7.025	1.405	ppb	7.20	1000.	
88 Sr	282.9	56.58	ppb	1.28	2000.	
98 Mo	16.56	3.312	ppb	4.33	1000.	
107 Ag	0.5465	0.1093	ppb	1.36	100.	
109 Ag	0.4976	0.0995	ppb	8.84	#VALUE!	
111 Cd	2.402	0.4804	ppb	5.70	#VALUE!	
114 Cd	1.611	0.3222	ppb	3.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.34	9.268	ppb	0.66	1000.	
120 Sn	45.75	9.15	ppb	1.08	#VALUE!	
121 Sb	1.054	0.2108	ppb	5.80	#VALUE!	
123 Sb	1.119	0.2238	ppb	0.25	1000.	
135 Ba	1,468.	293.6	ppb	0.76	2000.	
137 Ba	1,455.	291.	ppb	1.11	#VALUE!	
182 W	0.762	0.1524	ppb	12.76	1000.	
203 Tl	2.284	0.4568	ppb	4.45	1000.	
205 Tl	2.2575	0.4515	ppb	3.82	#VALUE!	
208 Pb	124.35	24.87	ppb	1.04	2000.	
232 Th	81.05	16.21	ppb	0.91	1000.	
238 U	17.515	3.503	ppb	1.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3440260.30	3.06	3440039.00	100.0	69.5 - 120	
45 Sc	3300821.50	0.31	3153680.00	104.7	69.5 - 120	
89 Y	4720706.00	1.75	4049389.00	116.6	69.5 - 120	
159 Tb	4628537.00	0.46	4277856.00	108.2	69.5 - 120	
209 Bi	2526848.30	1.06	2443113.00	103.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000205

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\043SMPL.D\043SMPL.D#
Date Acquired: Mar 20 2018 07:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.619	0.9238	ppb	3.37	100.	
11 B	41.93	8.386	ppb	3.88	1000.	
23 Na	842.	168.4	ppb	1.68	200000.	
25 Mg	20,400.	4,080.	ppb	1.57	200000.	
27 Al	79,950.	15,990.	ppb	0.88	200000.	
28 Si	2,692.5	538.5	ppb	14.27	#VALUE!	
29 Si	680.	136.	ppb	14.35	10000.	
39 K	28,145.	5,629.	ppb	1.13	200000.	
43 Ca	17,975.	3,595.	ppb	2.85	#VALUE!	
44 Ca	18,105.	3,621.	ppb	0.98	200000.	
51 V	154.9	30.98	ppb	1.25	1000.	
52 Cr	79.65	15.93	ppb	1.66	2000.	
53 Cr	99.95	19.99	ppb	2.18	#VALUE!	
55 Mn	2,422.5	484.5	ppb	1.01	2000.	
56 Fe	73,500.	14,700.	ppb	1.49	#VALUE!	
57 Fe	71,800.	14,360.	ppb	0.71	100000.	
59 Co	42.77	8.554	ppb	1.29	1000.	
60 Ni	60.95	12.19	ppb	1.80	1000.	
63 Cu	61.7	12.34	ppb	0.99	#VALUE!	
65 Cu	62.15	12.43	ppb	2.19	2000.	
66 Zn	234.55	46.91	ppb	0.34	2000.	
68 Zn	272.35	54.47	ppb	2.37	#VALUE!	
75 As	21.25	4.25	ppb	3.68	1000.	
82 Se	5.5	1.1	ppb	15.82	1000.	
88 Sr	233.35	46.67	ppb	1.24	2000.	
98 Mo	7.085	1.417	ppb	1.69	1000.	
107 Ag	0.4272	0.0854	ppb	3.35	100.	
109 Ag	0.3536	0.0707	ppb	14.62	#VALUE!	
111 Cd	1.963	0.3926	ppb	13.26	#VALUE!	
114 Cd	1.4235	0.2847	ppb	13.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.94	8.988	ppb	1.00	1000.	
120 Sn	44.12	8.824	ppb	0.86	#VALUE!	
121 Sb	0.9825	0.1965	ppb	14.53	#VALUE!	
123 Sb	0.9515	0.1903	ppb	11.25	1000.	
135 Ba	1,212.5	242.5	ppb	1.05	2000.	
137 Ba	1,196.	239.2	ppb	1.62	#VALUE!	
182 W	0.659	0.1318	ppb	3.30	1000.	
203 Tl	1.708	0.3416	ppb	2.37	1000.	
205 Tl	1.8485	0.3697	ppb	4.90	#VALUE!	
208 Pb	104.6	20.92	ppb	1.85	2000.	
232 Th	64.9	12.98	ppb	1.77	1000.	
238 U	11.18	2.236	ppb	1.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3475084.80	0.90	3440039.00	101.0	69.5 - 120	
45 Sc	3292175.80	0.85	3153680.00	104.4	69.5 - 120	
89 Y	4656733.50	0.94	4049389.00	115.0	69.5 - 120	
159 Tb	4665159.00	1.34	4277856.00	109.1	69.5 - 120	
209 Bi	2554286.50	1.42	2443113.00	104.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000206

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\044SMPL.D\044SMPL.D#
Date Acquired: Mar 20 2018 07:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009L
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.555	0.1822	ppb	3.00	100.	
11 B	47.825	1.913	ppb	5.69	1000.	
23 Na	782.25	31.29	ppb	0.67	200000.	
25 Mg	20,470.	818.8	ppb	0.68	200000.	
27 Al	82,275.	3,291.	ppb	0.64	200000.	
28 Si	1,297.25	51.89	ppb	127.06	#VALUE!	
29 Si	-2,800.	-112.	ppb	17.20	10000.	LOW
39 K	28,500.	1,140.	ppb	0.14	200000.	
43 Ca	17,840.	713.6	ppb	2.05	#VALUE!	
44 Ca	18,242.5	729.7	ppb	0.74	200000.	
51 V	167.25	6.69	ppb	1.59	1000.	
52 Cr	85.025	3.401	ppb	1.98	2000.	
53 Cr	93.025	3.721	ppb	4.18	#VALUE!	
55 Mn	2,740.	109.6	ppb	1.32	2000.	
56 Fe	79,700.	3,188.	ppb	0.49	#VALUE!	
57 Fe	81,300.	3,252.	ppb	0.78	100000.	
59 Co	45.85	1.834	ppb	2.28	1000.	
60 Ni	65.4	2.616	ppb	1.98	1000.	
63 Cu	68.85	2.754	ppb	2.49	#VALUE!	
65 Cu	69.725	2.789	ppb	2.71	2000.	
66 Zn	265.75	10.63	ppb	1.78	2000.	
68 Zn	298.75	11.95	ppb	3.49	#VALUE!	
75 As	22.21	0.8884	ppb	7.32	1000.	
82 Se	12.425	0.497	ppb	42.41	1000.	
88 Sr	250.	10.	ppb	0.31	2000.	
98 Mo	7.7825	0.3113	ppb	2.19	1000.	
107 Ag	0.417	0.0167	ppb	34.39	100.	
109 Ag	0.4765	0.0191	ppb	20.96	#VALUE!	
111 Cd	-0.9585	-0.0383	ppb	57.69	#VALUE!	
114 Cd	1.793	0.0717	ppb	41.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.275	1.851	ppb	2.67	1000.	
120 Sn	45.425	1.817	ppb	1.45	#VALUE!	
121 Sb	1.0693	0.0428	ppb	13.96	#VALUE!	
123 Sb	1.0545	0.0422	ppb	15.88	1000.	
135 Ba	1,212.25	48.49	ppb	1.00	2000.	
137 Ba	1,230.	49.2	ppb	2.05	#VALUE!	
182 W	0.5493	0.022	ppb	25.35	1000.	
203 Tl	1.9518	0.0781	ppb	14.44	1000.	
205 Tl	1.836	0.0734	ppb	10.06	#VALUE!	
208 Pb	106.475	4.259	ppb	0.95	2000.	
232 Th	64.1	2.564	ppb	0.37	1000.	
238 U	11.225	0.449	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3361653.00	1.63	3440039.00	97.7	69.5 - 120	
45 Sc	3208365.50	0.21	3153680.00	101.7	69.5 - 120	
89 Y	4253051.00	0.57	4049389.00	105.0	69.5 - 120	
159 Tb	4496140.00	0.55	4277856.00	105.1	69.5 - 120	
209 Bi	2505776.30	0.71	2443113.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000207

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\045SMPL.D\045SMPL.D#
Date Acquired: Mar 20 2018 07:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009A
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.96	3.192	ppb	0.76	100.	
11 B	268.65	53.73	ppb	2.13	1000.	
23 Na	12,185.	2,437.	ppb	0.72	200000.	
25 Mg	20,620.	4,124.	ppb	1.36	200000.	
27 Al	78,100.	15,620.	ppb	1.28	200000.	
28 Si	9,250.	1,850.	ppb	3.54	#VALUE!	
29 Si	6,660.	1,332.	ppb	3.18	10000.	
39 K	38,820.	7,764.	ppb	0.27	200000.	
43 Ca	18,505.	3,701.	ppb	2.46	#VALUE!	
44 Ca	18,500.	3,700.	ppb	0.99	200000.	
51 V	202.15	40.43	ppb	0.99	1000.	
52 Cr	129.6	25.92	ppb	1.25	2000.	
53 Cr	152.4	30.48	ppb	2.72	#VALUE!	
55 Mn	2,355.	471.	ppb	1.57	2000.	
56 Fe	72,050.	14,410.	ppb	0.59	#VALUE!	
57 Fe	70,700.	14,140.	ppb	0.55	100000.	
59 Co	51.65	10.33	ppb	1.09	1000.	
60 Ni	80.95	16.19	ppb	3.20	1000.	
63 Cu	92.4	18.48	ppb	1.32	#VALUE!	
65 Cu	92.15	18.43	ppb	1.58	2000.	
66 Zn	332.4	66.48	ppb	2.38	2000.	
68 Zn	365.4	73.08	ppb	2.25	#VALUE!	
75 As	74.3	14.86	ppb	1.81	1000.	
82 Se	58.25	11.65	ppb	3.41	1000.	
88 Sr	277.25	55.45	ppb	1.72	2000.	
98 Mo	61.5	12.3	ppb	1.99	1000.	
107 Ag	11.36	2.272	ppb	0.68	100.	
109 Ag	11.45	2.29	ppb	1.02	#VALUE!	
111 Cd	11.995	2.399	ppb	3.59	#VALUE!	
114 Cd	11.495	2.299	ppb	2.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	101.35	20.27	ppb	2.08	1000.	
120 Sn	100.95	20.19	ppb	1.28	#VALUE!	
121 Sb	11.7	2.34	ppb	2.74	#VALUE!	
123 Sb	11.71	2.342	ppb	2.57	1000.	
135 Ba	1,194.	238.8	ppb	0.69	2000.	
137 Ba	1,186.	237.2	ppb	0.57	#VALUE!	
182 W	57.15	11.43	ppb	1.62	1000.	
203 Tl	12.965	2.593	ppb	0.43	1000.	
205 Tl	12.83	2.566	ppb	1.44	#VALUE!	
208 Pb	112.85	22.57	ppb	0.25	2000.	
232 Th	74.85	14.97	ppb	0.82	1000.	
238 U	23.2	4.64	ppb	0.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3475669.00	1.20	3440039.00	101.0	69.5 - 120	
45 Sc	3308301.50	0.62	3153680.00	104.9	69.5 - 120	
89 Y	4660490.00	1.25	4049389.00	115.1	69.5 - 120	
159 Tb	4632269.00	0.68	4277856.00	108.3	69.5 - 120	
209 Bi	2525568.00	0.50	2443113.00	103.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000208

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\046SMPL.D\046SMPL.D#
Date Acquired: Mar 20 2018 07:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009S
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.65	10.73	ppb	0.66	100.	
11 B	497.9	99.58	ppb	1.96	1000.	
23 Na	8,215.	1,643.	ppb	1.26	200000.	
25 Mg	28,160.	5,632.	ppb	1.98	200000.	
27 Al	107,100.	21,420.	ppb	1.28	200000.	
28 Si	3,690.5	738.1	ppb	15.65	#VALUE!	
29 Si	2,167.5	433.5	ppb	50.38	10000.	
39 K	42,390.	8,478.	ppb	0.47	200000.	
43 Ca	23,575.	4,715.	ppb	1.36	#VALUE!	
44 Ca	23,590.	4,718.	ppb	0.65	200000.	
51 V	629.5	125.9	ppb	0.79	1000.	
52 Cr	271.85	54.37	ppb	1.55	2000.	
53 Cr	295.4	59.08	ppb	1.91	#VALUE!	
55 Mn	3,037.5	607.5	ppb	0.49	2000.	
56 Fe	83,850.	16,770.	ppb	0.95	#VALUE!	
57 Fe	82,200.	16,440.	ppb	0.98	100000.	
59 Co	496.6	99.32	ppb	0.83	1000.	
60 Ni	517.	103.4	ppb	0.94	1000.	
63 Cu	305.65	61.13	ppb	0.86	#VALUE!	
65 Cu	305.9	61.18	ppb	1.74	2000.	
66 Zn	689.	137.8	ppb	1.02	2000.	
68 Zn	785.5	157.1	ppb	1.66	#VALUE!	
75 As	109.5	21.9	ppb	1.80	1000.	
82 Se	88.25	17.65	ppb	2.48	1000.	
88 Sr	729.5	145.9	ppb	0.88	2000.	
98 Mo	91.85	18.37	ppb	0.83	1000.	
107 Ag	45.64	9.128	ppb	1.10	100.	
109 Ag	45.565	9.113	ppb	1.85	#VALUE!	
111 Cd	228.4	45.68	ppb	0.95	#VALUE!	
114 Cd	227.35	45.47	ppb	1.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	508.5	101.7	ppb	0.29	1000.	
120 Sn	507.5	101.5	ppb	1.47	#VALUE!	
121 Sb	23.855	4.771	ppb	0.35	#VALUE!	
123 Sb	24.145	4.829	ppb	1.45	1000.	
135 Ba	3,382.	676.4	ppb	0.39	2000.	
137 Ba	3,403.	680.6	ppb	0.15	#VALUE!	
182 W	48.495	9.699	ppb	1.22	1000.	
203 Tl	100.35	20.07	ppb	0.38	1000.	
205 Tl	100.9	20.18	ppb	0.60	#VALUE!	
208 Pb	211.9	42.38	ppb	0.42	2000.	
232 Th	162.4	32.48	ppb	0.50	1000.	
238 U	114.45	22.89	ppb	0.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3497278.30	0.72	3440039.00	101.7	69.5 - 120	
45 Sc	3330935.50	0.28	3153680.00	105.6	69.5 - 120	
89 Y	4714166.50	0.83	4049389.00	116.4	69.5 - 120	
159 Tb	4686346.00	0.37	4277856.00	109.5	69.5 - 120	
209 Bi	2544921.50	0.51	2443113.00	104.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000209

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\047SMPL.D\047SMPL.D#
Date Acquired: Mar 20 2018 07:35 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009P
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.1	10.62	ppb	2.01	100.	
11 B	498.45	99.69	ppb	1.25	1000.	
23 Na	8,380.	1,676.	ppb	2.49	200000.	
25 Mg	28,825.	5,765.	ppb	1.79	200000.	
27 Al	109,000.	21,800.	ppb	1.29	200000.	
28 Si	3,355.	671.	ppb	5.53	#VALUE!	
29 Si	2,867.	573.4	ppb	4.33	10000.	
39 K	43,035.	8,607.	ppb	0.86	200000.	
43 Ca	23,480.	4,696.	ppb	2.30	#VALUE!	
44 Ca	23,390.	4,678.	ppb	0.46	200000.	
51 V	643.	128.6	ppb	0.28	1000.	
52 Cr	274.8	54.96	ppb	1.23	2000.	
53 Cr	300.8	60.16	ppb	0.75	#VALUE!	
55 Mn	3,077.	615.4	ppb	1.18	2000.	
56 Fe	86,000.	17,200.	ppb	0.70	#VALUE!	
57 Fe	84,200.	16,840.	ppb	1.57	100000.	
59 Co	501.	100.2	ppb	0.79	1000.	
60 Ni	511.5	102.3	ppb	1.37	1000.	
63 Cu	287.55	57.51	ppb	1.57	#VALUE!	
65 Cu	288.35	57.67	ppb	1.81	2000.	
66 Zn	693.5	138.7	ppb	1.31	2000.	
68 Zn	793.5	158.7	ppb	2.57	#VALUE!	
75 As	109.4	21.88	ppb	1.34	1000.	
82 Se	88.15	17.63	ppb	3.21	1000.	
88 Sr	730.	146.	ppb	1.15	2000.	
98 Mo	92.65	18.53	ppb	1.08	1000.	
107 Ag	46.11	9.222	ppb	1.84	100.	
109 Ag	45.235	9.047	ppb	1.77	#VALUE!	
111 Cd	227.1	45.42	ppb	1.33	#VALUE!	
114 Cd	226.35	45.27	ppb	1.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	511.5	102.3	ppb	0.52	1000.	
120 Sn	508.	101.6	ppb	1.66	#VALUE!	
121 Sb	25.72	5.144	ppb	3.63	#VALUE!	
123 Sb	26.21	5.242	ppb	3.37	1000.	
135 Ba	3,405.5	681.1	ppb	1.33	2000.	
137 Ba	3,428.5	685.7	ppb	1.00	#VALUE!	
182 W	49.625	9.925	ppb	1.86	1000.	
203 Tl	101.1	20.22	ppb	1.59	1000.	
205 Tl	100.8	20.16	ppb	2.59	#VALUE!	
208 Pb	215.55	43.11	ppb	1.85	2000.	
232 Th	164.6	32.92	ppb	2.16	1000.	
238 U	114.95	22.99	ppb	2.07	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3684749.00	0.84	3440039.00	107.1	69.5 - 120	
45 Sc	3407614.50	0.66	3153680.00	108.1	69.5 - 120	
89 Y	4811529.50	0.38	4049389.00	118.8	69.5 - 120	
159 Tb	4754731.50	0.80	4277856.00	111.1	69.5 - 120	
209 Bi	2572850.80	1.41	2443113.00	105.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000210

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\048SMPL.D\048SMPL.D#
Date Acquired: Mar 20 2018 07:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-010
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.575	1.115	ppb	2.08	100.	
11 B	60.55	12.11	ppb	2.06	1000.	
23 Na	1,054.5	210.9	ppb	0.79	200000.	
25 Mg	22,660.	4,532.	ppb	0.85	200000.	
27 Al	102,000.	20,400.	ppb	0.71	200000.	
28 Si	2,472.	494.4	ppb	15.06	#VALUE!	
29 Si	2,233.5	446.7	ppb	8.97	10000.	
39 K	28,285.	5,657.	ppb	0.35	200000.	
43 Ca	18,180.	3,636.	ppb	1.42	#VALUE!	
44 Ca	18,245.	3,649.	ppb	0.42	200000.	
51 V	183.45	36.69	ppb	2.51	1000.	
52 Cr	99.55	19.91	ppb	2.08	2000.	
53 Cr	126.9	25.38	ppb	1.40	#VALUE!	
55 Mn	2,522.5	504.5	ppb	1.55	2000.	
56 Fe	88,900.	17,780.	ppb	1.86	#VALUE!	
57 Fe	87,950.	17,590.	ppb	2.44	100000.	
59 Co	45.76	9.152	ppb	2.29	1000.	
60 Ni	70.65	14.13	ppb	0.21	1000.	
63 Cu	73.5	14.7	ppb	3.22	#VALUE!	
65 Cu	74.65	14.93	ppb	1.35	2000.	
66 Zn	323.2	64.64	ppb	2.37	2000.	
68 Zn	356.	71.2	ppb	2.79	#VALUE!	
75 As	23.205	4.641	ppb	4.78	1000.	
82 Se	5.57	1.114	ppb	26.10	1000.	
88 Sr	243.65	48.73	ppb	0.59	2000.	
98 Mo	14.055	2.811	ppb	1.79	1000.	
107 Ag	0.513	0.1026	ppb	8.53	100.	
109 Ag	0.492	0.0984	ppb	8.06	#VALUE!	
111 Cd	2.0875	0.4175	ppb	14.68	#VALUE!	
114 Cd	1.351	0.2702	ppb	1.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.975	9.195	ppb	2.24	1000.	
120 Sn	45.38	9.076	ppb	1.99	#VALUE!	
121 Sb	0.994	0.1988	ppb	3.71	#VALUE!	
123 Sb	1.0865	0.2173	ppb	5.57	1000.	
135 Ba	1,287.5	257.5	ppb	0.92	2000.	
137 Ba	1,275.	255.	ppb	1.98	#VALUE!	
182 W	0.629	0.1258	ppb	7.50	1000.	
203 Tl	2.108	0.4216	ppb	6.21	1000.	
205 Tl	2.1185	0.4237	ppb	2.02	#VALUE!	
208 Pb	124.45	24.89	ppb	1.39	2000.	
232 Th	68.55	13.71	ppb	1.57	1000.	
238 U	13.015	2.603	ppb	0.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3637419.00	1.02	3440039.00	105.7	69.5 - 120	
45 Sc	3452621.80	0.49	3153680.00	109.5	69.5 - 120	
89 Y	4787888.00	1.96	4049389.00	118.2	69.5 - 120	
159 Tb	4773418.50	1.40	4277856.00	111.6	69.5 - 120	
209 Bi	2609734.30	1.43	2443113.00	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000211

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\049SMPL.D\049SMPL.D#
Date Acquired: Mar 20 2018 07:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-011
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.3225	0.8645	ppb	3.46	100.	
11 B	54.55	10.91	ppb	0.97	1000.	
23 Na	1,615.	323.	ppb	0.91	200000.	
25 Mg	19,660.	3,932.	ppb	1.29	200000.	
27 Al	74,350.	14,870.	ppb	2.33	200000.	
28 Si	2,786.5	557.3	ppb	20.74	#VALUE!	
29 Si	2,104.5	420.9	ppb	56.88	10000.	
39 K	28,525.	5,705.	ppb	2.33	200000.	
43 Ca	16,585.	3,317.	ppb	1.63	#VALUE!	
44 Ca	16,805.	3,361.	ppb	1.29	200000.	
51 V	158.65	31.73	ppb	2.04	1000.	
52 Cr	78.9	15.78	ppb	1.78	2000.	
53 Cr	105.9	21.18	ppb	2.52	#VALUE!	
55 Mn	2,193.	438.6	ppb	1.51	2000.	
56 Fe	67,750.	13,550.	ppb	1.78	#VALUE!	
57 Fe	67,000.	13,400.	ppb	2.02	100000.	
59 Co	39.44	7.888	ppb	2.96	1000.	
60 Ni	57.95	11.59	ppb	1.56	1000.	
63 Cu	60.7	12.14	ppb	2.37	#VALUE!	
65 Cu	61.5	12.3	ppb	1.74	2000.	
66 Zn	211.35	42.27	ppb	1.65	2000.	
68 Zn	240.7	48.14	ppb	2.63	#VALUE!	
75 As	20.915	4.183	ppb	3.27	1000.	
82 Se	5.12	1.024	ppb	19.84	1000.	
88 Sr	227.65	45.53	ppb	1.67	2000.	
98 Mo	12.46	2.492	ppb	0.98	1000.	
107 Ag	0.4191	0.0838	ppb	7.85	100.	
109 Ag	0.3985	0.0797	ppb	8.48	#VALUE!	
111 Cd	1.991	0.3982	ppb	8.54	#VALUE!	
114 Cd	1.0105	0.2021	ppb	6.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.04	9.008	ppb	1.55	1000.	
120 Sn	44.88	8.976	ppb	0.23	#VALUE!	
121 Sb	0.909	0.1818	ppb	6.16	#VALUE!	
123 Sb	0.927	0.1854	ppb	2.76	1000.	
135 Ba	1,042.	208.4	ppb	0.17	2000.	
137 Ba	1,037.	207.4	ppb	0.71	#VALUE!	
182 W	0.6865	0.1373	ppb	8.87	1000.	
203 Tl	1.7625	0.3525	ppb	0.99	1000.	
205 Tl	1.711	0.3422	ppb	3.26	#VALUE!	
208 Pb	98.8	19.76	ppb	0.33	2000.	
232 Th	66.45	13.29	ppb	0.72	1000.	
238 U	12.835	2.567	ppb	1.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3589628.80	2.10	3440039.00	104.3	69.5 - 120	
45 Sc	3434065.30	2.14	3153680.00	108.9	69.5 - 120	
89 Y	4787831.00	2.39	4049389.00	118.2	69.5 - 120	
159 Tb	4753736.00	0.44	4277856.00	111.1	69.5 - 120	
209 Bi	2597438.80	0.95	2443113.00	106.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000212

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\050SMPL.D\050SMPL.D#
Date Acquired: Mar 20 2018 07:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-012
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.025	1.005	ppb	1.48	100.	
11 B	60.65	12.13	ppb	1.67	1000.	
23 Na	3,330.	666.	ppb	1.09	200000.	
25 Mg	21,860.	4,372.	ppb	1.13	200000.	
27 Al	88,150.	17,630.	ppb	1.57	200000.	
28 Si	2,531.5	506.3	ppb	8.98	#VALUE!	
29 Si	2,271.5	454.3	ppb	20.03	10000.	
39 K	29,785.	5,957.	ppb	1.20	200000.	
43 Ca	17,355.	3,471.	ppb	0.94	#VALUE!	
44 Ca	17,450.	3,490.	ppb	0.52	200000.	
51 V	186.65	37.33	ppb	0.54	1000.	
52 Cr	93.65	18.73	ppb	0.62	2000.	
53 Cr	121.95	24.39	ppb	0.61	#VALUE!	
55 Mn	2,708.5	541.7	ppb	0.10	2000.	
56 Fe	79,500.	15,900.	ppb	0.87	#VALUE!	
57 Fe	78,500.	15,700.	ppb	0.48	100000.	
59 Co	47.705	9.541	ppb	0.44	1000.	
60 Ni	67.85	13.57	ppb	1.88	1000.	
63 Cu	69.65	13.93	ppb	0.95	#VALUE!	
65 Cu	69.5	13.9	ppb	0.55	2000.	
66 Zn	261.6	52.32	ppb	1.54	2000.	
68 Zn	297.25	59.45	ppb	2.08	#VALUE!	
75 As	22.765	4.553	ppb	4.15	1000.	
82 Se	7.275	1.455	ppb	24.52	1000.	
88 Sr	247.6	49.52	ppb	0.19	2000.	
98 Mo	8.705	1.741	ppb	2.14	1000.	
107 Ag	0.5145	0.1029	ppb	8.93	100.	
109 Ag	0.4363	0.0873	ppb	0.32	#VALUE!	
111 Cd	2.885	0.577	ppb	9.04	#VALUE!	
114 Cd	1.3925	0.2785	ppb	7.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.43	9.086	ppb	0.85	1000.	
120 Sn	44.56	8.912	ppb	1.13	#VALUE!	
121 Sb	1.0315	0.2063	ppb	6.01	#VALUE!	
123 Sb	1.0145	0.2029	ppb	9.65	1000.	
135 Ba	1,144.	228.8	ppb	0.22	2000.	
137 Ba	1,136.	227.2	ppb	0.61	#VALUE!	
182 W	0.687	0.1374	ppb	4.22	1000.	
203 Tl	1.9115	0.3823	ppb	5.52	1000.	
205 Tl	2.017	0.4034	ppb	4.27	#VALUE!	
208 Pb	128.95	25.79	ppb	1.20	2000.	
232 Th	71.7	14.34	ppb	0.88	1000.	
238 U	12.385	2.477	ppb	0.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3768992.00	0.80	3440039.00	109.6	69.5 - 120	
45 Sc	3577980.00	1.42	3153680.00	113.5	69.5 - 120	
89 Y	4867331.50	0.61	4049389.00	120.2	69.5 - 120	
159 Tb	4944018.50	0.72	4277856.00	115.6	69.5 - 120	
209 Bi	2662480.80	1.11	2443113.00	109.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000213

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\051SMPL.D\051SMPL.D#
Date Acquired: Mar 20 2018 07:52 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	142.55	100.	
11 B	0.7242	0.7242	ppb	10.74	1000.	
23 Na	-0.5438	-0.5438	ppb	32.37	200000.	
25 Mg	0.3304	0.3304	ppb	68.13	200000.	
27 Al	1.206	1.206	ppb	73.77	200000.	
28 Si	103.5	103.5	ppb	42.48	#VALUE!	
29 Si	-76.27	-76.27	ppb	18.82	10000.	
39 K	-3.829	-3.829	ppb	31.24	200000.	
43 Ca	0.2972	0.2972	ppb	1356.70	#VALUE!	
44 Ca	2.905	2.905	ppb	106.88	200000.	
51 V	0.0487	0.0487	ppb	101.95	1000.	
52 Cr	-0.0321	-0.0321	ppb	86.92	2000.	
53 Cr	-0.7871	-0.7871	ppb	19.38	#VALUE!	
55 Mn	0.0334	0.0334	ppb	101.50	2000.	
56 Fe	-3.089	-3.089	ppb	90.55	#VALUE!	
57 Fe	-1.017	-1.017	ppb	190.95	100000.	
59 Co	0.0067	0.0067	ppb	50.53	1000.	
60 Ni	0.0009	0.0009	ppb	581.39	1000.	
63 Cu	-0.0031	-0.0031	ppb	252.36	#VALUE!	
65 Cu	0.0059	0.0059	ppb	87.65	2000.	
66 Zn	-0.0291	-0.0291	ppb	175.34	2000.	
68 Zn	-0.1645	-0.1645	ppb	144.98	#VALUE!	
75 As	-0.0256	-0.0256	ppb	723.44	1000.	
82 Se	-0.1218	-0.1218	ppb	191.30	1000.	
88 Sr	0.0026	0.0026	ppb	127.50	2000.	
98 Mo	0.0062	0.0062	ppb	65.60	1000.	
107 Ag	0.0001	0.0001	ppb	3136.20	100.	
109 Ag	0.	0.	ppb	658.23	#VALUE!	
111 Cd	-0.113	-0.113	ppb	8.50	#VALUE!	
114 Cd	-0.0027	-0.0027	ppb	195.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0301	0.0301	ppb	24.58	1000.	
120 Sn	0.0246	0.0246	ppb	31.24	#VALUE!	
121 Sb	-0.0022	-0.0022	ppb	21.00	#VALUE!	
123 Sb	0.0013	0.0013	ppb	548.89	1000.	
135 Ba	0.0263	0.0263	ppb	29.32	2000.	
137 Ba	0.0161	0.0161	ppb	65.86	#VALUE!	
182 W	-0.0032	-0.0032	ppb	308.93	1000.	
203 Tl	0.0009	0.0009	ppb	169.36	1000.	
205 Tl	0.0037	0.0037	ppb	19.21	#VALUE!	
208 Pb	0.0028	0.0028	ppb	87.98	2000.	
232 Th	0.006	0.006	ppb	15.22	1000.	
238 U	0.0015	0.0015	ppb	53.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3201324.80	1.12	3440039.00	93.1	69.5 - 120	
45 Sc	3050145.80	0.47	3153680.00	96.7	69.5 - 120	
89 Y	3990436.30	0.71	4049389.00	98.5	69.5 - 120	
159 Tb	4207286.00	1.09	4277856.00	98.4	69.5 - 120	
209 Bi	2384763.50	0.65	2443113.00	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000214

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\052_CCV.D\052_CCV.D#
Date Acquired: Mar 20 2018 07:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.8	ppb	0.39	25	99.2	
11 B	24.24	ppb	2.06	25	96.96	
23 Na	4,901.	ppb	1.16	5,000	98.02	
25 Mg	4,972.	ppb	0.91	5,000	99.44	
27 Al	486.7	ppb	0.12	500	97.34	
28 Si	446.2	ppb	2.53	500	89.24	
29 Si	258.	ppb	93.14	500	51.6	Fail
39 K	4,950.	ppb	0.90	5,000	99	
43 Ca	4,954.	ppb	0.17	5,000	99.08	
44 Ca	5,108.	ppb	0.68	5,000	102.16	
51 V	24.54	ppb	0.64	25	98.16	
52 Cr	24.78	ppb	0.61	25	99.12	
53 Cr	24.54	ppb	2.25	25	98.16	
55 Mn	24.62	ppb	0.40	25	98.48	
56 Fe	4,954.	ppb	0.80	5,000	99.08	
57 Fe	5,088.	ppb	1.08	5,000	101.76	
59 Co	24.76	ppb	0.33	25	99.04	
60 Ni	25.07	ppb	1.00	25	100.28	
63 Cu	24.88	ppb	1.13	25	99.52	
65 Cu	24.69	ppb	0.68	25	98.76	
66 Zn	24.77	ppb	0.52	25	99.08	
68 Zn	24.78	ppb	1.89	25	99.12	
75 As	24.45	ppb	0.69	25	97.8	
82 Se	24.34	ppb	0.66	25	97.36	
88 Sr	24.63	ppb	1.13	25	98.52	
98 Mo	24.73	ppb	0.39	25	98.92	
107 Ag	25.09	ppb	0.80	25	100.36	
109 Ag	25.04	ppb	1.03	25	100.16	
111 Cd	24.82	ppb	1.66	25	99.28	
114 Cd	24.72	ppb	1.22	25	98.88	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.08	ppb	1.26	25	100.32	
120 Sn	24.8	ppb	1.96	25	99.2	
121 Sb	24.83	ppb	1.79	25	99.32	
123 Sb	24.98	ppb	0.50	25	99.92	
135 Ba	25.28	ppb	1.24	25	101.12	
137 Ba	25.13	ppb	1.04	25	100.52	
182 W	24.4	ppb	0.86	25	97.6	
203 Tl	24.47	ppb	1.48	25	97.88	
205 Tl	24.77	ppb	1.35	25	99.08	
208 Pb	24.66	ppb	0.56	25	98.64	
232 Th	24.62	ppb	1.41	25	98.48	
238 U	24.96	ppb	1.24	25	99.84	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3510059.00	0.51	3440039.00	102.0	80 - 120.4	
45 Sc	3331838.50	1.00	3153680.00	105.6	80 - 120.4	
89 Y	4354529.00	0.38	4049389.00	107.5	80 - 120.4	
159 Tb	4597425.50	0.87	4277856.00	107.5	80 - 120.4	
209 Bi	2554107.00	0.51	2443113.00	104.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000215

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\053_CCB.D\053_CCB.D#
Date Acquired: Mar 20 2018 08:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.001	ppb	184.73	1.00	
11 B	0.655	ppb	9.03	1.00	
23 Na	-0.0829	ppb	105.69	1.00	
25 Mg	0.1894	ppb	7.89	1.00	
27 Al	0.1069	ppb	46.37	1.00	
28 Si	9.758	ppb	1167.20	1.00	
29 Si	-97.33	ppb	32.51	1.00	
39 K	-5.769	ppb	27.61	1.00	
43 Ca	0.0401	ppb	11162.00	1.00	
44 Ca	-0.4565	ppb	756.85	1.00	
51 V	-0.0464	ppb	94.48	1.00	
52 Cr	-0.0151	ppb	250.53	1.00	
53 Cr	0.2521	ppb	37.55	1.00	
55 Mn	0.0241	ppb	13.66	1.00	
56 Fe	-0.664	ppb	412.65	1.00	
57 Fe	-1.594	ppb	37.76	1.00	
59 Co	0.0057	ppb	51.96	1.00	
60 Ni	0.0035	ppb	93.11	1.00	
63 Cu	0.0005	ppb	919.43	1.00	
65 Cu	-0.0027	ppb	136.26	1.00	
66 Zn	-0.0187	ppb	16.20	1.00	
68 Zn	0.0304	ppb	340.68	1.00	
75 As	-0.0677	ppb	224.44	1.00	
82 Se	0.2646	ppb	87.15	1.00	
88 Sr	0.0017	ppb	144.66	1.00	
98 Mo	0.0146	ppb	27.33	1.00	
107 Ag	0.0003	ppb	106.75	1.00	
109 Ag	-0.0001	ppb	1450.40	1.00	
111 Cd	-0.0824	ppb	29.46	1.00	
114 Cd	-0.0017	ppb	103.59	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0322	ppb	2.97	1.00	
120 Sn	0.0292	ppb	3.05	1.00	
121 Sb	0.0006	ppb	624.96	1.00	
123 Sb	-0.0031	ppb	79.82	1.00	
135 Ba	0.0188	ppb	36.51	1.00	
137 Ba	0.0109	ppb	54.80	1.00	
182 W	0.0144	ppb	20.61	1.00	
203 Tl	-0.0018	ppb	62.30	1.00	
205 Tl	0.005	ppb	53.61	1.00	
208 Pb	0.0019	ppb	49.73	1.00	
232 Th	0.0101	ppb	38.77	1.00	
238 U	0.0028	ppb	48.07	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3233053.30	1.25	3440039.00	94.0	79.5 - 120	
45 Sc	3093766.30	1.36	3153680.00	98.1	79.5 - 120	
89 Y	3967324.50	0.99	4049389.00	98.0	79.5 - 120	
159 Tb	4248002.50	1.55	4277856.00	99.3	79.5 - 120	
209 Bi	2411055.50	1.64	2443113.00	98.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000216

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\054SMPL.D\054SMPL.D#
Date Acquired: Mar 20 2018 08:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-013
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.965	1.193	ppb	2.85	100.	
11 B	48.48	9.696	ppb	4.54	1000.	
23 Na	1,923.5	384.7	ppb	2.46	200000.	
25 Mg	23,810.	4,762.	ppb	2.11	200000.	
27 Al	96,950.	19,390.	ppb	2.11	200000.	
28 Si	3,489.5	697.9	ppb	17.08	#VALUE!	
29 Si	2,551.	510.2	ppb	10.45	10000.	
39 K	29,055.	5,811.	ppb	1.82	200000.	
43 Ca	17,950.	3,590.	ppb	1.20	#VALUE!	
44 Ca	18,240.	3,648.	ppb	3.21	200000.	
51 V	181.15	36.23	ppb	1.47	1000.	
52 Cr	96.15	19.23	ppb	2.02	2000.	
53 Cr	117.1	23.42	ppb	2.78	#VALUE!	
55 Mn	3,938.5	787.7	ppb	1.33	2000.	
56 Fe	86,350.	17,270.	ppb	1.60	#VALUE!	
57 Fe	84,000.	16,800.	ppb	1.25	100000.	
59 Co	56.15	11.23	ppb	2.19	1000.	
60 Ni	80.85	16.17	ppb	2.38	1000.	
63 Cu	74.05	14.81	ppb	1.63	#VALUE!	
65 Cu	75.05	15.01	ppb	1.99	2000.	
66 Zn	284.35	56.87	ppb	1.57	2000.	
68 Zn	327.5	65.5	ppb	1.30	#VALUE!	
75 As	23.875	4.775	ppb	3.89	1000.	
82 Se	6.84	1.368	ppb	9.11	1000.	
88 Sr	297.8	59.56	ppb	1.31	2000.	
98 Mo	17.435	3.487	ppb	3.44	1000.	
107 Ag	0.549	0.1098	ppb	6.04	100.	
109 Ag	0.51	0.102	ppb	4.24	#VALUE!	
111 Cd	2.894	0.5788	ppb	5.17	#VALUE!	
114 Cd	2.0085	0.4017	ppb	3.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.76	9.152	ppb	3.06	1000.	
120 Sn	45.61	9.122	ppb	1.92	#VALUE!	
121 Sb	1.069	0.2138	ppb	1.07	#VALUE!	
123 Sb	1.125	0.225	ppb	2.92	1000.	
135 Ba	1,575.5	315.1	ppb	2.43	2000.	
137 Ba	1,572.	314.4	ppb	2.76	#VALUE!	
182 W	0.7375	0.1475	ppb	3.89	1000.	
203 Tl	2.1995	0.4399	ppb	2.03	1000.	
205 Tl	2.327	0.4654	ppb	1.74	#VALUE!	
208 Pb	133.	26.6	ppb	2.08	2000.	
232 Th	78.9	15.78	ppb	2.24	1000.	
238 U	18.945	3.789	ppb	1.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3429092.80	1.14	3440039.00	99.7	69.5 - 120	
45 Sc	3266507.80	1.22	3153680.00	103.6	69.5 - 120	
89 Y	4731228.00	0.80	4049389.00	116.8	69.5 - 120	
159 Tb	4586501.00	1.68	4277856.00	107.2	69.5 - 120	
209 Bi	2506133.30	1.46	2443113.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000217

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\055SMPL.D\055SMPL.D#
Date Acquired: Mar 20 2018 08:09 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.84	2.368	ppb	0.91	100.	
11 B	93.	18.6	ppb	3.72	1000.	
23 Na	5,950.	1,190.	ppb	0.01	200000.	
25 Mg	85,400.	17,080.	ppb	0.41	200000.	
27 Al	207,000.	41,400.	ppb	1.27	200000.	
28 Si	3,020.	604.	ppb	16.57	#VALUE!	
29 Si	1,453.	290.6	ppb	68.07	10000.	
39 K	44,280.	8,856.	ppb	0.12	200000.	
43 Ca	110,850.	22,170.	ppb	0.43	#VALUE!	
44 Ca	110,050.	22,010.	ppb	0.24	200000.	
51 V	385.4	77.08	ppb	0.27	1000.	
52 Cr	214.6	42.92	ppb	1.26	2000.	
53 Cr	239.4	47.88	ppb	1.75	#VALUE!	
55 Mn	4,164.	832.8	ppb	0.32	2000.	
56 Fe	227,350.	45,470.	ppb	1.05	#VALUE!	
57 Fe	221,850.	44,370.	ppb	0.51	100000.	
59 Co	59.65	11.93	ppb	2.67	1000.	
60 Ni	186.35	37.27	ppb	2.38	1000.	
63 Cu	175.95	35.19	ppb	1.24	#VALUE!	
65 Cu	175.05	35.01	ppb	2.39	2000.	
66 Zn	625.5	125.1	ppb	1.39	2000.	
68 Zn	732.	146.4	ppb	0.67	#VALUE!	
75 As	74.05	14.81	ppb	1.11	1000.	
82 Se	5.935	1.187	ppb	25.10	1000.	
88 Sr	645.	129.	ppb	0.67	2000.	
98 Mo	2.881	0.5762	ppb	5.79	1000.	
107 Ag	1.0055	0.2011	ppb	2.41	100.	
109 Ag	0.79	0.158	ppb	2.75	#VALUE!	
111 Cd	4.366	0.8732	ppb	7.48	#VALUE!	
114 Cd	2.193	0.4386	ppb	2.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.8	10.56	ppb	1.04	1000.	
120 Sn	52.3	10.46	ppb	0.67	#VALUE!	
121 Sb	1.7575	0.3515	ppb	6.42	#VALUE!	
123 Sb	1.6965	0.3393	ppb	1.37	1000.	
135 Ba	3,930.	786.	ppb	2.55	2000.	
137 Ba	3,911.5	782.3	ppb	1.36	#VALUE!	
182 W	0.7365	0.1473	ppb	8.79	1000.	
203 Tl	3.739	0.7478	ppb	2.59	1000.	
205 Tl	3.961	0.7922	ppb	0.85	#VALUE!	
208 Pb	179.1	35.82	ppb	0.88	2000.	
232 Th	116.1	23.22	ppb	1.31	1000.	
238 U	12.585	2.517	ppb	0.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3466711.50	1.51	3440039.00	100.8	69.5 - 120	
45 Sc	3372348.00	1.02	3153680.00	106.9	69.5 - 120	
89 Y	4925909.00	0.90	4049389.00	121.6	69.5 - 120	IS Fai
159 Tb	4639470.50	0.51	4277856.00	108.5	69.5 - 120	
209 Bi	2449671.00	0.52	2443113.00	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000218

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\056SMPL.D\056SMPL.D#
Date Acquired: Mar 20 2018 08:13 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-002
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.	2.	ppb	2.14	100.	
11 B	118.35	23.67	ppb	1.08	1000.	
23 Na	9,085.	1,817.	ppb	1.97	200000.	
25 Mg	81,200.	16,240.	ppb	2.25	200000.	
27 Al	205,650.	41,130.	ppb	1.15	200000.	
28 Si	3,370.	674.	ppb	9.01	#VALUE!	
29 Si	3,101.	620.2	ppb	8.71	10000.	
39 K	47,655.	9,531.	ppb	1.99	200000.	
43 Ca	129,850.	25,970.	ppb	1.88	#VALUE!	
44 Ca	128,750.	25,750.	ppb	1.24	200000.	
51 V	363.65	72.73	ppb	2.53	1000.	
52 Cr	191.85	38.37	ppb	3.24	2000.	
53 Cr	224.45	44.89	ppb	4.71	#VALUE!	
55 Mn	2,618.	523.6	ppb	2.38	2000.	
56 Fe	169,750.	33,950.	ppb	1.86	#VALUE!	
57 Fe	165,850.	33,170.	ppb	2.54	100000.	
59 Co	70.65	14.13	ppb	3.12	1000.	
60 Ni	153.05	30.61	ppb	2.42	1000.	
63 Cu	135.75	27.15	ppb	3.15	#VALUE!	
65 Cu	136.85	27.37	ppb	3.71	2000.	
66 Zn	519.	103.8	ppb	2.93	2000.	
68 Zn	619.	123.8	ppb	3.84	#VALUE!	
75 As	17.82	3.564	ppb	4.14	1000.	
82 Se	4.436	0.8872	ppb	12.32	1000.	
88 Sr	603.	120.6	ppb	1.68	2000.	
98 Mo	6.41	1.282	ppb	1.89	1000.	
107 Ag	0.8775	0.1755	ppb	6.56	100.	
109 Ag	0.704	0.1408	ppb	2.76	#VALUE!	
111 Cd	2.9125	0.5825	ppb	8.58	#VALUE!	
114 Cd	0.3059	0.0612	ppb	41.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.05	10.41	ppb	1.63	1000.	
120 Sn	50.9	10.18	ppb	2.98	#VALUE!	
121 Sb	1.7765	0.3553	ppb	2.22	#VALUE!	
123 Sb	1.8115	0.3623	ppb	4.57	1000.	
135 Ba	3,201.	640.2	ppb	0.96	2000.	
137 Ba	3,168.5	633.7	ppb	0.67	#VALUE!	
182 W	0.666	0.1332	ppb	10.43	1000.	
203 Tl	3.5645	0.7129	ppb	0.30	1000.	
205 Tl	3.681	0.7362	ppb	3.37	#VALUE!	
208 Pb	130.1	26.02	ppb	1.27	2000.	
232 Th	97.55	19.51	ppb	0.98	1000.	
238 U	11.07	2.214	ppb	0.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3493442.50	1.13	3440039.00	101.6	69.5 - 120	
45 Sc	3367566.00	1.32	3153680.00	106.8	69.5 - 120	
89 Y	4758029.00	1.23	4049389.00	117.5	69.5 - 120	
159 Tb	4656211.00	1.15	4277856.00	108.8	69.5 - 120	
209 Bi	2478544.50	0.41	2443113.00	101.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000219

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\057SMPL.D\057SMPL.D#
Date Acquired: Mar 20 2018 08:17 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-003
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.1	1.82	ppb	3.36	100.	
11 B	92.7	18.54	ppb	1.01	1000.	
23 Na	5,695.	1,139.	ppb	0.42	200000.	
25 Mg	78,000.	15,600.	ppb	0.63	200000.	
27 Al	171,850.	34,370.	ppb	0.65	200000.	
28 Si	2,724.5	544.9	ppb	4.55	#VALUE!	
29 Si	693.	138.6	ppb	12.31	10000.	
39 K	38,135.	7,627.	ppb	0.80	200000.	
43 Ca	92,100.	18,420.	ppb	0.39	#VALUE!	
44 Ca	91,100.	18,220.	ppb	0.31	200000.	
51 V	296.7	59.34	ppb	1.52	1000.	
52 Cr	163.95	32.79	ppb	1.42	2000.	
53 Cr	192.7	38.54	ppb	1.45	#VALUE!	
55 Mn	883.	176.6	ppb	1.45	2000.	
56 Fe	140,750.	28,150.	ppb	1.61	#VALUE!	
57 Fe	137,700.	27,540.	ppb	1.58	100000.	
59 Co	41.285	8.257	ppb	1.86	1000.	
60 Ni	116.65	23.33	ppb	2.99	1000.	
63 Cu	125.35	25.07	ppb	2.30	#VALUE!	
65 Cu	124.9	24.98	ppb	2.08	2000.	
66 Zn	447.55	89.51	ppb	2.19	2000.	
68 Zn	543.	108.6	ppb	2.70	#VALUE!	
75 As	7.97	1.594	ppb	10.51	1000.	
82 Se	4.2075	0.8415	ppb	47.53	1000.	
88 Sr	502.5	100.5	ppb	1.15	2000.	
98 Mo	1.656	0.3312	ppb	3.78	1000.	
107 Ag	0.838	0.1676	ppb	3.90	100.	
109 Ag	0.6255	0.1251	ppb	12.21	#VALUE!	
111 Cd	1.608	0.3216	ppb	10.05	#VALUE!	
114 Cd	-0.3973	-0.0795	ppb	34.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.365	9.873	ppb	2.31	1000.	
120 Sn	49.995	9.999	ppb	1.99	#VALUE!	
121 Sb	1.228	0.2456	ppb	4.26	#VALUE!	
123 Sb	1.395	0.279	ppb	5.61	1000.	
135 Ba	3,230.5	646.1	ppb	1.46	2000.	
137 Ba	3,208.	641.6	ppb	0.29	#VALUE!	
182 W	0.577	0.1154	ppb	7.47	1000.	
203 Tl	3.169	0.6338	ppb	1.72	1000.	
205 Tl	3.183	0.6366	ppb	3.49	#VALUE!	
208 Pb	109.45	21.89	ppb	1.38	2000.	
232 Th	89.2	17.84	ppb	2.27	1000.	
238 U	9.63	1.926	ppb	0.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3521185.30	1.26	3440039.00	102.4	69.5 - 120	
45 Sc	3388813.00	0.25	3153680.00	107.5	69.5 - 120	
89 Y	4805960.00	1.42	4049389.00	118.7	69.5 - 120	
159 Tb	4660156.00	1.22	4277856.00	108.9	69.5 - 120	
209 Bi	2496320.80	1.32	2443113.00	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000220

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\058SMPL.D\058SMPL.D#
Date Acquired: Mar 20 2018 08:21 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-004
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.15	1.83	ppb	1.93	100.	
11 B	125.15	25.03	ppb	1.09	1000.	
23 Na	2,453.	490.6	ppb	0.14	200000.	
25 Mg	115,850.	23,170.	ppb	0.11	200000.	
27 Al	193,000.	38,600.	ppb	0.59	200000.	
28 Si	3,222.5	644.5	ppb	11.96	#VALUE!	
29 Si	1,956.5	391.3	ppb	45.62	10000.	
39 K	44,360.	8,872.	ppb	0.94	200000.	
43 Ca	1,106,000.	221,200.	ppb	0.75	#VALUE!	
44 Ca	1,108,500.	221,700.	ppb	0.33	200000.	>LDR
51 V	368.25	73.65	ppb	0.49	1000.	
52 Cr	170.65	34.13	ppb	0.97	2000.	
53 Cr	190.15	38.03	ppb	1.57	#VALUE!	
55 Mn	3,018.	603.6	ppb	1.20	2000.	
56 Fe	155,900.	31,180.	ppb	0.78	#VALUE!	
57 Fe	152,750.	30,550.	ppb	0.76	100000.	
59 Co	65.75	13.15	ppb	1.74	1000.	
60 Ni	129.2	25.84	ppb	1.12	1000.	
63 Cu	105.2	21.04	ppb	1.93	#VALUE!	
65 Cu	107.5	21.5	ppb	2.68	2000.	
66 Zn	419.75	83.95	ppb	1.84	2000.	
68 Zn	504.5	100.9	ppb	1.42	#VALUE!	
75 As	27.685	5.537	ppb	1.87	1000.	
82 Se	5.49	1.098	ppb	22.61	1000.	
88 Sr	2,467.5	493.5	ppb	0.87	2000.	
98 Mo	2.343	0.4686	ppb	1.28	1000.	
107 Ag	0.941	0.1882	ppb	5.18	100.	
109 Ag	0.7865	0.1573	ppb	12.83	#VALUE!	
111 Cd	3.909	0.7818	ppb	7.94	#VALUE!	
114 Cd	1.017	0.2034	ppb	12.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.5	10.1	ppb	2.16	1000.	
120 Sn	51.1	10.22	ppb	2.93	#VALUE!	
121 Sb	1.898	0.3796	ppb	1.71	#VALUE!	
123 Sb	2.1005	0.4201	ppb	2.78	1000.	
135 Ba	3,061.5	612.3	ppb	2.72	2000.	
137 Ba	3,062.	612.4	ppb	1.37	#VALUE!	
182 W	0.8	0.16	ppb	5.48	1000.	
203 Tl	3.5465	0.7093	ppb	0.53	1000.	
205 Tl	3.637	0.7274	ppb	2.31	#VALUE!	
208 Pb	121.5	24.3	ppb	2.07	2000.	
232 Th	89.05	17.81	ppb	1.96	1000.	
238 U	18.085	3.617	ppb	1.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3394276.50	0.42	3440039.00	98.7	69.5 - 120	
45 Sc	3346069.30	0.38	3153680.00	106.1	69.5 - 120	
89 Y	4770478.50	0.97	4049389.00	117.8	69.5 - 120	
159 Tb	4587519.00	2.23	4277856.00	107.2	69.5 - 120	
209 Bi	2390729.30	1.56	2443113.00	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000221

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\059SMPL.D\059SMPL.D#
Date Acquired: Mar 20 2018 08:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.535	2.707	ppb	4.43	100.	
11 B	115.45	23.09	ppb	3.47	1000.	
23 Na	1,978.	395.6	ppb	1.99	200000.	
25 Mg	90,550.	18,110.	ppb	0.75	200000.	
27 Al	192,000.	38,400.	ppb	0.84	200000.	
28 Si	2,423.	484.6	ppb	14.72	#VALUE!	
29 Si	642.5	128.5	ppb	35.46	10000.	
39 K	46,010.	9,202.	ppb	1.45	200000.	
43 Ca	394,450.	78,890.	ppb	1.20	#VALUE!	
44 Ca	383,000.	76,600.	ppb	1.19	200000.	
51 V	829.5	165.9	ppb	1.30	1000.	
52 Cr	190.	38.	ppb	1.68	2000.	
53 Cr	206.8	41.36	ppb	1.33	#VALUE!	
55 Mn	6,605.	1,321.	ppb	0.94	2000.	
56 Fe	402,600.	80,520.	ppb	1.12	#VALUE!	
57 Fe	392,000.	78,400.	ppb	0.74	100000.	
59 Co	86.65	17.33	ppb	1.46	1000.	
60 Ni	155.4	31.08	ppb	1.81	1000.	
63 Cu	270.35	54.07	ppb	1.15	#VALUE!	
65 Cu	270.15	54.03	ppb	0.71	2000.	
66 Zn	474.	94.8	ppb	1.34	2000.	
68 Zn	613.5	122.7	ppb	1.80	#VALUE!	
75 As	509.5	101.9	ppb	0.83	1000.	
82 Se	8.005	1.601	ppb	24.10	1000.	
88 Sr	987.	197.4	ppb	1.31	2000.	
98 Mo	21.11	4.222	ppb	1.65	1000.	
107 Ag	0.9865	0.1973	ppb	2.41	100.	
109 Ag	0.729	0.1458	ppb	13.11	#VALUE!	
111 Cd	5.67	1.134	ppb	0.90	#VALUE!	
114 Cd	2.547	0.5094	ppb	4.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.25	10.25	ppb	1.35	1000.	
120 Sn	51.45	10.29	ppb	1.31	#VALUE!	
121 Sb	4.085	0.817	ppb	0.95	#VALUE!	
123 Sb	4.27	0.854	ppb	2.55	1000.	
135 Ba	4,663.	932.6	ppb	1.55	2000.	
137 Ba	4,570.	914.	ppb	1.50	#VALUE!	
182 W	0.9845	0.1969	ppb	5.15	1000.	
203 Tl	3.938	0.7876	ppb	2.21	1000.	
205 Tl	3.822	0.7644	ppb	2.08	#VALUE!	
208 Pb	239.25	47.85	ppb	0.43	2000.	
232 Th	95.15	19.03	ppb	0.63	1000.	
238 U	13.8	2.76	ppb	0.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3419925.00	3.40	3440039.00	99.4	69.5 - 120	
45 Sc	3397404.30	2.27	3153680.00	107.7	69.5 - 120	
89 Y	5121297.00	1.29	4049389.00	126.5	69.5 - 120	IS Fai
159 Tb	4681940.00	1.98	4277856.00	109.4	69.5 - 120	
209 Bi	2469592.30	1.04	2443113.00	101.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000222

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\060SMPL.D\060SMPL.D#
Date Acquired: Mar 20 2018 08:30 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-006
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.925	1.785	ppb	2.40	100.	
11 B	102.55	20.51	ppb	0.31	1000.	
23 Na	7,370.	1,474.	ppb	0.91	200000.	
25 Mg	70,300.	14,060.	ppb	0.26	200000.	
27 Al	168,950.	33,790.	ppb	0.54	200000.	
28 Si	2,250.	450.	ppb	19.73	#VALUE!	
29 Si	272.3	54.46	ppb	47.69	10000.	
39 K	40,020.	8,004.	ppb	1.42	200000.	
43 Ca	106,300.	21,260.	ppb	1.59	#VALUE!	
44 Ca	104,500.	20,900.	ppb	0.67	200000.	
51 V	322.15	64.43	ppb	2.60	1000.	
52 Cr	156.8	31.36	ppb	1.23	2000.	
53 Cr	180.15	36.03	ppb	1.09	#VALUE!	
55 Mn	1,615.	323.	ppb	0.80	2000.	
56 Fe	173,150.	34,630.	ppb	1.23	#VALUE!	
57 Fe	169,650.	33,930.	ppb	1.56	100000.	
59 Co	48.16	9.632	ppb	1.12	1000.	
60 Ni	104.15	20.83	ppb	0.25	1000.	
63 Cu	122.85	24.57	ppb	1.81	#VALUE!	
65 Cu	123.6	24.72	ppb	1.91	2000.	
66 Zn	446.25	89.25	ppb	1.18	2000.	
68 Zn	507.5	101.5	ppb	1.50	#VALUE!	
75 As	47.83	9.566	ppb	2.78	1000.	
82 Se	3.082	0.6164	ppb	12.35	1000.	
88 Sr	481.3	96.26	ppb	1.48	2000.	
98 Mo	3.3985	0.6797	ppb	5.98	1000.	
107 Ag	0.7	0.14	ppb	4.71	100.	
109 Ag	0.502	0.1004	ppb	5.21	#VALUE!	
111 Cd	2.154	0.4308	ppb	8.73	#VALUE!	
114 Cd	-0.65	-0.13	ppb	7.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.35	10.47	ppb	0.49	1000.	
120 Sn	51.8	10.36	ppb	0.71	#VALUE!	
121 Sb	1.4385	0.2877	ppb	6.38	#VALUE!	
123 Sb	1.441	0.2882	ppb	2.73	1000.	
135 Ba	2,129.5	425.9	ppb	0.55	2000.	
137 Ba	2,123.5	424.7	ppb	0.94	#VALUE!	
182 W	0.5455	0.1091	ppb	5.89	1000.	
203 Tl	3.0875	0.6175	ppb	5.92	1000.	
205 Tl	3.06	0.612	ppb	5.62	#VALUE!	
208 Pb	128.55	25.71	ppb	1.39	2000.	
232 Th	81.75	16.35	ppb	1.77	1000.	
238 U	8.9	1.78	ppb	1.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3528646.50	1.31	3440039.00	102.6	69.5 - 120	
45 Sc	3437182.50	0.61	3153680.00	109.0	69.5 - 120	
89 Y	4798755.00	0.64	4049389.00	118.5	69.5 - 120	
159 Tb	4769293.50	0.51	4277856.00	111.5	69.5 - 120	
209 Bi	2529158.00	1.11	2443113.00	103.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000223

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\061SMPL.D\061SMPL.D#
Date Acquired: Mar 20 2018 08:34 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-007
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.91	1.782	ppb	0.45	100.	
11 B	89.85	17.97	ppb	1.51	1000.	
23 Na	5,750.	1,150.	ppb	1.03	200000.	
25 Mg	73,200.	14,640.	ppb	0.17	200000.	
27 Al	167,550.	33,510.	ppb	0.49	200000.	
28 Si	2,941.	588.2	ppb	2.64	#VALUE!	
29 Si	2,232.5	446.5	ppb	9.89	10000.	
39 K	36,525.	7,305.	ppb	1.02	200000.	
43 Ca	153,800.	30,760.	ppb	1.89	#VALUE!	
44 Ca	152,150.	30,430.	ppb	1.03	200000.	
51 V	294.65	58.93	ppb	0.91	1000.	
52 Cr	158.5	31.7	ppb	1.68	2000.	
53 Cr	179.95	35.99	ppb	1.44	#VALUE!	
55 Mn	2,328.5	465.7	ppb	0.88	2000.	
56 Fe	157,200.	31,440.	ppb	1.59	#VALUE!	
57 Fe	153,650.	30,730.	ppb	1.52	100000.	
59 Co	67.05	13.41	ppb	1.87	1000.	
60 Ni	124.5	24.9	ppb	2.36	1000.	
63 Cu	126.15	25.23	ppb	1.48	#VALUE!	
65 Cu	126.8	25.36	ppb	2.76	2000.	
66 Zn	483.65	96.73	ppb	2.25	2000.	
68 Zn	588.	117.6	ppb	2.08	#VALUE!	
75 As	29.58	5.916	ppb	3.76	1000.	
82 Se	4.401	0.8802	ppb	18.76	1000.	
88 Sr	550.	110.	ppb	0.15	2000.	
98 Mo	6.28	1.256	ppb	3.06	1000.	
107 Ag	0.8095	0.1619	ppb	0.78	100.	
109 Ag	0.565	0.113	ppb	4.09	#VALUE!	
111 Cd	2.3775	0.4755	ppb	3.49	#VALUE!	
114 Cd	0.3731	0.0746	ppb	7.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.64	9.928	ppb	1.99	1000.	
120 Sn	49.605	9.921	ppb	2.31	#VALUE!	
121 Sb	1.498	0.2996	ppb	5.55	#VALUE!	
123 Sb	1.518	0.3036	ppb	3.13	1000.	
135 Ba	3,350.5	670.1	ppb	1.99	2000.	
137 Ba	3,359.	671.8	ppb	2.43	#VALUE!	
182 W	0.608	0.1216	ppb	6.35	1000.	
203 Tl	3.1935	0.6387	ppb	5.92	1000.	
205 Tl	3.305	0.661	ppb	4.74	#VALUE!	
208 Pb	135.85	27.17	ppb	1.81	2000.	
232 Th	92.25	18.45	ppb	2.76	1000.	
238 U	9.895	1.979	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3469000.30	1.10	3440039.00	100.8	69.5 - 120	
45 Sc	3370886.80	0.90	3153680.00	106.9	69.5 - 120	
89 Y	4852861.00	0.92	4049389.00	119.8	69.5 - 120	
159 Tb	4748090.00	1.65	4277856.00	111.0	69.5 - 120	
209 Bi	2515027.00	1.78	2443113.00	102.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000224

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\062SMPL.D\062SMPL.D#
Date Acquired: Mar 20 2018 08:38 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLC16IMW1
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	153.25	100.	
11 B	3.426	0.6852	ppb	3.66	1000.	
23 Na	15.22	3.044	ppb	3.55	200000.	
25 Mg	5.65	1.13	ppb	14.14	200000.	
27 Al	6.06	1.212	ppb	8.83	200000.	
28 Si	60.1	12.02	ppb	234.78	#VALUE!	
29 Si	-740.5	-148.1	ppb	8.45	10000.	LOW
39 K	-36.08	-7.216	ppb	13.98	200000.	
43 Ca	-9.385	-1.877	ppb	208.90	#VALUE!	
44 Ca	0.613	0.1226	ppb	1325.40	200000.	
51 V	-0.3325	-0.0665	ppb	117.73	1000.	
52 Cr	0.3374	0.0675	ppb	22.23	2000.	
53 Cr	27.815	5.563	ppb	2.51	#VALUE!	
55 Mn	0.2112	0.0422	ppb	10.59	2000.	
56 Fe	7.93	1.586	ppb	204.04	#VALUE!	
57 Fe	-10.18	-2.036	ppb	48.46	100000.	
59 Co	0.0192	0.0038	ppb	173.76	1000.	
60 Ni	0.033	0.0066	ppb	40.89	1000.	
63 Cu	0.181	0.0362	ppb	8.13	#VALUE!	
65 Cu	0.1674	0.0335	ppb	6.92	2000.	
66 Zn	-0.0274	-0.0055	ppb	850.37	2000.	
68 Zn	-0.8055	-0.1611	ppb	103.41	#VALUE!	
75 As	-0.2123	-0.0425	ppb	228.08	1000.	
82 Se	0.7505	0.1501	ppb	160.49	1000.	
88 Sr	0.0156	0.0031	ppb	149.04	2000.	
98 Mo	0.0076	0.0015	ppb	64.19	1000.	
107 Ag	0.0059	0.0012	ppb	104.38	100.	
109 Ag	0.0021	0.0004	ppb	368.59	#VALUE!	
111 Cd	-0.6015	-0.1203	ppb	24.94	#VALUE!	
114 Cd	-0.0262	-0.0052	ppb	22.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.251	0.2502	ppb	14.37	1000.	
120 Sn	1.298	0.2596	ppb	2.77	#VALUE!	
121 Sb	0.1445	0.0289	ppb	17.23	#VALUE!	
123 Sb	0.1692	0.0338	ppb	2.06	1000.	
135 Ba	0.2076	0.0415	ppb	38.54	2000.	
137 Ba	0.1713	0.0343	ppb	18.91	#VALUE!	
182 W	0.0239	0.0048	ppb	80.25	1000.	
203 Tl	-0.0069	-0.0014	ppb	205.69	1000.	
205 Tl	0.0149	0.003	ppb	76.94	#VALUE!	
208 Pb	0.009	0.0018	ppb	183.59	2000.	
232 Th	0.0352	0.007	ppb	39.44	1000.	
238 U	0.0019	0.0004	ppb	39.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3196755.50	1.30	3440039.00	92.9	69.5 - 120	
45 Sc	3014949.30	0.81	3153680.00	95.6	69.5 - 120	
89 Y	4009428.30	1.40	4049389.00	99.0	69.5 - 120	
159 Tb	4220800.50	0.83	4277856.00	98.7	69.5 - 120	
209 Bi	2375715.50	0.84	2443113.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000225

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\063SMPL.D\063SMPL.D#
Date Acquired: Mar 20 2018 08:42 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLC16IMW1
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.2	10.04	ppb	2.27	100.	
11 B	497.95	99.59	ppb	2.99	1000.	
23 Na	7,475.	1,495.	ppb	1.94	200000.	
25 Mg	5,395.	1,079.	ppb	2.16	200000.	
27 Al	2,101.5	420.3	ppb	1.31	200000.	
28 Si	820.	164.	ppb	43.92	#VALUE!	
29 Si	-316.8	-63.36	ppb	41.27	10000.	
39 K	10,230.	2,046.	ppb	1.71	200000.	
43 Ca	2,909.5	581.9	ppb	0.92	#VALUE!	
44 Ca	2,623.5	524.7	ppb	0.94	200000.	
51 V	518.5	103.7	ppb	1.23	1000.	
52 Cr	201.1	40.22	ppb	1.38	2000.	
53 Cr	225.15	45.03	ppb	1.15	#VALUE!	
55 Mn	516.5	103.3	ppb	0.86	2000.	
56 Fe	990.	198.	ppb	2.32	#VALUE!	
57 Fe	1,019.5	203.9	ppb	0.97	100000.	
59 Co	521.5	104.3	ppb	1.02	1000.	
60 Ni	519.	103.8	ppb	0.87	1000.	
63 Cu	257.25	51.45	ppb	1.89	#VALUE!	
65 Cu	254.75	50.95	ppb	1.49	2000.	
66 Zn	499.	99.8	ppb	1.59	2000.	
68 Zn	571.5	114.3	ppb	2.32	#VALUE!	
75 As	102.55	20.51	ppb	1.62	1000.	
82 Se	101.05	20.21	ppb	1.02	1000.	
88 Sr	525.5	105.1	ppb	0.84	2000.	
98 Mo	103.9	20.78	ppb	0.62	1000.	
107 Ag	52.3	10.46	ppb	2.04	100.	
109 Ag	52.45	10.49	ppb	1.07	#VALUE!	
111 Cd	259.45	51.89	ppb	1.16	#VALUE!	
114 Cd	261.15	52.23	ppb	1.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	519.	103.8	ppb	1.21	1000.	
120 Sn	514.5	102.9	ppb	1.59	#VALUE!	
121 Sb	106.35	21.27	ppb	2.70	#VALUE!	
123 Sb	106.4	21.28	ppb	1.45	1000.	
135 Ba	2,166.	433.2	ppb	1.86	2000.	
137 Ba	2,143.	428.6	ppb	1.82	#VALUE!	
182 W	100.8	20.16	ppb	2.33	1000.	
203 Tl	103.6	20.72	ppb	1.07	1000.	
205 Tl	104.35	20.87	ppb	0.84	#VALUE!	
208 Pb	105.9	21.18	ppb	0.67	2000.	
232 Th	104.65	20.93	ppb	1.28	1000.	
238 U	105.45	21.09	ppb	1.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3418573.50	1.86	3440039.00	99.4	69.5 - 120	
45 Sc	3133190.30	1.21	3153680.00	99.4	69.5 - 120	
89 Y	4220989.00	0.85	4049389.00	104.2	69.5 - 120	
159 Tb	4417883.50	1.37	4277856.00	103.3	69.5 - 120	
209 Bi	2447191.50	0.69	2443113.00	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000226

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\064_CCV.D\064_CCV.D#
Date Acquired: Mar 20 2018 08:47 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.51	ppb	0.82	25	98.04	
11 B	25.26	ppb	1.15	25	101.04	
23 Na	4,858.	ppb	1.44	5,000	97.16	
25 Mg	4,923.	ppb	1.35	5,000	98.46	
27 Al	486.9	ppb	1.06	500	97.38	
28 Si	517.1	ppb	20.11	500	103.42	
29 Si	271.	ppb	96.64	500	54.2	Fail
39 K	4,927.	ppb	0.97	5,000	98.54	
43 Ca	4,877.	ppb	1.88	5,000	97.54	
44 Ca	5,103.	ppb	0.93	5,000	102.06	
51 V	24.81	ppb	0.72	25	99.24	
52 Cr	24.62	ppb	0.34	25	98.48	
53 Cr	23.82	ppb	1.38	25	95.28	
55 Mn	24.48	ppb	0.83	25	97.92	
56 Fe	4,970.	ppb	0.67	5,000	99.4	
57 Fe	5,065.	ppb	0.65	5,000	101.3	
59 Co	24.54	ppb	1.38	25	98.16	
60 Ni	24.59	ppb	1.08	25	98.36	
63 Cu	24.65	ppb	1.56	25	98.6	
65 Cu	24.85	ppb	0.84	25	99.4	
66 Zn	24.53	ppb	0.75	25	98.12	
68 Zn	24.34	ppb	2.11	25	97.36	
75 As	24.9	ppb	0.42	25	99.6	
82 Se	25.01	ppb	1.60	25	100.04	
88 Sr	24.7	ppb	0.59	25	98.8	
98 Mo	24.89	ppb	1.47	25	99.56	
107 Ag	25.14	ppb	0.62	25	100.56	
109 Ag	25.01	ppb	0.17	25	100.04	
111 Cd	24.77	ppb	0.50	25	99.08	
114 Cd	24.86	ppb	0.71	25	99.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.09	ppb	0.81	25	100.36	
120 Sn	24.91	ppb	0.55	25	99.64	
121 Sb	24.76	ppb	0.80	25	99.04	
123 Sb	25.06	ppb	0.70	25	100.24	
135 Ba	25.02	ppb	0.49	25	100.08	
137 Ba	24.74	ppb	0.32	25	98.96	
182 W	24.18	ppb	0.98	25	96.72	
203 Tl	24.37	ppb	0.69	25	97.48	
205 Tl	24.57	ppb	1.17	25	98.28	
208 Pb	24.45	ppb	0.95	25	97.8	
232 Th	24.47	ppb	1.36	25	97.88	
238 U	24.74	ppb	0.95	25	98.96	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3421640.30	1.31	3440039.00	99.5	80 - 120.4	
45 Sc	3259813.30	1.51	3153680.00	103.4	80 - 120.4	
89 Y	4259296.00	0.70	4049389.00	105.2	80 - 120.4	
159 Tb	4504868.00	1.69	4277856.00	105.3	80 - 120.4	
209 Bi	2511937.50	1.37	2443113.00	102.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000227

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\065_CCB.D\065_CCB.D#
Date Acquired: Mar 20 2018 08:51 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0005	ppb	63.34	1.00	
11 B	1.195	ppb	1.36	1.00	
23 Na	-0.5642	ppb	6.86	1.00	
25 Mg	0.0931	ppb	20.16	1.00	
27 Al	0.1025	ppb	50.28	1.00	
28 Si	150.1	ppb	60.43	1.00	
29 Si	-65.67	ppb	77.07	1.00	
39 K	-6.011	ppb	19.76	1.00	
43 Ca	-4.612	ppb	74.76	1.00	
44 Ca	-1.903	ppb	29.95	1.00	
51 V	0.0079	ppb	420.97	1.00	
52 Cr	-0.0202	ppb	155.42	1.00	
53 Cr	-0.5329	ppb	23.76	1.00	
55 Mn	0.0179	ppb	57.97	1.00	
56 Fe	0.2312	ppb	1442.00	1.00	
57 Fe	0.7388	ppb	397.94	1.00	
59 Co	0.0067	ppb	40.68	1.00	
60 Ni	-0.0007	ppb	97.37	1.00	
63 Cu	-0.0071	ppb	83.66	1.00	
65 Cu	-0.0025	ppb	126.64	1.00	
66 Zn	-0.0138	ppb	417.33	1.00	
68 Zn	0.15	ppb	34.26	1.00	
75 As	0.0323	ppb	553.77	1.00	
82 Se	0.0737	ppb	167.32	1.00	
88 Sr	0.0021	ppb	174.56	1.00	
98 Mo	0.0136	ppb	13.61	1.00	
107 Ag	0.0009	ppb	222.87	1.00	
109 Ag	-0.0007	ppb	84.84	1.00	
111 Cd	-0.0948	ppb	43.48	1.00	
114 Cd	0.0013	ppb	248.60	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0329	ppb	50.93	1.00	
120 Sn	0.0437	ppb	34.20	1.00	
121 Sb	0.0045	ppb	18.91	1.00	
123 Sb	0.0019	ppb	83.56	1.00	
135 Ba	0.0149	ppb	86.53	1.00	
137 Ba	0.009	ppb	116.33	1.00	
182 W	0.0109	ppb	33.18	1.00	
203 Tl	0.0004	ppb	454.90	1.00	
205 Tl	0.0027	ppb	20.37	1.00	
208 Pb	0.0015	ppb	236.10	1.00	
232 Th	0.0123	ppb	19.71	1.00	
238 U	0.0026	ppb	5.94	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177765.00	1.82	3440039.00	92.4	79.5 - 120	
45 Sc	3043319.80	1.39	3153680.00	96.5	79.5 - 120	
89 Y	3948527.00	1.15	4049389.00	97.5	79.5 - 120	
159 Tb	4132116.50	0.52	4277856.00	96.6	79.5 - 120	
209 Bi	2347609.80	0.55	2443113.00	96.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000228

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 03/21/2018

FILE NAME: JLC21A **METHOD: ICP-MS**

- ☐ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
JS 3.22.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
_____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17623	03/21/2018	03/21/2019	0 ug/L
Standard 1	MW17625	03/21/2018	04/26/2018	Varies by Element
ICV	MW17628	03/21/2018	06/21/2018	Varies by Element
PQL	MW17629	03/21/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17570	02/16/2018	05/14/2018	Varies by Element
ICSA	MW17630	03/21/2018	03/27/2018	Varies by Element
ICSAB	MW17631	03/21/2018	03/27/2018	Varies by Element
CCV	MW17626	03/21/2018	04/26/2018	Varies by Element
Internal Standard	MW17585	02/22/2018	05/22/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

JS 3.22.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17623 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17623(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL ofMW17623(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC21A	3/21/2018	2:49:00 14:00	MD
200.8 TUNE	1	JLC21A	3/21/2018	2:49:00 14:03	MD
Cal Blank	1	JLC21A	3/21/2018	2:49:00 14:49	MD
Cal Std 6	1	JLC21A	3/21/2018	2:53:00 14:53	MD
ICV	1	JLC21A	3/21/2018	2:56:00 14:56	MD
ICB	1	JLC21A	3/21/2018	3:00:00 15:00	MD
PQL	1	JLC21A	3/21/2018	3:03:00 15:03	MD
RINSE	1	JLC21A	3/21/2018	3:07:00 15:07	MD
ICSA	1	JLC21A	3/21/2018	3:11:00 15:11	MD
ICSAB	1	JLC21A	3/21/2018	3:15:00 15:15	MD
RINSE	1	JLC21A	3/21/2018	3:18:00 15:18	MD
LRS1	1	JLC21A	3/21/2018	3:22:00 15:22	MD
LRS2	1	JLC21A	3/21/2018	3:25:00 15:25	MD
RINSE	1	JLC21A	3/21/2018	3:29:00 15:29	MD
RINSE	1	JLC21A	3/21/2018	3:33:00 15:33	MD
CCV	1	JLC21A	3/21/2018	3:37:00 15:37	MD
CCB	1	JLC21A	3/21/2018	3:40:00 15:40	MD
SL2079-001	5	JLC21A	3/21/2018	3:44:00 15:44	MD
SL2079-001	10	JLC21A	3/21/2018	3:48:00 15:48	MD
SL2079-002	5	JLC21A	3/21/2018	3:52:00 15:52	MD
SL2079-002	10	JLC21A	3/21/2018	3:56:00 15:56	MD
SL2133-001	5	JLC21A	3/21/2018	4:00:00 16:00	MD
SL2133-001	10	JLC21A	3/21/2018	4:04:00 16:04	MD
SL2133-004	10	JLC21A	3/21/2018	4:08:00 16:08	MD
SL2133-005	5	JLC21A	3/21/2018	4:11:00 16:11	MD
SL2133-005	10	JLC21A	3/21/2018	4:15:00 16:15	MD
RINSE	1	JLC21A	3/21/2018	4:19:00 16:19	MD
CCV	1	JLC21A	3/21/2018	4:23:00 16:23	MD
CCB	1	JLC21A	3/21/2018	4:27:00 16:27	MD
PBSLC20IMS1	5	JLC21A	3/21/2018	4:31:00 16:31	MD
LCSOLC20IMS1	5	JLC21A	3/21/2018	4:35:00 16:35	MD
SL2133-008	5	JLC21A	3/21/2018	4:39:00 16:39	MD
SL2133-008	10	JLC21A	3/21/2018	4:43:00 16:43	MD
SL2133-009	5	JLC21A	3/21/2018	4:47:00 16:47	MD
SL2133-009	10	JLC21A	3/21/2018	4:51:00 16:51	MD
SL2133-010	5	JLC21A	3/21/2018	4:55:00 16:55	MD
SL2133-011	5	JLC21A	3/21/2018	4:59:00 16:59	MD
SL2133-012	5	JLC21A	3/21/2018	5:03:00 17:03	MD
RINSE	1	JLC21A	3/21/2018	5:07:00 17:07	MD
CCV	1	JLC21A	3/21/2018	5:11:00 17:11	MD
CCB	1	JLC21A	3/21/2018	5:15:00 17:15	MD
SL2133-012	10	JLC21A	3/21/2018	5:19:00 17:19	MD
SL2133-013	5	JLC21A	3/21/2018	5:23:00 17:23	MD
SL2133-013	10	JLC21A	3/21/2018	5:27:00 17:27	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2133-014	5	JLC21A	3/21/2018	5:31:00 17:31	MD
SL2133-015	5	JLC21A	3/21/2018	5:36:00 17:36	MD
SL2133-016	5	JLC21A	3/21/2018	5:40:00 17:40	MD
SL2133-017	5	JLC21A	3/21/2018	5:44:00 17:44	MD
SL2133-018	5	JLC21A	3/21/2018	5:48:00 17:48	MD
SL2133-019	5	JLC21A	3/21/2018	5:52:00 17:52	MD
RINSE	1	JLC21A	3/21/2018	5:56:00 17:56	MD
CCV	1	JLC21A	3/21/2018	6:00:00 18:00	MD
CCB	1	JLC21A	3/21/2018	6:04:00 18:04	MD
SL2133-019L	25	JLC21A	3/21/2018	6:08:00 18:08	MD
SL2133-019A	5	JLC21A	3/21/2018	6:12:00 18:12	MD
SL2133-019S	5	JLC21A	3/21/2018	6:16:00 18:16	MD
SL2133-019P	5	JLC21A	3/21/2018	6:20:00 18:20	MD
SL2133-021	5	JLC21A	3/21/2018	6:25:00 18:25	MD
SL2133-022	5	JLC21A	3/21/2018	6:29:00 18:29	MD
RINSE	1	JLC21A	3/21/2018	6:33:00 18:33	MD
RINSE	1	JLC21A	3/21/2018	6:37:00 18:37	MD
PBWLC16IMW1	5	JLC21A	3/21/2018	6:41:00 18:41	MD
LCSWLC16IMW1	5	JLC21A	3/21/2018	6:45:00 18:45	MD
CCV	1	JLC21A	3/21/2018	6:49:00 18:49	MD
CCB	1	JLC21A	3/21/2018	6:53:00 18:53	MD
SL2079-014	5	JLC21A	3/21/2018	6:58:00 18:58	MD
SL2081-011	5	JLC21A	3/21/2018	7:02:00 19:02	MD
SL2081-012	5	JLC21A	3/21/2018	7:06:00 19:06	MD
SL2081-001	5	JLC21A	3/21/2018	7:10:00 19:10	MD
RINSE	1	JLC21A	3/21/2018	7:14:00 19:14	MD
SL2081-002	5	JLC21A	3/21/2018	7:18:00 19:18	MD
SL2081-003	5	JLC21A	3/21/2018	7:22:00 19:22	MD
SL2081-004	5	JLC21A	3/21/2018	7:26:00 19:26	MD
RINSE	1	JLC21A	3/21/2018	7:31:00 19:31	MD
RINSE	1	JLC21A	3/21/2018	7:35:00 19:35	MD
CCV	1	JLC21A	3/21/2018	7:39:00 19:39	MD
CCB	1	JLC21A	3/21/2018	7:43:00 19:43	MD
SL2081-005	5	JLC21A	3/21/2018	7:47:00 19:47	MD
SL2081-006	5	JLC21A	3/21/2018	7:51:00 19:51	MD
RINSE	5	JLC21A	3/21/2018	7:55:00 19:55	MD
RINSE	1	JLC21A	3/21/2018	8:00:00 20:00	MD
SL2081-007	1	JLC21A	3/21/2018	8:04:00 20:04	MD
SL2081-008	5	JLC21A	3/21/2018	8:08:00 20:08	MD
SL2081-009	5	JLC21A	3/21/2018	8:12:00 20:12	MD
SL2081-009L	25	JLC21A	3/21/2018	8:16:00 20:16	MD
RINSE	1	JLC21A	3/21/2018	8:21:00 20:21	MD
RINSE	1	JLC21A	3/21/2018	8:25:00 20:25	MD
CCV	1	JLC21A	3/21/2018	8:29:00 20:29	MD
CCB	1	JLC21A	3/21/2018	8:33:00 20:33	MD
SL2081-009A	5	JLC21A	3/21/2018	8:37:00 20:37	MD
SL2081-009S	5	JLC21A	3/21/2018	8:41:00 20:41	MD

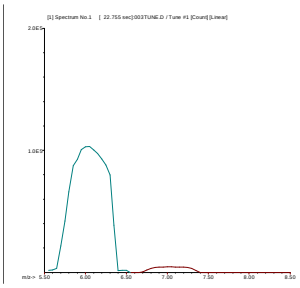
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2081-009P	5	JLC21A	3/21/2018	8:46:00 20:46	MD
RINSE	1	JLC21A	3/21/2018	8:50:00 20:50	MD
RINSE	1	JLC21A	3/21/2018	8:54:00 20:54	MD
SL2081-010	5	JLC21A	3/21/2018	8:58:00 20:58	MD
SL2081-010L	25	JLC21A	3/21/2018	9:02:00 21:02	MD
SL2081-010A	5	JLC21A	3/21/2018	9:06:00 21:06	MD
RINSE	1	JLC21A	3/21/2018	9:11:00 21:11	MD
RINSE	1	JLC21A	3/21/2018	9:15:00 21:15	MD
CCV	1	JLC21A	3/21/2018	9:19:00 21:19	MD
CCB	1	JLC21A	3/21/2018	9:23:00 21:23	MD
SL2081-010S	5	JLC21A	3/21/2018	9:27:00 21:27	MD
SL2081-010P	5	JLC21A	3/21/2018	9:31:00 21:31	MD
RINSE	1	JLC21A	3/21/2018	9:36:00 21:36	MD
RINSE	1	JLC21A	3/21/2018	9:40:00 21:40	MD
RINSE	1	JLC21A	3/21/2018	9:44:00 21:44	MD
RINSE	1	JLC21A	3/21/2018	9:48:00 21:48	MD
CCV	1	JLC21A	3/21/2018	9:52:00 21:52	MD
CCB	1	JLC21A	3/21/2018	9:56:00 21:56	MD
PQL	1	JLC21A	3/21/2018	10:01:0 22:01	MD
CCV	1	JLC21A	3/21/2018	10:05:0 22:05	MD
CCB	1	JLC21A	3/21/2018	10:09:0 22:09	MD

6020 QC Tune Report

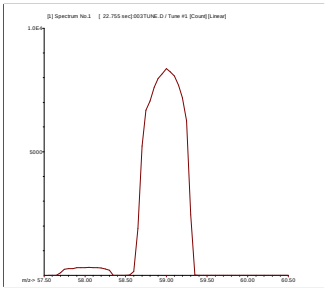
Data File: C:\ICPCHEM\1\DATA\JLC21A.B\003TUNE.D
Date Acquired: Mar 21 2018 02:00 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

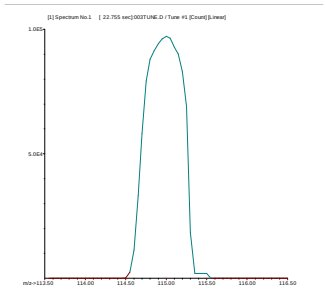
Element	Actual	Required	Flag
7 Li	2.39	5.00	
59 Co	3.27	5.00	
115 In	3.02	5.00	
205 Tl	1.43	5.00	



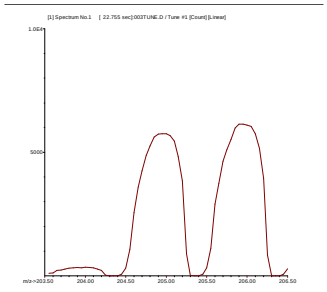
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



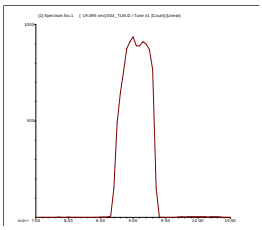
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

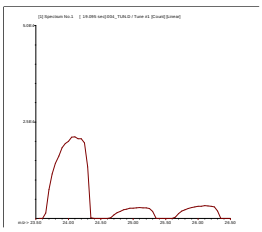
Data File: C:\ICPCHEM\1\DATA\JLC21A.B\004_TUN.D
Date Acquired: Mar 21 2018 02:03 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

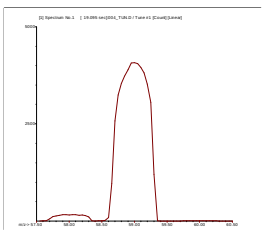
Element	Actual	Required	Flag
9 Be	2.96	5.00	
24 Mg	1.33	5.00	
59 Co	0.91	5.00	
115 In	1.82	5.00	
208 Pb	0.32	5.00	



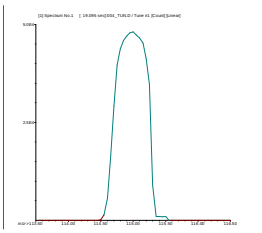
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



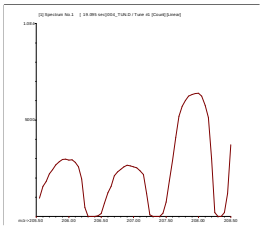
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000234

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.I
Date Acquired: Mar 21 2018 02:49 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 21 2018 02:51 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3258324.00	A	66090.00	2.03
9	Be	19.63	P	0.64	3.27
11	B	327.79	P	17.11	5.22
23	Na	57490.83	P	701.60	1.22
25	Mg	293.36	P	13.34	4.55
27	Al	2234.23	P	809.40	36.23
28	Si	3521686.00	A	82750.00	2.35
29	Si	239140.80	P	3023.00	1.26
39	K	1165045.00	A	2658.00	0.23
43	Ca	188.91	P	40.07	21.21
44	Ca	9065.59	P	256.10	2.83
45	Sc	2896531.00	A	31900.00	1.10
51	V	2182.84	P	318.50	14.59
52	Cr	7059.65	P	74.37	1.05
53	Cr	4915.40	P	201.60	4.10
55	Mn	1837.95	P	171.80	9.35
56	Fe	1687984.00	A	13070.00	0.77
57	Fe	15752.43	P	136.20	0.86
59	Co	206.68	P	6.67	3.23
60	Ni	83.52	P	13.86	16.60
63	Cu	227.79	P	7.70	3.38
65	Cu	93.33	P	23.33	25.00
66	Zn	816.71	P	31.80	3.89
68	Zn	2046.87	P	82.55	4.03
72	Ge		P		
75	As	46.47	P	178.70	384.51
82	Se	-17.32	P	13.87	80.07
88	Sr	166.69	P	88.90	53.33
89	Y	3408097.00	A	40940.00	1.20
98	Mo	34.10	P	1.19	3.48
107	Ag	23.33	P	6.67	28.57
109	Ag	17.78	P	10.71	60.24
111	Cd	941.38	P	37.30	3.96
114	Cd	-4.88	P	11.05	226.28
115	In	3091584.00	A	88800.00	2.87
118	Sn	508.92	P	32.38	6.36
120	Sn	692.26	P	78.35	11.32
121	Sb	61.11	P	21.69	35.49
123	Sb	46.67	P	6.67	14.29
135	Ba	23.33	P	5.77	24.75
137	Ba	41.11	P	18.36	44.66
159	Tb	3559216.00	A	6737.00	0.19
182	W	68.89	P	10.18	14.78
203	Tl	33.33	P	5.77	17.32
205	Tl	60.00	P	13.33	22.22
208	Pb	215.56	P	18.36	8.52
209	Bi	2013556.00	A	14030.00	0.70
232	Th	18.89	P	3.85	20.38
238	U	23.33	P	8.82	37.79

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\018CALI.D\018CALI.D#
Date Acquired: Mar 21 2018 02:53 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 21 2018 02:51 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3603247.00	A	99940.00	2.77
9 Be	122252.80	P	2279.00	1.86
11 B	70527.25	P	1754.00	2.49
23 Na	84276592.00	A	1472000.00	1.75
25 Mg	7013818.00	A	116000.00	1.65
27 Al	6779841.00	A	76430.00	1.13
28 Si	7271384.00	A	56780.00	0.78
29 Si	440572.59	P	2285.00	0.52
39 K	92223552.00	A	1902000.00	2.06
43 Ca	164252.30	P	3256.00	1.98
44 Ca	2655768.00	A	33470.00	1.26
45 Sc	3183892.00	A	85380.00	2.68
51 V	565322.19	P	4518.00	0.80
52 Cr	482915.50	P	5430.00	1.12
53 Cr	61537.11	P	1002.00	1.63
55 Mn	601086.81	P	2155.00	0.36
56 Fe	97498720.00	A	1420000.00	1.46
57 Fe	2357856.00	A	20200.00	0.86
59 Co	515420.69	P	6012.00	1.17
60 Ni	114170.10	P	1959.00	1.72
63 Cu	264768.91	P	3609.00	1.36
65 Cu	123576.80	P	1914.00	1.55
66 Zn	61281.54	P	1047.00	1.71
68 Zn	44813.57	P	662.60	1.48
72 Ge		P		
75 As	58894.91	P	486.80	0.83
82 Se	4060.43	P	70.94	1.75
88 Sr	582212.88	P	3001.00	0.52
89 Y	3766848.00	A	13430.00	0.36
98 Mo	184196.80	P	1174.00	0.64
107 Ag	281747.81	P	3463.00	1.23
109 Ag	266923.69	P	5194.00	1.95
111 Cd	54447.38	P	908.80	1.67
114 Cd	116166.10	P	908.80	0.78
115 In	3408585.00	A	66850.00	1.96
118 Sn	160435.00	P	1496.00	0.93
120 Sn	219188.30	P	1933.00	0.88
121 Sb	197894.50	P	1920.00	0.97
123 Sb	149684.41	P	856.90	0.57
135 Ba	45861.19	P	1043.00	2.27
137 Ba	79255.62	P	665.50	0.84
159 Tb	3941839.00	A	42430.00	1.08
182 W	164848.30	P	1412.00	0.86
203 Tl	148853.80	P	1010.00	0.68
205 Tl	354527.81	P	3821.00	1.08
208 Pb	489175.50	P	5159.00	1.05
209 Bi	2173658.00	A	12650.00	0.58
232 Th	566558.50	P	5805.00	1.02
238 U	549299.00	P	2704.00	0.49

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3603246.50	2.77	3258324.00	110.6	79.5 - 120.4	
45 Sc	3183892.00	2.68	2896530.80	109.9	79.5 - 120.4	
89 Y	3766847.80	0.36	3408096.80	110.5	79.5 - 120.4	
159 Tb	3941839.00	1.08	3559216.30	110.8	79.5 - 120.4	
209 Bi	2173658.30	0.58	2013556.00	108.0	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000236

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\019_ICV.D\019_ICV.D#
Date Acquired: Mar 21 2018 02:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.18	ppb	1.89	20	95.9	
11 B	20.91	ppb	4.85	20	104.55	
23 Na	3,874.	ppb	0.50	4,000	96.85	
25 Mg	3,918.	ppb	0.41	4,000	97.95	
27 Al	396.1	ppb	1.35	400	99.025	
28 Si	333.	ppb	6.37	400	83.25	
29 Si	301.8	ppb	2.20	400	75.45	Fail
39 K	3,903.	ppb	0.78	4,000	97.575	
43 Ca	3,974.	ppb	2.46	4,000	99.35	
44 Ca	4,035.	ppb	0.41	4,000	100.875	
51 V	19.6	ppb	0.99	20	98	
52 Cr	19.7	ppb	0.66	20	98.5	
53 Cr	18.92	ppb	1.31	20	94.6	
55 Mn	19.87	ppb	1.19	20	99.35	
56 Fe	3,966.	ppb	1.63	4,000	99.15	
57 Fe	4,101.	ppb	1.13	4,000	102.525	
59 Co	19.87	ppb	1.02	20	99.35	
60 Ni	19.75	ppb	2.00	20	98.75	
63 Cu	20.08	ppb	0.33	20	100.4	
65 Cu	19.86	ppb	0.84	20	99.3	
66 Zn	19.95	ppb	0.21	20	99.75	
68 Zn	20.27	ppb	1.14	20	101.35	
75 As	19.54	ppb	1.41	20	97.7	
82 Se	20.11	ppb	1.91	20	100.55	
88 Sr	19.42	ppb	0.59	20	97.1	
98 Mo	38.63	ppb	0.57	40	96.575	
107 Ag	19.83	ppb	0.35	20	99.15	
109 Ag	19.78	ppb	0.33	20	98.9	
111 Cd	19.98	ppb	0.41	20	99.9	
114 Cd	20.34	ppb	1.17	20	101.7	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.6	ppb	0.58	20	98	
120 Sn	19.81	ppb	1.08	20	99.05	
121 Sb	19.63	ppb	0.69	20	98.15	
123 Sb	19.58	ppb	1.26	20	97.9	
135 Ba	19.66	ppb	0.16	20	98.3	
137 Ba	19.64	ppb	2.33	20	98.2	
182 W	19.89	ppb	1.09	20	99.45	
203 Tl	20.31	ppb	0.53	20	101.55	
205 Tl	20.14	ppb	0.77	20	100.7	
208 Pb	19.66	ppb	0.59	20	98.3	
232 Th	19.53	ppb	0.67	20	97.65	
238 U	19.67	ppb	0.97	20	98.35	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3535764.00	1.26	3258324.00	108.5	80 - 120.4	
45 Sc	3139516.30	0.66	2896530.80	108.4	80 - 120.4	
89 Y	3661845.00	0.66	3408096.80	107.4	80 - 120.4	
159 Tb	3822979.50	0.32	3559216.30	107.4	80 - 120.4	
209 Bi	2144159.30	0.34	2013556.00	106.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000237

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\020_ICB.D\020_ICB.D#
Date Acquired: Mar 21 2018 03:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0029	ppb	98.71	1.00	
11 B	0.8477	ppb	9.25	1.00	
23 Na	0.1549	ppb	93.87	1.00	
25 Mg	0.0376	ppb	245.91	1.00	
27 Al	0.0188	ppb	143.58	1.00	
28 Si	-28.29	ppb	37.82	1.00	
29 Si	-23.8	ppb	20.21	1.00	
39 K	-0.7772	ppb	221.69	1.00	
43 Ca	1.972	ppb	100.71	1.00	
44 Ca	0.2055	ppb	521.65	1.00	
51 V	-0.0468	ppb	8.68	1.00	
52 Cr	-0.0362	ppb	80.01	1.00	
53 Cr	-0.2041	ppb	16.98	1.00	
55 Mn	-0.0083	ppb	54.57	1.00	
56 Fe	-1.394	ppb	174.18	1.00	
57 Fe	0.8683	ppb	103.69	1.00	
59 Co	-0.0051	ppb	72.33	1.00	
60 Ni	-0.0002	ppb	2263.50	1.00	
63 Cu	0.	ppb	100920.00	1.00	
65 Cu	0.0002	ppb	1688.50	1.00	
66 Zn	-0.0746	ppb	102.31	1.00	
68 Zn	-0.0794	ppb	273.17	1.00	
75 As	-0.2074	ppb	72.61	1.00	
82 Se	-0.0584	ppb	287.13	1.00	
88 Sr	0.0007	ppb	321.85	1.00	
98 Mo	0.0357	ppb	6.39	1.00	
107 Ag	0.0021	ppb	149.39	1.00	
109 Ag	-0.0007	ppb	220.76	1.00	
111 Cd	-0.0348	ppb	112.95	1.00	
114 Cd	0.005	ppb	106.32	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0088	ppb	234.58	1.00	
120 Sn	0.0193	ppb	170.08	1.00	
121 Sb	0.	ppb	60341.00	1.00	
123 Sb	0.0061	ppb	3.98	1.00	
135 Ba	-0.0014	ppb	691.51	1.00	
137 Ba	-0.0008	ppb	1237.40	1.00	
182 W	0.0348	ppb	36.43	1.00	
203 Tl	0.0004	ppb	425.07	1.00	
205 Tl	0.0026	ppb	138.34	1.00	
208 Pb	0.0045	ppb	103.19	1.00	
232 Th	0.0115	ppb	50.32	1.00	
238 U	0.003	ppb	11.02	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3267375.30	0.88	3258324.00	100.3	79.5 - 120	
45 Sc	2898558.50	1.29	2896530.80	100.1	79.5 - 120	
89 Y	3423800.00	0.28	3408096.80	100.5	79.5 - 120	
159 Tb	3561941.30	1.05	3559216.30	100.1	79.5 - 120	
209 Bi	2007829.40	0.05	2013556.00	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000238

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\021_PQL.D\021_PQL.D#
Date Acquired: Mar 21 2018 03:03 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2067	ppb	3.50	0.20	103.35	
11 B	4.771	ppb	2.25	4.00	119.275	
23 Na	208.7	ppb	1.48	200.00	104.35	
25 Mg	19.76	ppb	2.44	20.00	98.8	
27 Al	20.23	ppb	5.90	20.00	101.15	
28 Si	74.3	ppb	50.46	100.00	74.3	
29 Si	73.15	ppb	46.02	100.00	73.15	Fail-DoD
39 K	199.4	ppb	3.14	200.00	99.7	
43 Ca	18.75	ppb	36.11	20.00	93.75	
44 Ca	18.96	ppb	10.19	20.00	94.8	
51 V	0.9697	ppb	2.11	1.00	96.97	
52 Cr	1.006	ppb	3.04	1.00	100.6	
53 Cr	0.8575	ppb	8.01	---	#VALUE!	
55 Mn	0.3969	ppb	2.49	0.40	99.225	
56 Fe	16.7	ppb	27.86	20.00	83.5	
57 Fe	18.68	ppb	4.26	20.00	93.4	
59 Co	0.2052	ppb	4.08	0.20	102.6	
60 Ni	0.4022	ppb	9.15	0.40	100.55	
63 Cu	0.6376	ppb	1.14	0.60	106.267	
65 Cu	0.6142	ppb	5.99	0.60	102.367	
66 Zn	2.007	ppb	2.27	2.00	100.35	
68 Zn	2.103	ppb	2.82	2.00	105.15	
75 As	1.08	ppb	5.28	1.00	108	
82 Se	1.151	ppb	17.40	1.00	115.1	
88 Sr	0.986	ppb	1.90	1.00	98.6	
98 Mo	0.9916	ppb	1.46	1.00	99.16	
107 Ag	0.2086	ppb	10.55	0.20	104.3	
109 Ag	0.2115	ppb	4.59	0.20	105.75	
111 Cd	0.1573	ppb	16.62	0.20	78.65	
114 Cd	0.1911	ppb	10.95	0.20	95.55	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.9831	ppb	4.84	1.00	98.31	
120 Sn	1.054	ppb	5.65	1.00	105.4	
121 Sb	0.1847	ppb	2.91	0.20	92.35	
123 Sb	0.1815	ppb	7.81	0.20	90.75	
135 Ba	0.4134	ppb	9.10	0.40	103.35	
137 Ba	0.3888	ppb	4.33	0.40	97.2	
182 W	1.015	ppb	6.53	1.00	101.5	
203 Tl	0.1992	ppb	10.57	0.20	99.6	
205 Tl	0.1794	ppb	2.36	0.20	89.7	
208 Pb	0.2002	ppb	2.60	0.20	100.1	
232 Th	0.1988	ppb	1.87	0.20	99.4	
238 U	0.2073	ppb	6.89	0.20	103.65	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3317128.80	0.59	3258324.00	101.8	80 - 120.4	
45 Sc	2926928.30	1.41	2896530.80	101.0	80 - 120.4	
89 Y	3470081.80	1.15	3408096.80	101.8	80 - 120.4	
159 Tb	3549764.00	1.26	3559216.30	99.7	80 - 120.4	
209 Bi	2013302.90	1.08	2013556.00	100.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000239

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\022SMPL.D\022SMPL.D#
Date Acquired: Mar 21 2018 03:07 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0003	-0.0003	ppb	615.08	100.	
11 B	0.3999	0.3999	ppb	7.12	1000.	
23 Na	0.0312	0.0312	ppb	45.76	200000.	
25 Mg	0.0414	0.0414	ppb	117.31	200000.	
27 Al	0.038	0.038	ppb	87.16	200000.	
28 Si	-36.36	-36.36	ppb	39.41	#VALUE!	
29 Si	-31.83	-31.83	ppb	58.75	10000.	
39 K	-1.955	-1.955	ppb	99.85	200000.	
43 Ca	4.375	4.375	ppb	63.93	#VALUE!	
44 Ca	-0.9277	-0.9277	ppb	367.04	200000.	
51 V	0.0115	0.0115	ppb	425.26	1000.	
52 Cr	-0.0283	-0.0283	ppb	26.41	2000.	
53 Cr	-0.3117	-0.3117	ppb	12.72	#VALUE!	
55 Mn	0.0006	0.0006	ppb	2155.00	2000.	
56 Fe	1.512	1.512	ppb	260.12	#VALUE!	
57 Fe	0.9285	0.9285	ppb	355.74	100000.	
59 Co	-0.0036	-0.0036	ppb	133.60	1000.	
60 Ni	0.0011	0.0011	ppb	834.77	1000.	
63 Cu	-0.006	-0.006	ppb	112.02	#VALUE!	
65 Cu	0.0033	0.0033	ppb	133.86	2000.	
66 Zn	0.0487	0.0487	ppb	153.87	2000.	
68 Zn	0.0004	0.0004	ppb	20736.00	#VALUE!	
75 As	-0.0126	-0.0126	ppb	1751.60	1000.	
82 Se	-0.023	-0.023	ppb	1545.90	1000.	
88 Sr	-0.0007	-0.0007	ppb	202.57	2000.	
98 Mo	0.0067	0.0067	ppb	48.32	1000.	
107 Ag	0.0013	0.0013	ppb	92.67	100.	
109 Ag	0.0014	0.0014	ppb	63.26	#VALUE!	
111 Cd	-0.0454	-0.0454	ppb	66.70	#VALUE!	
114 Cd	-0.0034	-0.0034	ppb	19.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0021	0.0021	ppb	275.53	1000.	
120 Sn	-0.0097	-0.0097	ppb	177.57	#VALUE!	
121 Sb	-0.0048	-0.0048	ppb	48.96	#VALUE!	
123 Sb	0.0068	0.0068	ppb	109.13	1000.	
135 Ba	0.0064	0.0064	ppb	142.25	2000.	
137 Ba	0.0082	0.0082	ppb	99.70	#VALUE!	
182 W	0.0057	0.0057	ppb	19.96	1000.	
203 Tl	-0.0013	-0.0013	ppb	95.60	1000.	
205 Tl	0.0005	0.0005	ppb	689.06	#VALUE!	
208 Pb	0.0022	0.0022	ppb	33.46	2000.	
232 Th	0.0035	0.0035	ppb	32.27	1000.	
238 U	0.001	0.001	ppb	33.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3306051.80	1.40	3258324.00	101.5	69.5 - 120	
45 Sc	2918086.00	1.46	2896530.80	100.7	69.5 - 120	
89 Y	3412802.30	1.60	3408096.80	100.1	69.5 - 120	
159 Tb	3586763.80	0.42	3559216.30	100.8	69.5 - 120	
209 Bi	2025469.50	0.17	2013556.00	100.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000240

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\023ICSA.D\023ICSA.D#
Date Acquired: Mar 21 2018 03:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0003	ppb	281.19		
11 B	0.6069	ppb	3.39		
23 Na	94,290.	ppb	1.32		
25 Mg	94,340.	ppb	0.91		
27 Al	94,680.	ppb	0.50		
28 Si	-101.3	ppb	7.83		
29 Si	-120.4	ppb	19.75		
39 K	96,960.	ppb	2.40		
43 Ca	99,910.	ppb	2.44		
44 Ca	95,910.	ppb	1.13		
51 V	0.2035	ppb	1.47		
52 Cr	0.9844	ppb	6.53		
53 Cr	0.2676	ppb	51.87		
55 Mn	0.3026	ppb	2.87		
56 Fe	95,300.	ppb	0.81		
57 Fe	93,650.	ppb	0.73		
59 Co	0.0833	ppb	14.82		
60 Ni	-0.1857	ppb	29.13		
63 Cu	3.334	ppb	0.98		
65 Cu	1.041	ppb	3.10		
66 Zn	2.267	ppb	0.72		
68 Zn	0.1677	ppb	16.61		
75 As	0.3312	ppb	35.33		
82 Se	0.3899	ppb	71.56		
88 Sr	0.8918	ppb	0.82		
98 Mo	1,885.	ppb	2.31		
107 Ag	0.0219	ppb	2.27		
109 Ag	0.0262	ppb	8.40		
111 Cd	0.0269	ppb	362.74		
114 Cd	0.0225	ppb	88.52		
115 In	--------	---	--------		
118 Sn	0.0537	ppb	11.20		
120 Sn	0.036	ppb	30.74		
121 Sb	0.0478	ppb	28.24		
123 Sb	0.0595	ppb	11.64		
135 Ba	0.0895	ppb	11.69		
137 Ba	0.0618	ppb	15.85		
182 W	0.25	ppb	10.54		
203 Tl	0.0004	ppb	312.02		
205 Tl	0.0024	ppb	160.38		
208 Pb	0.0996	ppb	4.24		
232 Th	0.0158	ppb	23.47		
238 U	0.0006	ppb	77.14		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3347740.00	1.77	3258324.00	102.7	69.5 - 120.4	
45 Sc	3119891.50	0.79	2896530.80	107.7	69.5 - 120.4	
89 Y	3700617.50	0.77	3408096.80	108.6	69.5 - 120.4	
159 Tb	3812625.80	1.34	3559216.30	107.1	69.5 - 120.4	
209 Bi	1950316.00	1.59	2013556.00	96.9	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000241

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\024ICSB.D\024ICSB.D#
Date Acquired: Mar 21 2018 03:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.	ppb	1.14	20.00	79.5 - 120	
11 B	19.95	ppb	1.93	20.00	79.5 - 120	
23 Na	92,720.	ppb	0.37	100000.00	79.5 - 120	
25 Mg	92,740.	ppb	0.20	100000.00	79.5 - 120	
27 Al	93,340.	ppb	0.45	100000.00	79.5 - 120	
28 Si	421.8	ppb	9.38	---	##### - #####	
29 Si	412.6	ppb	7.22	---	##### - #####	
39 K	95,980.	ppb	0.52	100000.00	79.5 - 120	
43 Ca	98,840.	ppb	0.60	100000.00	79.5 - 120	
44 Ca	95,000.	ppb	0.98	100000.00	79.5 - 120	
51 V	20.06	ppb	1.45	20.00	79.5 - 120	
52 Cr	20.49	ppb	2.09	20.00	79.5 - 120	
53 Cr	20.18	ppb	2.51	---	##### - #####	
55 Mn	19.79	ppb	1.31	20.00	79.5 - 120	
56 Fe	94,440.	ppb	1.32	100000.00	79.5 - 120	
57 Fe	92,240.	ppb	1.10	100000.00	79.5 - 120	
59 Co	19.25	ppb	1.84	20.00	79.5 - 120	
60 Ni	18.68	ppb	3.22	20.00	79.5 - 120	
63 Cu	21.83	ppb	0.70	20.00	79.5 - 120	
65 Cu	19.67	ppb	2.38	20.00	79.5 - 120	
66 Zn	20.86	ppb	1.70	20.00	79.5 - 120	
68 Zn	18.83	ppb	3.61	20.00	79.5 - 120	
75 As	19.96	ppb	2.82	20.00	79.5 - 120	
82 Se	19.42	ppb	1.85	20.00	79.5 - 120	
88 Sr	20.76	ppb	1.39	20.00	79.5 - 120	
98 Mo	1,887.	ppb	1.48	2000.00	79.5 - 120	
107 Ag	18.56	ppb	1.57	20.00	79.5 - 120	
109 Ag	18.68	ppb	2.28	20.00	79.5 - 120	
111 Cd	18.86	ppb	2.01	20.00	79.5 - 120	
114 Cd	18.85	ppb	2.41	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	19.69	ppb	1.20	20.00	79.5 - 120	
120 Sn	19.86	ppb	1.03	20.00	79.5 - 120	
121 Sb	20.01	ppb	0.64	20.00	79.5 - 120	
123 Sb	19.87	ppb	1.07	20.00	79.5 - 120	
135 Ba	20.07	ppb	0.64	20.00	79.5 - 120	
137 Ba	20.18	ppb	0.80	20.00	79.5 - 120	
182 W	20.38	ppb	1.33	20.00	79.5 - 120	
203 Tl	21.05	ppb	0.33	20.00	79.5 - 120	
205 Tl	20.98	ppb	1.30	20.00	79.5 - 120	
208 Pb	20.93	ppb	1.69	20.00	79.5 - 120	
232 Th	22.17	ppb	0.78	20.00	79.5 - 120	
238 U	21.96	ppb	1.20	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3341666.80	1.26	3258324.00	102.6	69.5 - 120	
45 Sc	3164406.50	0.74	2896530.80	109.2	69.5 - 120	
89 Y	3765629.50	1.38	3408096.80	110.5	69.5 - 120	
159 Tb	3917073.80	0.61	3559216.30	110.1	69.5 - 120	
209 Bi	1995605.10	1.04	2013556.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000242

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 21 2018 03:18 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0026	-0.0026	ppb	8.82	100.	
11 B	0.4087	0.4087	ppb	8.06	1000.	
23 Na	2.001	2.001	ppb	8.51	200000.	
25 Mg	0.5031	0.5031	ppb	30.03	200000.	
27 Al	0.6251	0.6251	ppb	9.60	200000.	
28 Si	-37.57	-37.57	ppb	115.73	#VALUE!	
29 Si	-98.68	-98.68	ppb	41.69	10000.	
39 K	-5.977	-5.977	ppb	26.25	200000.	
43 Ca	6.202	6.202	ppb	60.34	#VALUE!	
44 Ca	1.445	1.445	ppb	172.60	200000.	
51 V	-0.0421	-0.0421	ppb	132.87	1000.	
52 Cr	-0.0769	-0.0769	ppb	12.92	2000.	
53 Cr	-0.3081	-0.3081	ppb	71.50	#VALUE!	
55 Mn	-0.0291	-0.0291	ppb	10.65	2000.	
56 Fe	-7.735	-7.735	ppb	53.72	#VALUE!	
57 Fe	-9.107	-9.107	ppb	9.76	100000.	
59 Co	-0.0094	-0.0094	ppb	77.66	1000.	
60 Ni	-0.0143	-0.0143	ppb	22.76	1000.	
63 Cu	-0.0005	-0.0005	ppb	2112.60	#VALUE!	
65 Cu	0.0073	0.0073	ppb	82.36	2000.	
66 Zn	-0.0193	-0.0193	ppb	352.70	2000.	
68 Zn	-0.1805	-0.1805	ppb	42.00	#VALUE!	
75 As	-0.0561	-0.0561	ppb	164.73	1000.	
82 Se	0.2218	0.2218	ppb	115.01	1000.	
88 Sr	-0.0042	-0.0042	ppb	133.88	2000.	
98 Mo	0.386	0.386	ppb	8.26	1000.	
107 Ag	0.0006	0.0006	ppb	378.42	100.	
109 Ag	0.002	0.002	ppb	56.92	#VALUE!	
111 Cd	-0.0825	-0.0825	ppb	21.47	#VALUE!	
114 Cd	-0.0006	-0.0006	ppb	78.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0168	-0.0168	ppb	13.21	1000.	
120 Sn	-0.0115	-0.0115	ppb	24.67	#VALUE!	
121 Sb	0.0029	0.0029	ppb	172.37	#VALUE!	
123 Sb	0.0094	0.0094	ppb	67.38	1000.	
135 Ba	-0.0043	-0.0043	ppb	281.74	2000.	
137 Ba	-0.0074	-0.0074	ppb	104.95	#VALUE!	
182 W	-0.0036	-0.0036	ppb	204.41	1000.	
203 Tl	0.0016	0.0016	ppb	284.24	1000.	
205 Tl	0.0024	0.0024	ppb	120.03	#VALUE!	
208 Pb	0.0034	0.0034	ppb	58.68	2000.	
232 Th	0.0058	0.0058	ppb	17.89	1000.	
238 U	0.0004	0.0004	ppb	110.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3042353.00	1.59	3258324.00	93.4	69.5 - 120	
45 Sc	2789156.50	1.45	2896530.80	96.3	69.5 - 120	
89 Y	3449532.30	1.70	3408096.80	101.2	69.5 - 120	
159 Tb	3607730.80	1.78	3559216.30	101.4	69.5 - 120	
209 Bi	2027257.90	1.51	2013556.00	100.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000243

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 21 2018 03:22 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	104.8	104.8	ppb	3.38	100.	>LDR
11 B	606.9	606.9	ppb	0.79	1000.	
23 Na	2.843	2.843	ppb	10.94	200000.	
25 Mg	1.054	1.054	ppb	2.50	200000.	
27 Al	0.8325	0.8325	ppb	16.17	200000.	
28 Si	-95.11	-95.11	ppb	29.90	#VALUE!	
29 Si	-180.4	-180.4	ppb	5.53	10000.	LOW
39 K	-10.87	-10.87	ppb	12.30	200000.	
43 Ca	1,568.	1,568.	ppb	3.83	#VALUE!	
44 Ca	199.5	199.5	ppb	3.29	200000.	
51 V	1,026.	1,026.	ppb	1.42	1000.	>LDR
52 Cr	2,063.	2,063.	ppb	1.06	2000.	>LDR
53 Cr	2,112.	2,112.	ppb	1.61	#VALUE!	
55 Mn	2,060.	2,060.	ppb	0.77	2000.	>LDR
56 Fe	-15.48	-15.48	ppb	31.85	#VALUE!	
57 Fe	-14.11	-14.11	ppb	4.72	100000.	
59 Co	1,030.	1,030.	ppb	1.59	1000.	>LDR
60 Ni	1,039.	1,039.	ppb	1.39	1000.	>LDR
63 Cu	2,050.	2,050.	ppb	1.52	#VALUE!	
65 Cu	2,050.	2,050.	ppb	1.33	2000.	>LDR
66 Zn	2,087.	2,087.	ppb	1.73	2000.	>LDR
68 Zn	2,132.	2,132.	ppb	1.40	#VALUE!	
75 As	1,073.	1,073.	ppb	1.74	1000.	>LDR
82 Se	1,091.	1,091.	ppb	1.75	1000.	>LDR
88 Sr	2,075.	2,075.	ppb	0.94	2000.	>LDR
98 Mo	1,044.	1,044.	ppb	1.17	1000.	>LDR
107 Ag	110.5	110.5	ppb	1.99	100.	>LDR
109 Ag	110.5	110.5	ppb	1.16	#VALUE!	
111 Cd	1,107.	1,107.	ppb	0.40	#VALUE!	
114 Cd	1,096.	1,096.	ppb	1.08	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,070.	1,070.	ppb	1.63	1000.	>LDR
120 Sn	1,063.	1,063.	ppb	1.95	#VALUE!	
121 Sb	1,063.	1,063.	ppb	1.47	#VALUE!	
123 Sb	1,077.	1,077.	ppb	1.67	1000.	>LDR
135 Ba	2,206.	2,206.	ppb	1.02	2000.	>LDR
137 Ba	2,151.	2,151.	ppb	1.21	#VALUE!	
182 W	1,057.	1,057.	ppb	1.24	1000.	>LDR
203 Tl	1,055.	1,055.	ppb	1.30	1000.	>LDR
205 Tl	1,037.	1,037.	ppb	0.58	#VALUE!	
208 Pb	2,112.	2,112.	ppb	1.05	2000.	>LDR
232 Th	1,030.	1,030.	ppb	0.90	1000.	>LDR
238 U	1,029.	1,029.	ppb	1.12	1000.	>LDR

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3238724.80	1.64	3258324.00	99.4	69.5 - 120	
45 Sc	2919048.30	0.63	2896530.80	100.8	69.5 - 120	
89 Y	3593705.00	0.89	3408096.80	105.4	69.5 - 120	
159 Tb	3777327.80	1.19	3559216.30	106.1	69.5 - 120	
209 Bi	2111254.80	0.56	2013556.00	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

22 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000244

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 21 2018 03:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0074	0.0074	ppb	44.60	100.	
11 B	7.475	7.475	ppb	14.27	1000.	
23 Na	198,000.	198,000.	ppb	2.80	200000.	
25 Mg	193,400.	193,400.	ppb	1.39	200000.	
27 Al	197,400.	197,400.	ppb	1.18	200000.	
28 Si	11,510.	11,510.	ppb	1.60	#VALUE!	
29 Si	12,250.	12,250.	ppb	0.48	10000.	>LDR
39 K	203,300.	203,300.	ppb	0.65	200000.	>LDR
43 Ca	205,400.	205,400.	ppb	0.85	#VALUE!	
44 Ca	201,000.	201,000.	ppb	0.11	200000.	>LDR
51 V	0.1651	0.1651	ppb	32.74	1000.	
52 Cr	3.171	3.171	ppb	3.25	2000.	
53 Cr	1.989	1.989	ppb	4.91	#VALUE!	
55 Mn	8.328	8.328	ppb	1.87	2000.	
56 Fe	102,600.	102,600.	ppb	2.97	#VALUE!	
57 Fe	100,700.	100,700.	ppb	2.31	100000.	>LDR
59 Co	2.891	2.891	ppb	2.52	1000.	
60 Ni	3.421	3.421	ppb	2.88	1000.	
63 Cu	8.963	8.963	ppb	0.98	#VALUE!	
65 Cu	3.056	3.056	ppb	0.32	2000.	
66 Zn	4.418	4.418	ppb	2.49	2000.	
68 Zn	2.107	2.107	ppb	2.86	#VALUE!	
75 As	0.4801	0.4801	ppb	25.75	1000.	
82 Se	0.4807	0.4807	ppb	42.44	1000.	
88 Sr	7.09	7.09	ppb	1.74	2000.	
98 Mo	0.6318	0.6318	ppb	3.74	1000.	
107 Ag	0.3756	0.3756	ppb	7.71	100.	
109 Ag	0.3606	0.3606	ppb	1.57	#VALUE!	
111 Cd	-0.0657	-0.0657	ppb	34.44	#VALUE!	
114 Cd	-0.0016	-0.0016	ppb	646.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2318	0.2318	ppb	9.66	1000.	
120 Sn	0.2382	0.2382	ppb	10.49	#VALUE!	
121 Sb	0.1123	0.1123	ppb	8.41	#VALUE!	
123 Sb	0.125	0.125	ppb	13.38	1000.	
135 Ba	0.3084	0.3084	ppb	5.91	2000.	
137 Ba	0.292	0.292	ppb	7.39	#VALUE!	
182 W	0.444	0.444	ppb	6.37	1000.	
203 Tl	0.063	0.063	ppb	12.88	1000.	
205 Tl	0.0576	0.0576	ppb	13.56	#VALUE!	
208 Pb	0.627	0.627	ppb	1.32	2000.	
232 Th	0.236	0.236	ppb	52.84	1000.	
238 U	0.1374	0.1374	ppb	6.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3250823.50	1.22	3258324.00	99.8	69.5 - 120	
45 Sc	3122074.50	1.09	2896530.80	107.8	69.5 - 120	
89 Y	3549373.80	0.63	3408096.80	104.1	69.5 - 120	
159 Tb	3618448.80	0.70	3559216.30	101.7	69.5 - 120	
209 Bi	1783804.40	0.71	2013556.00	88.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000245

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\028SMPL.D\028SMPL.D#
Date Acquired: Mar 21 2018 03:29 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	111.31	100.	
11 B	3.999	3.999	ppb	10.69	1000.	
23 Na	9.086	9.086	ppb	11.90	200000.	
25 Mg	1.464	1.464	ppb	10.34	200000.	
27 Al	1.163	1.163	ppb	6.88	200000.	
28 Si	-1.739	-1.739	ppb	1622.80	#VALUE!	
29 Si	-87.53	-87.53	ppb	19.11	10000.	
39 K	-2.213	-2.213	ppb	5.07	200000.	
43 Ca	1.701	1.701	ppb	94.30	#VALUE!	
44 Ca	-0.169	-0.169	ppb	1301.80	200000.	
51 V	0.0037	0.0037	ppb	1907.50	1000.	
52 Cr	-0.0139	-0.0139	ppb	103.52	2000.	
53 Cr	0.4994	0.4994	ppb	42.65	#VALUE!	
55 Mn	-0.0208	-0.0208	ppb	27.80	2000.	
56 Fe	-0.9655	-0.9655	ppb	275.19	#VALUE!	
57 Fe	-7.428	-7.428	ppb	22.86	100000.	
59 Co	-0.0036	-0.0036	ppb	39.64	1000.	
60 Ni	0.0113	0.0113	ppb	194.22	1000.	
63 Cu	0.0176	0.0176	ppb	32.84	#VALUE!	
65 Cu	0.0193	0.0193	ppb	70.31	2000.	
66 Zn	0.0453	0.0453	ppb	68.49	2000.	
68 Zn	-0.1188	-0.1188	ppb	67.10	#VALUE!	
75 As	-0.0689	-0.0689	ppb	150.09	1000.	
82 Se	0.0117	0.0117	ppb	408.69	1000.	
88 Sr	0.0004	0.0004	ppb	302.03	2000.	
98 Mo	0.0909	0.0909	ppb	11.29	1000.	
107 Ag	0.0013	0.0013	ppb	50.29	100.	
109 Ag	0.0016	0.0016	ppb	25.42	#VALUE!	
111 Cd	-0.0826	-0.0826	ppb	2.41	#VALUE!	
114 Cd	-0.0037	-0.0037	ppb	45.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0237	0.0237	ppb	22.64	1000.	
120 Sn	0.0331	0.0331	ppb	41.78	#VALUE!	
121 Sb	0.0104	0.0104	ppb	59.38	#VALUE!	
123 Sb	0.0162	0.0162	ppb	19.22	1000.	
135 Ba	0.0078	0.0078	ppb	87.84	2000.	
137 Ba	0.0044	0.0044	ppb	77.11	#VALUE!	
182 W	0.1137	0.1137	ppb	4.98	1000.	
203 Tl	0.0117	0.0117	ppb	37.37	1000.	
205 Tl	0.0122	0.0122	ppb	7.43	#VALUE!	
208 Pb	0.0121	0.0121	ppb	33.13	2000.	
232 Th	0.01	0.01	ppb	28.45	1000.	
238 U	0.0118	0.0118	ppb	12.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121181.50	0.33	3258324.00	95.8	69.5 - 120	
45 Sc	2857302.00	0.67	2896530.80	98.6	69.5 - 120	
89 Y	3409555.80	0.25	3408096.80	100.0	69.5 - 120	
159 Tb	3582643.30	0.72	3559216.30	100.7	69.5 - 120	
209 Bi	2016305.10	0.56	2013556.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000246

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\029SMPL.D\029SMPL.D#
Date Acquired: Mar 21 2018 03:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0006	ppb	23.53	100.	
11 B	2.269	2.269	ppb	3.72	1000.	
23 Na	4.301	4.301	ppb	11.05	200000.	
25 Mg	0.9587	0.9587	ppb	2.85	200000.	
27 Al	0.6605	0.6605	ppb	17.23	200000.	
28 Si	-9.889	-9.889	ppb	256.95	#VALUE!	
29 Si	-88.13	-88.13	ppb	29.58	10000.	
39 K	-5.729	-5.729	ppb	14.04	200000.	
43 Ca	1.214	1.214	ppb	483.61	#VALUE!	
44 Ca	-0.7342	-0.7342	ppb	154.86	200000.	
51 V	-0.0303	-0.0303	ppb	112.44	1000.	
52 Cr	-0.0141	-0.0141	ppb	206.76	2000.	
53 Cr	0.3269	0.3269	ppb	32.37	#VALUE!	
55 Mn	-0.0212	-0.0212	ppb	14.19	2000.	
56 Fe	-3.354	-3.354	ppb	30.05	#VALUE!	
57 Fe	-5.989	-5.989	ppb	35.13	100000.	
59 Co	-0.0024	-0.0024	ppb	289.87	1000.	
60 Ni	-0.0102	-0.0102	ppb	87.90	1000.	
63 Cu	0.0087	0.0087	ppb	64.02	#VALUE!	
65 Cu	0.0244	0.0244	ppb	24.24	2000.	
66 Zn	0.0028	0.0028	ppb	844.56	2000.	
68 Zn	-0.1722	-0.1722	ppb	60.57	#VALUE!	
75 As	-0.1285	-0.1285	ppb	8.66	1000.	
82 Se	0.3781	0.3781	ppb	85.22	1000.	
88 Sr	0.0019	0.0019	ppb	286.63	2000.	
98 Mo	0.0535	0.0535	ppb	7.30	1000.	
107 Ag	0.0027	0.0027	ppb	161.44	100.	
109 Ag	0.0011	0.0011	ppb	169.22	#VALUE!	
111 Cd	-0.0947	-0.0947	ppb	8.40	#VALUE!	
114 Cd	-0.0002	-0.0002	ppb	3956.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0147	0.0147	ppb	49.11	1000.	
120 Sn	0.0442	0.0442	ppb	14.21	#VALUE!	
121 Sb	0.0044	0.0044	ppb	104.87	#VALUE!	
123 Sb	0.0059	0.0059	ppb	21.99	1000.	
135 Ba	0.0089	0.0089	ppb	134.80	2000.	
137 Ba	0.0027	0.0027	ppb	170.13	#VALUE!	
182 W	0.0511	0.0511	ppb	21.43	1000.	
203 Tl	0.0124	0.0124	ppb	55.67	1000.	
205 Tl	0.0037	0.0037	ppb	82.58	#VALUE!	
208 Pb	0.0102	0.0102	ppb	52.58	2000.	
232 Th	0.0074	0.0074	ppb	18.62	1000.	
238 U	0.0031	0.0031	ppb	43.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3220760.00	2.97	3258324.00	98.8	69.5 - 120	
45 Sc	2851688.50	0.56	2896530.80	98.5	69.5 - 120	
89 Y	3454540.00	0.76	3408096.80	101.4	69.5 - 120	
159 Tb	3601285.30	0.53	3559216.30	101.2	69.5 - 120	
209 Bi	2023470.80	1.56	2013556.00	100.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000247

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\030_CCV.D\030_CCV.D#
Date Acquired: Mar 21 2018 03:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.09	ppb	0.78	25	100.36	
11 B	26.68	ppb	2.89	25	106.72	
23 Na	4,971.	ppb	0.84	5,000	99.42	
25 Mg	5,069.	ppb	1.29	5,000	101.38	
27 Al	504.1	ppb	0.80	500	100.82	
28 Si	453.2	ppb	1.28	500	90.64	
29 Si	392.2	ppb	2.22	500	78.44	Fail
39 K	5,069.	ppb	0.25	5,000	101.38	
43 Ca	5,179.	ppb	1.24	5,000	103.58	
44 Ca	5,204.	ppb	0.96	5,000	104.08	
51 V	24.8	ppb	1.40	25	99.2	
52 Cr	24.94	ppb	1.58	25	99.76	
53 Cr	25.09	ppb	0.43	25	100.36	
55 Mn	25.35	ppb	1.32	25	101.4	
56 Fe	5,021.	ppb	0.99	5,000	100.42	
57 Fe	5,146.	ppb	1.58	5,000	102.92	
59 Co	25.26	ppb	1.51	25	101.04	
60 Ni	25.09	ppb	2.47	25	100.36	
63 Cu	25.45	ppb	0.99	25	101.8	
65 Cu	25.53	ppb	0.62	25	102.12	
66 Zn	25.42	ppb	1.08	25	101.68	
68 Zn	24.87	ppb	1.66	25	99.48	
75 As	25.24	ppb	2.48	25	100.96	
82 Se	25.74	ppb	1.87	25	102.96	
88 Sr	25.26	ppb	2.03	25	101.04	
98 Mo	25.59	ppb	1.16	25	102.36	
107 Ag	25.87	ppb	1.60	25	103.48	
109 Ag	25.98	ppb	1.04	25	103.92	
111 Cd	26.02	ppb	1.87	25	104.08	
114 Cd	26.17	ppb	1.21	25	104.68	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.62	ppb	1.39	25	102.48	
120 Sn	25.83	ppb	1.27	25	103.32	
121 Sb	25.61	ppb	1.73	25	102.44	
123 Sb	25.67	ppb	1.49	25	102.68	
135 Ba	25.64	ppb	2.01	25	102.56	
137 Ba	25.67	ppb	0.77	25	102.68	
182 W	25.25	ppb	1.81	25	101	
203 Tl	25.63	ppb	3.17	25	102.52	
205 Tl	25.69	ppb	1.73	25	102.76	
208 Pb	25.49	ppb	1.74	25	101.96	
232 Th	25.47	ppb	1.79	25	101.88	
238 U	25.38	ppb	2.29	25	101.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3435259.80	1.61	3258324.00	105.4	80 - 120.4	
45 Sc	3054320.30	0.66	2896530.80	105.4	80 - 120.4	
89 Y	3693267.80	0.99	3408096.80	108.4	80 - 120.4	
159 Tb	3893202.00	1.27	3559216.30	109.4	80 - 120.4	
209 Bi	2148227.80	1.50	2013556.00	106.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000248

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\031_CCB.D\031_CCB.D#
Date Acquired: Mar 21 2018 03:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0009	ppb	325.92	1.00	
11 B	1.53	ppb	17.73	1.00	
23 Na	2.632	ppb	8.14	1.00	
25 Mg	0.5713	ppb	13.87	1.00	
27 Al	0.3504	ppb	40.33	1.00	
28 Si	-14.91	ppb	118.38	1.00	
29 Si	-85.76	ppb	12.37	1.00	
39 K	-6.018	ppb	4.68	1.00	
43 Ca	3.193	ppb	81.37	1.00	
44 Ca	-0.7773	ppb	102.65	1.00	
51 V	-0.0358	ppb	20.47	1.00	
52 Cr	-0.0705	ppb	14.68	1.00	
53 Cr	-0.0305	ppb	83.07	1.00	
55 Mn	-0.0235	ppb	27.13	1.00	
56 Fe	-5.408	ppb	33.65	1.00	
57 Fe	-5.579	ppb	30.96	1.00	
59 Co	-0.0026	ppb	56.03	1.00	
60 Ni	-0.0073	ppb	124.03	1.00	
63 Cu	0.0027	ppb	29.96	1.00	
65 Cu	0.0069	ppb	103.69	1.00	
66 Zn	-0.0285	ppb	92.77	1.00	
68 Zn	-0.1965	ppb	40.24	1.00	
75 As	-0.0747	ppb	42.72	1.00	
82 Se	-0.0941	ppb	276.53	1.00	
88 Sr	-0.0008	ppb	648.42	1.00	
98 Mo	0.0445	ppb	13.01	1.00	
107 Ag	0.0006	ppb	100.22	1.00	
109 Ag	0.0013	ppb	81.60	1.00	
111 Cd	-0.0826	ppb	68.92	1.00	
114 Cd	-0.0004	ppb	2182.20	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0106	ppb	171.67	1.00	
120 Sn	0.0196	ppb	131.82	1.00	
121 Sb	0.0039	ppb	58.09	1.00	
123 Sb	0.0077	ppb	123.66	1.00	
135 Ba	-0.0096	ppb	84.82	1.00	
137 Ba	0.0052	ppb	172.39	1.00	
182 W	0.0384	ppb	15.75	1.00	
203 Tl	0.0073	ppb	42.27	1.00	
205 Tl	0.0048	ppb	93.12	1.00	
208 Pb	0.0088	ppb	95.51	1.00	
232 Th	0.0201	ppb	10.84	1.00	
238 U	0.0057	ppb	17.13	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3172800.50	0.89	3258324.00	97.4	79.5 - 120	
45 Sc	2856945.30	0.73	2896530.80	98.6	79.5 - 120	
89 Y	3441464.00	0.96	3408096.80	101.0	79.5 - 120	
159 Tb	3584191.30	0.94	3559216.30	100.7	79.5 - 120	
209 Bi	2006329.50	0.61	2013556.00	99.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000249

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 21 2018 03:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-001
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.96	2.792	ppb	1.21	100.	
11 B	91.1	18.22	ppb	1.14	1000.	
23 Na	35,280.	7,056.	ppb	0.51	200000.	
25 Mg	104,150.	20,830.	ppb	0.51	200000.	
27 Al	241,850.	48,370.	ppb	1.35	200000.	
28 Si	1,233.5	246.7	ppb	13.24	#VALUE!	
29 Si	866.	173.2	ppb	12.56	10000.	
39 K	63,850.	12,770.	ppb	1.08	200000.	
43 Ca	227,100.	45,420.	ppb	1.67	#VALUE!	
44 Ca	214,950.	42,990.	ppb	1.47	200000.	
51 V	364.95	72.99	ppb	1.76	1000.	
52 Cr	188.25	37.65	ppb	1.75	2000.	
53 Cr	206.05	41.21	ppb	4.10	#VALUE!	
55 Mn	1,549.	309.8	ppb	2.12	2000.	
56 Fe	196,300.	39,260.	ppb	2.13	#VALUE!	
57 Fe	192,200.	38,440.	ppb	2.80	100000.	
59 Co	81.3	16.26	ppb	2.67	1000.	
60 Ni	209.65	41.93	ppb	2.69	1000.	
63 Cu	179.9	35.98	ppb	1.76	#VALUE!	
65 Cu	179.65	35.93	ppb	2.92	2000.	
66 Zn	622.5	124.5	ppb	1.64	2000.	
68 Zn	708.5	141.7	ppb	1.36	#VALUE!	
75 As	99.85	19.97	ppb	2.70	1000.	
82 Se	5.835	1.167	ppb	12.16	1000.	
88 Sr	1,232.5	246.5	ppb	1.47	2000.	
98 Mo	4.3835	0.8767	ppb	2.62	1000.	
107 Ag	1.284	0.2568	ppb	5.49	100.	
109 Ag	1.0885	0.2177	ppb	3.45	#VALUE!	
111 Cd	1.8045	0.3609	ppb	12.22	#VALUE!	
114 Cd	0.0594	0.0119	ppb	106.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.	11.6	ppb	0.44	1000.	
120 Sn	58.25	11.65	ppb	0.31	#VALUE!	
121 Sb	2.0555	0.4111	ppb	7.31	#VALUE!	
123 Sb	2.1235	0.4247	ppb	1.71	1000.	
135 Ba	3,213.	642.6	ppb	1.09	2000.	
137 Ba	3,200.5	640.1	ppb	0.69	#VALUE!	
182 W	0.7705	0.1541	ppb	10.97	1000.	
203 Tl	4.8915	0.9783	ppb	2.32	1000.	
205 Tl	4.922	0.9844	ppb	1.68	#VALUE!	
208 Pb	191.4	38.28	ppb	0.13	2000.	
232 Th	129.5	25.9	ppb	0.34	1000.	
238 U	22.525	4.505	ppb	0.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3492040.30	0.79	3258324.00	107.2	69.5 - 120	
45 Sc	3229143.80	1.30	2896530.80	111.5	69.5 - 120	
89 Y	4407808.50	1.47	3408096.80	129.3	69.5 - 120	IS Fai
159 Tb	4033223.30	0.68	3559216.30	113.3	69.5 - 120	
209 Bi	2105184.30	0.16	2013556.00	104.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000250

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 21 2018 03:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-001
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.28	1.528	ppb	2.54	100.	
11 B	102.1	10.21	ppb	2.46	1000.	
23 Na	38,810.	3,881.	ppb	0.85	200000.	
25 Mg	114,100.	11,410.	ppb	0.58	200000.	
27 Al	261,600.	26,160.	ppb	1.30	200000.	
28 Si	733.9	73.39	ppb	72.79	#VALUE!	
29 Si	-457.5	-45.75	ppb	84.81	10000.	
39 K	69,830.	6,983.	ppb	0.87	200000.	
43 Ca	237,500.	23,750.	ppb	1.33	#VALUE!	
44 Ca	233,500.	23,350.	ppb	0.91	200000.	
51 V	410.3	41.03	ppb	0.15	1000.	
52 Cr	217.2	21.72	ppb	0.33	2000.	
53 Cr	235.	23.5	ppb	1.34	#VALUE!	
55 Mn	1,809.	180.9	ppb	0.58	2000.	
56 Fe	224,100.	22,410.	ppb	0.19	#VALUE!	
57 Fe	219,900.	21,990.	ppb	0.48	100000.	
59 Co	93.94	9.394	ppb	0.61	1000.	
60 Ni	245.	24.5	ppb	0.19	1000.	
63 Cu	209.3	20.93	ppb	0.62	#VALUE!	
65 Cu	210.1	21.01	ppb	1.89	2000.	
66 Zn	735.2	73.52	ppb	0.64	2000.	
68 Zn	825.	82.5	ppb	0.81	#VALUE!	
75 As	112.6	11.26	ppb	1.43	1000.	
82 Se	6.138	0.6138	ppb	17.32	1000.	
88 Sr	1,429.	142.9	ppb	0.33	2000.	
98 Mo	5.093	0.5093	ppb	1.67	1000.	
107 Ag	1.468	0.1468	ppb	4.86	100.	
109 Ag	1.183	0.1183	ppb	3.28	#VALUE!	
111 Cd	1.948	0.1948	ppb	13.69	#VALUE!	
114 Cd	0.0318	0.0032	ppb	137.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	62.24	6.224	ppb	0.93	1000.	
120 Sn	62.48	6.248	ppb	1.04	#VALUE!	
121 Sb	2.269	0.2269	ppb	0.64	#VALUE!	
123 Sb	2.369	0.2369	ppb	8.94	1000.	
135 Ba	3,463.	346.3	ppb	0.80	2000.	
137 Ba	3,452.	345.2	ppb	0.44	#VALUE!	
182 W	0.8177	0.0818	ppb	11.53	1000.	
203 Tl	5.35	0.535	ppb	6.02	1000.	
205 Tl	5.052	0.5052	ppb	2.88	#VALUE!	
208 Pb	202.9	20.29	ppb	0.10	2000.	
232 Th	135.	13.5	ppb	0.66	1000.	
238 U	23.48	2.348	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3549023.80	2.62	3258324.00	108.9	69.5 - 120	
45 Sc	3268445.30	2.65	2896530.80	112.8	69.5 - 120	
89 Y	4202154.00	1.42	3408096.80	123.3	69.5 - 120	IS Fai
159 Tb	4050489.50	1.50	3559216.30	113.8	69.5 - 120	
209 Bi	2160795.50	1.56	2013556.00	107.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000251

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 21 2018 03:52 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.44	2.688	ppb	0.91	100.	
11 B	106.25	21.25	ppb	1.85	1000.	
23 Na	31,540.	6,308.	ppb	1.85	200000.	
25 Mg	85,150.	17,030.	ppb	0.60	200000.	
27 Al	231,050.	46,210.	ppb	1.43	200000.	
28 Si	2,117.5	423.5	ppb	3.31	#VALUE!	
29 Si	1,686.5	337.3	ppb	1.21	10000.	
39 K	65,050.	13,010.	ppb	1.64	200000.	
43 Ca	166,400.	33,280.	ppb	1.44	#VALUE!	
44 Ca	162,900.	32,580.	ppb	1.17	200000.	
51 V	459.85	91.97	ppb	1.07	1000.	
52 Cr	192.7	38.54	ppb	1.65	2000.	
53 Cr	211.6	42.32	ppb	2.24	#VALUE!	
55 Mn	1,589.5	317.9	ppb	1.55	2000.	
56 Fe	216,550.	43,310.	ppb	1.62	#VALUE!	
57 Fe	210,600.	42,120.	ppb	1.76	100000.	
59 Co	94.4	18.88	ppb	1.79	1000.	
60 Ni	239.15	47.83	ppb	1.00	1000.	
63 Cu	184.95	36.99	ppb	1.87	#VALUE!	
65 Cu	186.4	37.28	ppb	2.02	2000.	
66 Zn	629.	125.8	ppb	2.48	2000.	
68 Zn	676.5	135.3	ppb	2.29	#VALUE!	
75 As	182.3	36.46	ppb	2.04	1000.	
82 Se	6.23	1.246	ppb	21.48	1000.	
88 Sr	834.5	166.9	ppb	2.58	2000.	
98 Mo	8.755	1.751	ppb	3.10	1000.	
107 Ag	1.464	0.2928	ppb	1.84	100.	
109 Ag	1.355	0.271	ppb	3.88	#VALUE!	
111 Cd	1.6985	0.3397	ppb	2.37	#VALUE!	
114 Cd	-0.2879	-0.0576	ppb	11.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.95	10.39	ppb	0.92	1000.	
120 Sn	52.35	10.47	ppb	1.63	#VALUE!	
121 Sb	2.8715	0.5743	ppb	5.77	#VALUE!	
123 Sb	2.911	0.5822	ppb	5.69	1000.	
135 Ba	2,047.5	409.5	ppb	1.14	2000.	
137 Ba	2,049.	409.8	ppb	1.36	#VALUE!	
182 W	0.894	0.1788	ppb	5.68	1000.	
203 Tl	4.1575	0.8315	ppb	3.43	1000.	
205 Tl	4.3	0.86	ppb	1.81	#VALUE!	
208 Pb	200.7	40.14	ppb	1.90	2000.	
232 Th	119.7	23.94	ppb	2.16	1000.	
238 U	25.465	5.093	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3550787.80	1.28	3258324.00	109.0	69.5 - 120	
45 Sc	3296565.30	0.77	2896530.80	113.8	69.5 - 120	
89 Y	4436410.50	1.43	3408096.80	130.2	69.5 - 120	IS Fai
159 Tb	4088107.00	1.23	3559216.30	114.9	69.5 - 120	
209 Bi	2136869.00	1.42	2013556.00	106.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000252

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 21 2018 03:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.78	1.478	ppb	0.97	100.	
11 B	119.5	11.95	ppb	1.98	1000.	
23 Na	35,700.	3,570.	ppb	1.86	200000.	
25 Mg	97,600.	9,760.	ppb	2.42	200000.	
27 Al	261,800.	26,180.	ppb	1.61	200000.	
28 Si	1,857.	185.7	ppb	15.13	#VALUE!	
29 Si	856.5	85.65	ppb	42.64	10000.	
39 K	73,060.	7,306.	ppb	1.09	200000.	
43 Ca	189,500.	18,950.	ppb	0.94	#VALUE!	
44 Ca	183,900.	18,390.	ppb	0.61	200000.	
51 V	523.7	52.37	ppb	0.93	1000.	
52 Cr	228.5	22.85	ppb	0.92	2000.	
53 Cr	245.	24.5	ppb	1.74	#VALUE!	
55 Mn	1,898.	189.8	ppb	1.14	2000.	
56 Fe	253,000.	25,300.	ppb	0.87	#VALUE!	
57 Fe	247,900.	24,790.	ppb	0.90	100000.	
59 Co	111.7	11.17	ppb	0.80	1000.	
60 Ni	283.8	28.38	ppb	0.42	1000.	
63 Cu	219.7	21.97	ppb	0.63	#VALUE!	
65 Cu	221.5	22.15	ppb	1.55	2000.	
66 Zn	752.	75.2	ppb	1.24	2000.	
68 Zn	813.	81.3	ppb	1.28	#VALUE!	
75 As	217.1	21.71	ppb	0.97	1000.	
82 Se	8.101	0.8101	ppb	18.41	1000.	
88 Sr	993.2	99.32	ppb	0.59	2000.	
98 Mo	10.08	1.008	ppb	4.44	1000.	
107 Ag	1.759	0.1759	ppb	3.21	100.	
109 Ag	1.623	0.1623	ppb	3.15	#VALUE!	
111 Cd	1.325	0.1325	ppb	17.71	#VALUE!	
114 Cd	-0.27	-0.027	ppb	69.41	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.2	5.72	ppb	2.09	1000.	
120 Sn	58.21	5.821	ppb	1.75	#VALUE!	
121 Sb	3.206	0.3206	ppb	5.84	#VALUE!	
123 Sb	3.46	0.346	ppb	8.73	1000.	
135 Ba	2,316.	231.6	ppb	0.75	2000.	
137 Ba	2,314.	231.4	ppb	0.41	#VALUE!	
182 W	1.013	0.1013	ppb	6.70	1000.	
203 Tl	4.869	0.4869	ppb	3.59	1000.	
205 Tl	4.677	0.4677	ppb	4.56	#VALUE!	
208 Pb	221.5	22.15	ppb	0.10	2000.	
232 Th	131.6	13.16	ppb	0.52	1000.	
238 U	28.3	2.83	ppb	0.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3537460.00	1.31	3258324.00	108.6	69.5 - 120	
45 Sc	3212411.00	1.10	2896530.80	110.9	69.5 - 120	
89 Y	4194537.50	0.48	3408096.80	123.1	69.5 - 120	IS Fai
159 Tb	4024744.00	0.68	3559216.30	113.1	69.5 - 120	
209 Bi	2158185.50	0.32	2013556.00	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000253

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 21 2018 04:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.515	2.303	ppb	1.54	100.	
11 B	95.8	19.16	ppb	2.15	1000.	
23 Na	5,745.	1,149.	ppb	0.66	200000.	
25 Mg	83,100.	16,620.	ppb	0.58	200000.	
27 Al	205,750.	41,150.	ppb	0.93	200000.	
28 Si	2,878.5	575.7	ppb	6.49	#VALUE!	
29 Si	2,476.	495.2	ppb	6.01	10000.	
39 K	43,435.	8,687.	ppb	1.41	200000.	
43 Ca	108,950.	21,790.	ppb	1.14	#VALUE!	
44 Ca	106,050.	21,210.	ppb	0.79	200000.	
51 V	363.85	72.77	ppb	2.15	1000.	
52 Cr	205.35	41.07	ppb	1.67	2000.	
53 Cr	228.55	45.71	ppb	2.50	#VALUE!	
55 Mn	3,980.5	796.1	ppb	1.30	2000.	
56 Fe	218,400.	43,680.	ppb	1.53	#VALUE!	
57 Fe	213,350.	42,670.	ppb	1.83	100000.	
59 Co	57.6	11.52	ppb	1.66	1000.	
60 Ni	178.05	35.61	ppb	2.31	1000.	
63 Cu	168.65	33.73	ppb	2.17	#VALUE!	
65 Cu	169.2	33.84	ppb	1.70	2000.	
66 Zn	607.	121.4	ppb	2.49	2000.	
68 Zn	713.	142.6	ppb	1.43	#VALUE!	
75 As	72.35	14.47	ppb	4.06	1000.	
82 Se	5.245	1.049	ppb	17.26	1000.	
88 Sr	629.5	125.9	ppb	0.88	2000.	
98 Mo	2.8135	0.5627	ppb	2.36	1000.	
107 Ag	0.968	0.1936	ppb	6.21	100.	
109 Ag	0.757	0.1514	ppb	5.93	#VALUE!	
111 Cd	4.2815	0.8563	ppb	9.02	#VALUE!	
114 Cd	2.218	0.4436	ppb	3.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.25	10.45	ppb	1.55	1000.	
120 Sn	52.85	10.57	ppb	0.41	#VALUE!	
121 Sb	1.6805	0.3361	ppb	4.11	#VALUE!	
123 Sb	1.679	0.3358	ppb	2.98	1000.	
135 Ba	3,851.	770.2	ppb	0.13	2000.	
137 Ba	3,791.	758.2	ppb	0.53	#VALUE!	
182 W	0.664	0.1328	ppb	4.85	1000.	
203 Tl	3.9055	0.7811	ppb	4.93	1000.	
205 Tl	3.8395	0.7679	ppb	0.82	#VALUE!	
208 Pb	177.75	35.55	ppb	0.64	2000.	
232 Th	113.45	22.69	ppb	0.46	1000.	
238 U	11.805	2.361	ppb	1.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3496796.30	0.57	3258324.00	107.3	69.5 - 120	
45 Sc	3238851.50	1.57	2896530.80	111.8	69.5 - 120	
89 Y	4436573.00	1.16	3408096.80	130.2	69.5 - 120	IS Fai
159 Tb	4073836.30	0.21	3559216.30	114.5	69.5 - 120	
209 Bi	2132954.50	0.51	2013556.00	105.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000254

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 21 2018 04:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.18	1.318	ppb	1.21	100.	
11 B	111.1	11.11	ppb	4.05	1000.	
23 Na	6,721.	672.1	ppb	1.44	200000.	
25 Mg	96,520.	9,652.	ppb	2.42	200000.	
27 Al	238,800.	23,880.	ppb	2.21	200000.	
28 Si	2,912.	291.2	ppb	13.08	#VALUE!	
29 Si	2,178.	217.8	ppb	16.55	10000.	
39 K	50,530.	5,053.	ppb	2.58	200000.	
43 Ca	127,400.	12,740.	ppb	2.12	#VALUE!	
44 Ca	124,400.	12,440.	ppb	2.39	200000.	
51 V	431.8	43.18	ppb	1.40	1000.	
52 Cr	249.6	24.96	ppb	1.86	2000.	
53 Cr	272.7	27.27	ppb	2.30	#VALUE!	
55 Mn	4,814.	481.4	ppb	1.94	2000.	
56 Fe	264,800.	26,480.	ppb	0.94	#VALUE!	
57 Fe	260,000.	26,000.	ppb	0.61	100000.	
59 Co	70.33	7.033	ppb	0.96	1000.	
60 Ni	218.2	21.82	ppb	2.08	1000.	
63 Cu	205.3	20.53	ppb	1.28	#VALUE!	
65 Cu	208.3	20.83	ppb	1.64	2000.	
66 Zn	747.2	74.72	ppb	1.06	2000.	
68 Zn	871.6	87.16	ppb	2.42	#VALUE!	
75 As	86.53	8.653	ppb	1.66	1000.	
82 Se	8.313	0.8313	ppb	51.46	1000.	
88 Sr	777.8	77.78	ppb	2.68	2000.	
98 Mo	3.361	0.3361	ppb	7.47	1000.	
107 Ag	1.14	0.114	ppb	5.28	100.	
109 Ag	1.014	0.1014	ppb	2.37	#VALUE!	
111 Cd	4.428	0.4428	ppb	7.27	#VALUE!	
114 Cd	2.83	0.283	ppb	3.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	59.8	5.98	ppb	1.94	1000.	
120 Sn	60.79	6.079	ppb	2.33	#VALUE!	
121 Sb	1.798	0.1798	ppb	3.67	#VALUE!	
123 Sb	1.944	0.1944	ppb	5.21	1000.	
135 Ba	4,403.	440.3	ppb	2.16	2000.	
137 Ba	4,400.	440.	ppb	1.72	#VALUE!	
182 W	0.9594	0.0959	ppb	15.59	1000.	
203 Tl	4.174	0.4174	ppb	2.93	1000.	
205 Tl	4.385	0.4385	ppb	2.06	#VALUE!	
208 Pb	200.5	20.05	ppb	1.40	2000.	
232 Th	127.5	12.75	ppb	1.65	1000.	
238 U	13.21	1.321	ppb	2.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3450427.80	1.71	3258324.00	105.9	69.5 - 120	
45 Sc	3156356.30	1.82	2896530.80	109.0	69.5 - 120	
89 Y	4170796.30	1.35	3408096.80	122.4	69.5 - 120	IS Fai
159 Tb	4033178.80	1.85	3559216.30	113.3	69.5 - 120	
209 Bi	2167596.30	1.14	2013556.00	107.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000255

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 21 2018 04:08 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-004
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.25	1.025	ppb	2.44	100.	
11 B	146.	14.6	ppb	3.75	1000.	
23 Na	2,746.	274.6	ppb	1.38	200000.	
25 Mg	128,400.	12,840.	ppb	0.36	200000.	
27 Al	216,100.	21,610.	ppb	0.45	200000.	
28 Si	3,145.	314.5	ppb	9.12	#VALUE!	
29 Si	2,317.	231.7	ppb	9.09	10000.	
39 K	48,690.	4,869.	ppb	1.47	200000.	
43 Ca	1,247,000.	124,700.	ppb	0.98	#VALUE!	
44 Ca	1,210,000.	121,000.	ppb	0.92	200000.	
51 V	391.	39.1	ppb	0.85	1000.	
52 Cr	190.7	19.07	ppb	0.69	2000.	
53 Cr	205.	20.5	ppb	1.80	#VALUE!	
55 Mn	3,352.	335.2	ppb	0.42	2000.	
56 Fe	173,300.	17,330.	ppb	0.79	#VALUE!	
57 Fe	173,200.	17,320.	ppb	0.60	100000.	
59 Co	74.1	7.41	ppb	1.46	1000.	
60 Ni	142.3	14.23	ppb	1.00	1000.	
63 Cu	119.1	11.91	ppb	1.59	#VALUE!	
65 Cu	123.	12.3	ppb	1.17	2000.	
66 Zn	487.4	48.74	ppb	0.94	2000.	
68 Zn	576.7	57.67	ppb	1.77	#VALUE!	
75 As	31.97	3.197	ppb	5.92	1000.	
82 Se	9.156	0.9156	ppb	23.09	1000.	
88 Sr	2,768.	276.8	ppb	0.48	2000.	
98 Mo	2.73	0.273	ppb	5.12	1000.	
107 Ag	1.044	0.1044	ppb	0.28	100.	
109 Ag	0.8352	0.0835	ppb	7.96	#VALUE!	
111 Cd	3.629	0.3629	ppb	12.06	#VALUE!	
114 Cd	1.649	0.1649	ppb	10.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.54	5.654	ppb	2.51	1000.	
120 Sn	55.67	5.567	ppb	1.30	#VALUE!	
121 Sb	2.139	0.2139	ppb	1.80	#VALUE!	
123 Sb	2.06	0.206	ppb	15.35	1000.	
135 Ba	3,291.	329.1	ppb	0.92	2000.	
137 Ba	3,259.	325.9	ppb	0.46	#VALUE!	
182 W	0.7856	0.0786	ppb	6.49	1000.	
203 Tl	3.716	0.3716	ppb	7.58	1000.	
205 Tl	3.841	0.3841	ppb	4.53	#VALUE!	
208 Pb	130.4	13.04	ppb	0.97	2000.	
232 Th	92.67	9.267	ppb	1.31	1000.	
238 U	18.61	1.861	ppb	1.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3371271.50	1.50	3258324.00	103.5	69.5 - 120	
45 Sc	3154663.30	1.10	2896530.80	108.9	69.5 - 120	
89 Y	4136786.50	1.23	3408096.80	121.4	69.5 - 120	IS Fai
159 Tb	4024150.00	0.15	3559216.30	113.1	69.5 - 120	
209 Bi	2144725.80	0.53	2013556.00	106.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000256

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 21 2018 04:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.915	2.583	ppb	1.94	100.	
11 B	112.5	22.5	ppb	2.63	1000.	
23 Na	1,933.	386.6	ppb	0.17	200000.	
25 Mg	87,750.	17,550.	ppb	0.81	200000.	
27 Al	189,550.	37,910.	ppb	0.90	200000.	
28 Si	3,117.	623.4	ppb	10.71	#VALUE!	
29 Si	2,549.5	509.9	ppb	1.84	10000.	
39 K	44,745.	8,949.	ppb	1.45	200000.	
43 Ca	386,800.	77,360.	ppb	0.73	#VALUE!	
44 Ca	369,250.	73,850.	ppb	0.99	200000.	
51 V	782.5	156.5	ppb	1.27	1000.	
52 Cr	181.8	36.36	ppb	1.72	2000.	
53 Cr	199.85	39.97	ppb	2.75	#VALUE!	
55 Mn	6,295.	1,259.	ppb	1.59	2000.	
56 Fe	386,700.	77,340.	ppb	2.21	#VALUE!	
57 Fe	375,000.	75,000.	ppb	1.29	100000.	
59 Co	83.25	16.65	ppb	1.67	1000.	
60 Ni	147.95	29.59	ppb	1.46	1000.	
63 Cu	260.75	52.15	ppb	2.39	#VALUE!	
65 Cu	262.8	52.56	ppb	3.02	2000.	
66 Zn	459.15	91.83	ppb	1.95	2000.	
68 Zn	588.	117.6	ppb	1.55	#VALUE!	
75 As	494.1	98.82	ppb	1.59	1000.	
82 Se	8.415	1.683	ppb	12.81	1000.	
88 Sr	973.	194.6	ppb	1.81	2000.	
98 Mo	20.49	4.098	ppb	2.05	1000.	
107 Ag	0.942	0.1884	ppb	6.16	100.	
109 Ag	0.7445	0.1489	ppb	4.84	#VALUE!	
111 Cd	5.24	1.048	ppb	10.38	#VALUE!	
114 Cd	2.6785	0.5357	ppb	4.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.05	10.21	ppb	1.50	1000.	
120 Sn	51.45	10.29	ppb	0.73	#VALUE!	
121 Sb	4.1815	0.8363	ppb	1.21	#VALUE!	
123 Sb	4.1605	0.8321	ppb	4.00	1000.	
135 Ba	4,443.5	888.7	ppb	2.36	2000.	
137 Ba	4,396.5	879.3	ppb	0.90	#VALUE!	
182 W	0.9215	0.1843	ppb	5.19	1000.	
203 Tl	3.8835	0.7767	ppb	5.05	1000.	
205 Tl	3.9175	0.7835	ppb	2.14	#VALUE!	
208 Pb	237.25	47.45	ppb	0.79	2000.	
232 Th	93.75	18.75	ppb	0.24	1000.	
238 U	13.11	2.622	ppb	0.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3365039.30	2.07	3258324.00	103.3	69.5 - 120	
45 Sc	3167670.30	1.45	2896530.80	109.4	69.5 - 120	
89 Y	4475368.00	1.22	3408096.80	131.3	69.5 - 120	IS Fai
159 Tb	3996873.30	1.13	3559216.30	112.3	69.5 - 120	
209 Bi	2080624.10	0.46	2013556.00	103.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000257

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\040SMPL.D\040SMPL.D#
Date Acquired: Mar 21 2018 04:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.09	1.509	ppb	3.15	100.	
11 B	132.8	13.28	ppb	3.12	1000.	
23 Na	2,313.	231.3	ppb	0.96	200000.	
25 Mg	103,900.	10,390.	ppb	1.21	200000.	
27 Al	221,500.	22,150.	ppb	0.78	200000.	
28 Si	2,652.	265.2	ppb	19.23	#VALUE!	
29 Si	1,726.	172.6	ppb	7.51	10000.	
39 K	51,890.	5,189.	ppb	1.40	200000.	
43 Ca	448,100.	44,810.	ppb	0.85	#VALUE!	
44 Ca	426,600.	42,660.	ppb	0.07	200000.	
51 V	972.1	97.21	ppb	0.75	1000.	
52 Cr	223.4	22.34	ppb	1.39	2000.	
53 Cr	241.9	24.19	ppb	0.92	#VALUE!	
55 Mn	7,739.	773.9	ppb	1.01	2000.	
56 Fe	470,700.	47,070.	ppb	1.02	#VALUE!	
57 Fe	460,700.	46,070.	ppb	1.23	100000.	
59 Co	102.3	10.23	ppb	1.92	1000.	
60 Ni	186.5	18.65	ppb	0.98	1000.	
63 Cu	322.7	32.27	ppb	2.25	#VALUE!	
65 Cu	325.8	32.58	ppb	1.76	2000.	
66 Zn	586.7	58.67	ppb	1.92	2000.	
68 Zn	740.7	74.07	ppb	2.97	#VALUE!	
75 As	607.4	60.74	ppb	1.34	1000.	
82 Se	8.359	0.8359	ppb	14.34	1000.	
88 Sr	1,190.	119.	ppb	0.71	2000.	
98 Mo	24.64	2.464	ppb	2.81	1000.	
107 Ag	1.15	0.115	ppb	5.55	100.	
109 Ag	0.8823	0.0882	ppb	2.80	#VALUE!	
111 Cd	6.101	0.6101	ppb	9.70	#VALUE!	
114 Cd	3.439	0.3439	ppb	3.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	59.44	5.944	ppb	1.20	1000.	
120 Sn	59.78	5.978	ppb	0.94	#VALUE!	
121 Sb	5.016	0.5016	ppb	5.33	#VALUE!	
123 Sb	4.994	0.4994	ppb	2.04	1000.	
135 Ba	5,137.	513.7	ppb	0.30	2000.	
137 Ba	5,119.	511.9	ppb	1.57	#VALUE!	
182 W	1.029	0.1029	ppb	8.62	1000.	
203 Tl	4.476	0.4476	ppb	6.24	1000.	
205 Tl	4.354	0.4354	ppb	1.24	#VALUE!	
208 Pb	268.	26.8	ppb	0.80	2000.	
232 Th	103.9	10.39	ppb	0.73	1000.	
238 U	14.81	1.481	ppb	1.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3461125.50	0.34	3258324.00	106.2	69.5 - 120	
45 Sc	3184042.80	0.41	2896530.80	109.9	69.5 - 120	
89 Y	4265802.00	1.02	3408096.80	125.2	69.5 - 120	IS Fai
159 Tb	4016278.30	0.37	3559216.30	112.8	69.5 - 120	
209 Bi	2162205.30	0.46	2013556.00	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000258

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\041SMPL.D\041SMPL.D#
Date Acquired: Mar 21 2018 04:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0021	-0.0021	ppb	122.04	100.	
11 B	0.6782	0.6782	ppb	15.79	1000.	
23 Na	1.402	1.402	ppb	27.63	200000.	
25 Mg	0.5727	0.5727	ppb	22.94	200000.	
27 Al	0.9122	0.9122	ppb	21.93	200000.	
28 Si	-28.37	-28.37	ppb	118.33	#VALUE!	
29 Si	-112.9	-112.9	ppb	19.47	10000.	LOW
39 K	-7.298	-7.298	ppb	38.79	200000.	
43 Ca	3.348	3.348	ppb	151.13	#VALUE!	
44 Ca	-2.619	-2.619	ppb	17.85	200000.	
51 V	-0.0492	-0.0492	ppb	46.73	1000.	
52 Cr	-0.0485	-0.0485	ppb	20.98	2000.	
53 Cr	-0.8219	-0.8219	ppb	0.61	#VALUE!	
55 Mn	0.0054	0.0054	ppb	195.07	2000.	
56 Fe	-7.406	-7.406	ppb	45.99	#VALUE!	
57 Fe	-6.778	-6.778	ppb	26.51	100000.	
59 Co	-0.0054	-0.0054	ppb	16.25	1000.	
60 Ni	-0.004	-0.004	ppb	231.42	1000.	
63 Cu	0.0104	0.0104	ppb	12.06	#VALUE!	
65 Cu	0.0088	0.0088	ppb	190.39	2000.	
66 Zn	-0.0785	-0.0785	ppb	12.79	2000.	
68 Zn	-0.2151	-0.2151	ppb	70.85	#VALUE!	
75 As	-0.1753	-0.1753	ppb	18.09	1000.	
82 Se	0.0142	0.0142	ppb	1847.60	1000.	
88 Sr	-0.0007	-0.0007	ppb	595.29	2000.	
98 Mo	0.0121	0.0121	ppb	31.46	1000.	
107 Ag	0.0018	0.0018	ppb	64.37	100.	
109 Ag	-0.0006	-0.0006	ppb	331.04	#VALUE!	
111 Cd	-0.16	-0.16	ppb	13.32	#VALUE!	
114 Cd	0.0023	0.0023	ppb	72.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0148	-0.0148	ppb	192.14	1000.	
120 Sn	0.009	0.009	ppb	45.59	#VALUE!	
121 Sb	-0.004	-0.004	ppb	235.36	#VALUE!	
123 Sb	0.0018	0.0018	ppb	532.73	1000.	
135 Ba	0.0197	0.0197	ppb	85.96	2000.	
137 Ba	0.0191	0.0191	ppb	30.41	#VALUE!	
182 W	-0.0002	-0.0002	ppb	3023.60	1000.	
203 Tl	-0.0007	-0.0007	ppb	79.12	1000.	
205 Tl	0.0011	0.0011	ppb	331.53	#VALUE!	
208 Pb	0.0092	0.0092	ppb	39.31	2000.	
232 Th	0.002	0.002	ppb	42.06	1000.	
238 U	0.0001	0.0001	ppb	122.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3089092.00	3.31	3258324.00	94.8	69.5 - 120	
45 Sc	2818837.80	2.39	2896530.80	97.3	69.5 - 120	
89 Y	3491478.50	2.01	3408096.80	102.4	69.5 - 120	
159 Tb	3587935.30	2.01	3559216.30	100.8	69.5 - 120	
209 Bi	1997601.40	2.19	2013556.00	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000259

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\042_CCV.D\042_CCV.D#
Date Acquired: Mar 21 2018 04:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.48	ppb	2.37	25	97.92	
11 B	24.98	ppb	1.36	25	99.92	
23 Na	4,845.	ppb	1.15	5,000	96.9	
25 Mg	4,952.	ppb	1.87	5,000	99.04	
27 Al	502.7	ppb	1.76	500	100.54	
28 Si	464.1	ppb	10.00	500	92.82	
29 Si	367.5	ppb	7.77	500	73.5	Fail
39 K	5,029.	ppb	0.62	5,000	100.58	
43 Ca	5,112.	ppb	1.28	5,000	102.24	
44 Ca	5,197.	ppb	1.28	5,000	103.94	
51 V	24.19	ppb	2.68	25	96.76	
52 Cr	24.45	ppb	1.63	25	97.8	
53 Cr	24.03	ppb	0.92	25	96.12	
55 Mn	24.66	ppb	2.41	25	98.64	
56 Fe	4,912.	ppb	1.37	5,000	98.24	
57 Fe	5,094.	ppb	1.76	5,000	101.88	
59 Co	24.59	ppb	2.71	25	98.36	
60 Ni	24.61	ppb	2.62	25	98.44	
63 Cu	24.76	ppb	2.83	25	99.04	
65 Cu	24.4	ppb	2.47	25	97.6	
66 Zn	24.5	ppb	2.43	25	98	
68 Zn	24.27	ppb	2.69	25	97.08	
75 As	24.48	ppb	2.58	25	97.92	
82 Se	24.93	ppb	2.92	25	99.72	
88 Sr	25.25	ppb	1.14	25	101	
98 Mo	25.19	ppb	1.97	25	100.76	
107 Ag	25.43	ppb	2.33	25	101.72	
109 Ag	25.64	ppb	1.88	25	102.56	
111 Cd	25.48	ppb	2.62	25	101.92	
114 Cd	25.56	ppb	2.59	25	102.24	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.66	ppb	2.14	25	102.64	
120 Sn	25.75	ppb	1.14	25	103	
121 Sb	25.73	ppb	1.59	25	102.92	
123 Sb	25.76	ppb	2.02	25	103.04	
135 Ba	26.25	ppb	2.21	25	105	
137 Ba	25.52	ppb	2.68	25	102.08	
182 W	25.1	ppb	1.60	25	100.4	
203 Tl	25.25	ppb	1.51	25	101	
205 Tl	25.43	ppb	1.38	25	101.72	
208 Pb	25.29	ppb	1.45	25	101.16	
232 Th	24.99	ppb	1.10	25	99.96	
238 U	25.	ppb	1.93	25	100	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3397456.00	1.74	3258324.00	104.3	80 - 120.4	
45 Sc	3042550.50	1.34	2896530.80	105.0	80 - 120.4	
89 Y	3763437.00	1.11	3408096.80	110.4	80 - 120.4	
159 Tb	3880892.80	0.86	3559216.30	109.0	80 - 120.4	
209 Bi	2135315.80	0.65	2013556.00	106.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000260

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\043_CCB.D\043_CCB.D#
Date Acquired: Mar 21 2018 04:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	66.41	1.00	
11 B	0.6455	ppb	6.98	1.00	
23 Na	1.109	ppb	15.96	1.00	
25 Mg	0.389	ppb	18.27	1.00	
27 Al	0.4407	ppb	11.60	1.00	
28 Si	-42.35	ppb	47.13	1.00	
29 Si	-116.6	ppb	13.73	1.00	
39 K	-7.526	ppb	11.12	1.00	
43 Ca	3.154	ppb	60.81	1.00	
44 Ca	-2.505	ppb	24.59	1.00	
51 V	-0.0027	ppb	660.39	1.00	
52 Cr	-0.0615	ppb	17.47	1.00	
53 Cr	-0.6152	ppb	12.37	1.00	
55 Mn	0.0019	ppb	246.44	1.00	
56 Fe	-3.565	ppb	43.65	1.00	
57 Fe	-4.412	ppb	53.02	1.00	
59 Co	-0.0075	ppb	39.87	1.00	
60 Ni	-0.0099	ppb	67.79	1.00	
63 Cu	-0.0037	ppb	39.87	1.00	
65 Cu	-0.0016	ppb	438.32	1.00	
66 Zn	-0.0425	ppb	139.50	1.00	
68 Zn	-0.204	ppb	56.52	1.00	
75 As	-0.033	ppb	541.10	1.00	
82 Se	0.2555	ppb	27.31	1.00	
88 Sr	0.0014	ppb	188.26	1.00	
98 Mo	0.0169	ppb	18.85	1.00	
107 Ag	0.002	ppb	102.98	1.00	
109 Ag	0.0021	ppb	66.67	1.00	
111 Cd	-0.094	ppb	42.94	1.00	
114 Cd	0.0002	ppb	1939.20	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0146	ppb	97.33	1.00	
120 Sn	0.0165	ppb	11.92	1.00	
121 Sb	0.0023	ppb	326.38	1.00	
123 Sb	-0.0002	ppb	2945.70	1.00	
135 Ba	0.0197	ppb	73.62	1.00	
137 Ba	-0.0042	ppb	24.94	1.00	
182 W	0.0164	ppb	34.54	1.00	
203 Tl	0.0032	ppb	27.73	1.00	
205 Tl	0.0049	ppb	63.36	1.00	
208 Pb	0.0076	ppb	34.48	1.00	
232 Th	0.0156	ppb	24.41	1.00	
238 U	0.0002	ppb	736.12	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3222396.30	1.71	3258324.00	98.9	79.5 - 120	
45 Sc	2865224.80	0.94	2896530.80	98.9	79.5 - 120	
89 Y	3495700.00	0.64	3408096.80	102.6	79.5 - 120	
159 Tb	3603146.30	1.45	3559216.30	101.2	79.5 - 120	
209 Bi	2012405.40	1.36	2013556.00	99.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000261

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\044SMPL.D\044SMPL.D#
Date Acquired: Mar 21 2018 04:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLC20IMS1
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0083	-0.0017	ppb	141.89	100.	
11 B	2.5775	0.5155	ppb	12.03	1000.	
23 Na	34.225	6.845	ppb	6.36	200000.	
25 Mg	14.	2.8	ppb	1.03	200000.	
27 Al	11.43	2.286	ppb	4.27	200000.	
28 Si	-254.65	-50.93	ppb	13.60	#VALUE!	
29 Si	-589.	-117.8	ppb	9.82	10000.	LOW
39 K	-9.78	-1.956	ppb	55.78	200000.	
43 Ca	26.675	5.335	ppb	104.61	#VALUE!	
44 Ca	28.015	5.603	ppb	43.67	200000.	
51 V	-0.2673	-0.0535	ppb	22.04	1000.	
52 Cr	0.9755	0.1951	ppb	9.09	2000.	
53 Cr	23.21	4.642	ppb	0.29	#VALUE!	
55 Mn	0.4032	0.0806	ppb	13.02	2000.	
56 Fe	1.245	0.249	ppb	1565.50	#VALUE!	
57 Fe	-7.595	-1.519	ppb	57.95	100000.	
59 Co	-0.028	-0.0056	ppb	63.74	1000.	
60 Ni	0.6035	0.1207	ppb	14.50	1000.	
63 Cu	0.64	0.128	ppb	3.24	#VALUE!	
65 Cu	0.586	0.1172	ppb	19.41	2000.	
66 Zn	0.722	0.1444	ppb	27.92	2000.	
68 Zn	-0.7895	-0.1579	ppb	94.81	#VALUE!	
75 As	-1.169	-0.2338	ppb	66.94	1000.	
82 Se	-0.951	-0.1902	ppb	147.90	1000.	
88 Sr	0.1897	0.0379	ppb	18.80	2000.	
98 Mo	0.1156	0.0231	ppb	20.53	1000.	
107 Ag	0.015	0.003	ppb	38.07	100.	
109 Ag	0.0082	0.0016	ppb	82.39	#VALUE!	
111 Cd	-0.4134	-0.0827	ppb	26.64	#VALUE!	
114 Cd	0.0256	0.0051	ppb	302.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.29	8.658	ppb	0.89	1000.	
120 Sn	43.415	8.683	ppb	2.37	#VALUE!	
121 Sb	0.1034	0.0207	ppb	3.97	#VALUE!	
123 Sb	0.1321	0.0264	ppb	36.93	1000.	
135 Ba	0.1929	0.0386	ppb	16.59	2000.	
137 Ba	0.2236	0.0447	ppb	31.51	#VALUE!	
182 W	0.1307	0.0261	ppb	15.08	1000.	
203 Tl	0.0033	0.0007	ppb	395.06	1000.	
205 Tl	-0.0047	-0.0009	ppb	208.62	#VALUE!	
208 Pb	0.3272	0.0654	ppb	15.43	2000.	
232 Th	0.0876	0.0175	ppb	32.49	1000.	
238 U	-0.0002	0.	ppb	3077.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177304.00	0.72	3258324.00	97.5	69.5 - 120	
45 Sc	2840778.80	0.88	2896530.80	98.1	69.5 - 120	
89 Y	3528480.00	0.74	3408096.80	103.5	69.5 - 120	
159 Tb	3722445.30	0.80	3559216.30	104.6	69.5 - 120	
209 Bi	2038035.60	1.11	2013556.00	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000262

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\045SMPL.D\045SMPL.D#
Date Acquired: Mar 21 2018 04:35 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLC20IMS1
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.745	9.749	ppb	0.58	100.	
11 B	507.5	101.5	ppb	1.05	1000.	
23 Na	7,430.	1,486.	ppb	2.78	200000.	
25 Mg	5,295.	1,059.	ppb	1.81	200000.	
27 Al	2,089.	417.8	ppb	1.02	200000.	
28 Si	620.5	124.1	ppb	17.14	#VALUE!	
29 Si	232.85	46.57	ppb	40.71	10000.	
39 K	10,200.	2,040.	ppb	2.03	200000.	
43 Ca	2,945.	589.	ppb	5.12	#VALUE!	
44 Ca	2,609.5	521.9	ppb	1.59	200000.	
51 V	493.3	98.66	ppb	2.68	1000.	
52 Cr	197.15	39.43	ppb	2.66	2000.	
53 Cr	219.9	43.98	ppb	1.22	#VALUE!	
55 Mn	501.5	100.3	ppb	2.76	2000.	
56 Fe	941.	188.2	ppb	2.97	#VALUE!	
57 Fe	983.	196.6	ppb	4.08	100000.	
59 Co	508.	101.6	ppb	3.81	1000.	
60 Ni	501.	100.2	ppb	3.53	1000.	
63 Cu	249.55	49.91	ppb	2.33	#VALUE!	
65 Cu	250.4	50.08	ppb	2.74	2000.	
66 Zn	487.85	97.57	ppb	3.25	2000.	
68 Zn	554.	110.8	ppb	3.11	#VALUE!	
75 As	101.8	20.36	ppb	2.78	1000.	
82 Se	98.4	19.68	ppb	3.27	1000.	
88 Sr	524.5	104.9	ppb	1.17	2000.	
98 Mo	103.65	20.73	ppb	1.92	1000.	
107 Ag	52.1	10.42	ppb	3.03	100.	
109 Ag	52.65	10.53	ppb	4.36	#VALUE!	
111 Cd	260.25	52.05	ppb	2.79	#VALUE!	
114 Cd	260.65	52.13	ppb	2.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	567.5	113.5	ppb	1.46	1000.	
120 Sn	566.	113.2	ppb	0.63	#VALUE!	
121 Sb	105.9	21.18	ppb	2.43	#VALUE!	
123 Sb	105.6	21.12	ppb	1.98	1000.	
135 Ba	2,097.	419.4	ppb	0.79	2000.	
137 Ba	2,081.5	416.3	ppb	1.30	#VALUE!	
182 W	103.15	20.63	ppb	1.40	1000.	
203 Tl	105.05	21.01	ppb	1.42	1000.	
205 Tl	105.55	21.11	ppb	1.66	#VALUE!	
208 Pb	106.7	21.34	ppb	1.65	2000.	
232 Th	103.8	20.76	ppb	1.87	1000.	
238 U	103.95	20.79	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3417727.30	1.31	3258324.00	104.9	69.5 - 120	
45 Sc	2994627.80	0.60	2896530.80	103.4	69.5 - 120	
89 Y	3732279.00	1.53	3408096.80	109.5	69.5 - 120	
159 Tb	3861717.50	0.48	3559216.30	108.5	69.5 - 120	
209 Bi	2093788.80	0.99	2013556.00	104.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000263

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\046SMPL.D\046SMPL.D#
Date Acquired: Mar 21 2018 04:39 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-008
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	19.6	3.92	ppb	2.73	100.	
11 B	303.45	60.69	ppb	4.37	1000.	
23 Na	17,080.	3,416.	ppb	3.59	200000.	
25 Mg	190,000.	38,000.	ppb	2.07	200000.	
27 Al	444,450.	88,890.	ppb	0.57	200000.	
28 Si	4,755.	951.	ppb	4.00	#VALUE!	
29 Si	4,538.5	907.7	ppb	5.31	10000.	
39 K	121,200.	24,240.	ppb	1.32	200000.	
43 Ca	1,042,500.	208,500.	ppb	1.91	#VALUE!	
44 Ca	1,020,500.	204,100.	ppb	0.82	200000.	>LDR
51 V	780.	156.	ppb	0.92	1000.	
52 Cr	323.7	64.74	ppb	0.78	2000.	
53 Cr	330.8	66.16	ppb	2.21	#VALUE!	
55 Mn	1,941.	388.2	ppb	0.61	2000.	
56 Fe	297,800.	59,560.	ppb	0.94	#VALUE!	
57 Fe	293,550.	58,710.	ppb	1.23	100000.	
59 Co	87.9	17.58	ppb	0.89	1000.	
60 Ni	298.7	59.74	ppb	2.39	1000.	
63 Cu	197.55	39.51	ppb	2.29	#VALUE!	
65 Cu	201.05	40.21	ppb	2.99	2000.	
66 Zn	781.	156.2	ppb	2.34	2000.	
68 Zn	953.5	190.7	ppb	2.19	#VALUE!	
75 As	152.9	30.58	ppb	2.11	1000.	
82 Se	9.04	1.808	ppb	12.99	1000.	
88 Sr	3,347.5	669.5	ppb	0.30	2000.	
98 Mo	3.791	0.7582	ppb	2.33	1000.	
107 Ag	1.6435	0.3287	ppb	6.16	100.	
109 Ag	1.2485	0.2497	ppb	3.23	#VALUE!	
111 Cd	5.19	1.038	ppb	3.12	#VALUE!	
114 Cd	-0.168	-0.0336	ppb	40.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	64.15	12.83	ppb	1.07	1000.	
120 Sn	64.7	12.94	ppb	1.41	#VALUE!	
121 Sb	6.135	1.227	ppb	2.67	#VALUE!	
123 Sb	6.18	1.236	ppb	2.34	1000.	
135 Ba	6,560.	1,312.	ppb	1.02	2000.	
137 Ba	6,410.	1,282.	ppb	0.82	#VALUE!	
182 W	1.4955	0.2991	ppb	4.88	1000.	
203 Tl	7.605	1.521	ppb	2.99	1000.	
205 Tl	7.56	1.512	ppb	2.43	#VALUE!	
208 Pb	268.25	53.65	ppb	1.69	2000.	
232 Th	185.55	37.11	ppb	2.30	1000.	
238 U	33.78	6.756	ppb	1.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3522734.50	2.63	3258324.00	108.1	69.5 - 120	
45 Sc	3317643.30	1.64	2896530.80	114.5	69.5 - 120	
89 Y	4772894.00	1.63	3408096.80	140.0	69.5 - 120	IS Fai
159 Tb	3986315.00	1.49	3559216.30	112.0	69.5 - 120	
209 Bi	2021849.10	1.98	2013556.00	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000264

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\047SMPL.D\047SMPL.D#
Date Acquired: Mar 21 2018 04:43 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-008
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	24.31	2.431	ppb	0.75	100.	
11 B	370.1	37.01	ppb	2.89	1000.	
23 Na	20,990.	2,099.	ppb	2.75	200000.	
25 Mg	236,200.	23,620.	ppb	1.55	200000.	
27 Al	545,500.	54,550.	ppb	1.87	200000.	
28 Si	5,305.	530.5	ppb	9.33	#VALUE!	
29 Si	4,446.	444.6	ppb	8.76	10000.	
39 K	148,500.	14,850.	ppb	1.59	200000.	
43 Ca	1,295,000.	129,500.	ppb	2.39	#VALUE!	
44 Ca	1,255,000.	125,500.	ppb	2.02	200000.	
51 V	1,011.	101.1	ppb	1.01	1000.	
52 Cr	411.6	41.16	ppb	0.56	2000.	
53 Cr	421.3	42.13	ppb	0.21	#VALUE!	
55 Mn	2,509.	250.9	ppb	1.30	2000.	
56 Fe	387,200.	38,720.	ppb	0.96	#VALUE!	
57 Fe	382,800.	38,280.	ppb	1.67	100000.	
59 Co	114.9	11.49	ppb	0.89	1000.	
60 Ni	390.8	39.08	ppb	0.27	1000.	
63 Cu	260.8	26.08	ppb	0.56	#VALUE!	
65 Cu	264.9	26.49	ppb	1.31	2000.	
66 Zn	1,040.	104.	ppb	0.75	2000.	
68 Zn	1,263.	126.3	ppb	0.79	#VALUE!	
75 As	197.9	19.79	ppb	0.61	1000.	
82 Se	11.37	1.137	ppb	13.30	1000.	
88 Sr	4,367.	436.7	ppb	1.46	2000.	
98 Mo	4.797	0.4797	ppb	2.56	1000.	
107 Ag	2.165	0.2165	ppb	5.62	100.	
109 Ag	1.504	0.1504	ppb	2.08	#VALUE!	
111 Cd	5.789	0.5789	ppb	9.97	#VALUE!	
114 Cd	-0.0935	-0.0094	ppb	338.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	76.97	7.697	ppb	1.17	1000.	
120 Sn	78.38	7.838	ppb	0.81	#VALUE!	
121 Sb	7.404	0.7404	ppb	2.62	#VALUE!	
123 Sb	7.165	0.7165	ppb	4.25	1000.	
135 Ba	7,915.	791.5	ppb	0.29	2000.	
137 Ba	7,917.	791.7	ppb	0.27	#VALUE!	
182 W	1.722	0.1722	ppb	8.33	1000.	
203 Tl	8.879	0.8879	ppb	1.25	1000.	
205 Tl	9.034	0.9034	ppb	0.77	#VALUE!	
208 Pb	320.	32.	ppb	0.11	2000.	
232 Th	216.6	21.66	ppb	0.19	1000.	
238 U	39.57	3.957	ppb	1.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3497062.00	0.49	3258324.00	107.3	69.5 - 120	
45 Sc	3277935.30	1.38	2896530.80	113.2	69.5 - 120	
89 Y	4498752.00	0.47	3408096.80	132.0	69.5 - 120	IS Fai
159 Tb	4061105.80	0.07	3559216.30	114.1	69.5 - 120	
209 Bi	2095520.80	0.40	2013556.00	104.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000265

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\048SMPL.D\048SMPL.D#
Date Acquired: Mar 21 2018 04:47 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-009
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.58	2.516	ppb	1.48	100.	
11 B	149.15	29.83	ppb	2.94	1000.	
23 Na	9,855.	1,971.	ppb	0.89	200000.	
25 Mg	115,200.	23,040.	ppb	1.00	200000.	
27 Al	265,100.	53,020.	ppb	0.90	200000.	
28 Si	4,663.	932.6	ppb	4.40	#VALUE!	
29 Si	4,519.5	903.9	ppb	7.21	10000.	
39 K	55,750.	11,150.	ppb	0.87	200000.	
43 Ca	123,700.	24,740.	ppb	0.81	#VALUE!	
44 Ca	120,000.	24,000.	ppb	0.83	200000.	
51 V	429.85	85.97	ppb	1.03	1000.	
52 Cr	232.05	46.41	ppb	2.19	2000.	
53 Cr	254.5	50.9	ppb	1.04	#VALUE!	
55 Mn	3,883.5	776.7	ppb	0.71	2000.	
56 Fe	195,750.	39,150.	ppb	1.55	#VALUE!	
57 Fe	192,300.	38,460.	ppb	1.34	100000.	
59 Co	142.2	28.44	ppb	1.84	1000.	
60 Ni	197.85	39.57	ppb	1.80	1000.	
63 Cu	170.	34.	ppb	2.56	#VALUE!	
65 Cu	170.35	34.07	ppb	3.46	2000.	
66 Zn	629.	125.8	ppb	2.15	2000.	
68 Zn	715.	143.	ppb	1.92	#VALUE!	
75 As	25.895	5.179	ppb	5.56	1000.	
82 Se	5.565	1.113	ppb	9.84	1000.	
88 Sr	685.	137.	ppb	1.49	2000.	
98 Mo	15.03	3.006	ppb	2.20	1000.	
107 Ag	1.174	0.2348	ppb	1.28	100.	
109 Ag	0.937	0.1874	ppb	3.10	#VALUE!	
111 Cd	4.128	0.8256	ppb	7.47	#VALUE!	
114 Cd	1.6555	0.3311	ppb	7.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.2	11.04	ppb	1.10	1000.	
120 Sn	55.15	11.03	ppb	1.23	#VALUE!	
121 Sb	2.473	0.4946	ppb	1.70	#VALUE!	
123 Sb	2.5465	0.5093	ppb	4.26	1000.	
135 Ba	3,195.5	639.1	ppb	1.72	2000.	
137 Ba	3,169.	633.8	ppb	1.53	#VALUE!	
182 W	0.961	0.1922	ppb	13.76	1000.	
203 Tl	4.7415	0.9483	ppb	0.83	1000.	
205 Tl	4.591	0.9182	ppb	2.05	#VALUE!	
208 Pb	177.	35.4	ppb	1.08	2000.	
232 Th	131.2	26.24	ppb	1.08	1000.	
238 U	14.56	2.912	ppb	1.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3568063.30	2.03	3258324.00	109.5	69.5 - 120	
45 Sc	3284052.00	0.93	2896530.80	113.4	69.5 - 120	
89 Y	4519758.50	1.39	3408096.80	132.6	69.5 - 120	IS Fai
159 Tb	4120422.50	1.17	3559216.30	115.8	69.5 - 120	
209 Bi	2132628.30	1.39	2013556.00	105.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000266

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\049SMPL.D\049SMPL.D#
Date Acquired: Mar 21 2018 04:51 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-009
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.25	1.325	ppb	1.27	100.	
11 B	161.6	16.16	ppb	2.41	1000.	
23 Na	10,830.	1,083.	ppb	1.72	200000.	
25 Mg	123,900.	12,390.	ppb	0.53	200000.	
27 Al	282,600.	28,260.	ppb	0.61	200000.	
28 Si	4,476.	447.6	ppb	6.91	#VALUE!	
29 Si	3,414.	341.4	ppb	1.23	10000.	
39 K	60,270.	6,027.	ppb	0.71	200000.	
43 Ca	132,000.	13,200.	ppb	1.35	#VALUE!	
44 Ca	130,200.	13,020.	ppb	1.12	200000.	
51 V	485.	48.5	ppb	1.29	1000.	
52 Cr	270.5	27.05	ppb	0.89	2000.	
53 Cr	291.4	29.14	ppb	1.01	#VALUE!	
55 Mn	4,437.	443.7	ppb	0.61	2000.	
56 Fe	223,800.	22,380.	ppb	0.65	#VALUE!	
57 Fe	218,400.	21,840.	ppb	0.39	100000.	
59 Co	163.4	16.34	ppb	1.00	1000.	
60 Ni	230.3	23.03	ppb	0.89	1000.	
63 Cu	197.	19.7	ppb	1.00	#VALUE!	
65 Cu	198.	19.8	ppb	1.69	2000.	
66 Zn	737.9	73.79	ppb	1.46	2000.	
68 Zn	833.5	83.35	ppb	1.83	#VALUE!	
75 As	30.07	3.007	ppb	4.99	1000.	
82 Se	7.959	0.7959	ppb	43.22	1000.	
88 Sr	787.3	78.73	ppb	0.81	2000.	
98 Mo	17.64	1.764	ppb	5.47	1000.	
107 Ag	1.394	0.1394	ppb	4.56	100.	
109 Ag	1.152	0.1152	ppb	7.13	#VALUE!	
111 Cd	3.981	0.3981	ppb	8.72	#VALUE!	
114 Cd	2.021	0.2021	ppb	8.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.07	5.807	ppb	2.94	1000.	
120 Sn	58.37	5.837	ppb	0.56	#VALUE!	
121 Sb	2.899	0.2899	ppb	3.73	#VALUE!	
123 Sb	3.082	0.3082	ppb	10.86	1000.	
135 Ba	3,369.	336.9	ppb	1.29	2000.	
137 Ba	3,344.	334.4	ppb	1.16	#VALUE!	
182 W	1.044	0.1044	ppb	18.11	1000.	
203 Tl	4.919	0.4919	ppb	6.22	1000.	
205 Tl	4.925	0.4925	ppb	4.17	#VALUE!	
208 Pb	184.2	18.42	ppb	1.24	2000.	
232 Th	134.2	13.42	ppb	1.16	1000.	
238 U	15.54	1.554	ppb	2.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3599120.30	1.14	3258324.00	110.5	69.5 - 120	
45 Sc	3250900.00	0.08	2896530.80	112.2	69.5 - 120	
89 Y	4195294.00	0.16	3408096.80	123.1	69.5 - 120	IS Fai
159 Tb	4074321.50	0.62	3559216.30	114.5	69.5 - 120	
209 Bi	2163082.00	0.77	2013556.00	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000267

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\050SMPL.D\050SMPL.D#
Date Acquired: Mar 21 2018 04:55 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-010
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.23	2.646	ppb	1.16	100.	
11 B	137.85	27.57	ppb	2.24	1000.	
23 Na	16,420.	3,284.	ppb	0.22	200000.	
25 Mg	109,650.	21,930.	ppb	0.22	200000.	
27 Al	253,450.	50,690.	ppb	1.35	200000.	
28 Si	5,010.	1,002.	ppb	3.09	#VALUE!	
29 Si	4,773.	954.6	ppb	9.76	10000.	
39 K	58,750.	11,750.	ppb	0.59	200000.	
43 Ca	123,650.	24,730.	ppb	0.68	#VALUE!	
44 Ca	120,400.	24,080.	ppb	0.40	200000.	
51 V	459.15	91.83	ppb	1.14	1000.	
52 Cr	220.4	44.08	ppb	0.89	2000.	
53 Cr	241.55	48.31	ppb	0.75	#VALUE!	
55 Mn	6,240.	1,248.	ppb	0.55	2000.	
56 Fe	236,450.	47,290.	ppb	0.91	#VALUE!	
57 Fe	231,750.	46,350.	ppb	0.52	100000.	
59 Co	121.5	24.3	ppb	0.44	1000.	
60 Ni	246.8	49.36	ppb	0.87	1000.	
63 Cu	173.7	34.74	ppb	1.36	#VALUE!	
65 Cu	174.9	34.98	ppb	1.68	2000.	
66 Zn	621.5	124.3	ppb	0.90	2000.	
68 Zn	710.	142.	ppb	1.34	#VALUE!	
75 As	74.9	14.98	ppb	1.42	1000.	
82 Se	5.945	1.189	ppb	17.75	1000.	
88 Sr	691.5	138.3	ppb	1.21	2000.	
98 Mo	12.7	2.54	ppb	0.98	1000.	
107 Ag	1.0635	0.2127	ppb	7.69	100.	
109 Ag	0.855	0.171	ppb	5.85	#VALUE!	
111 Cd	3.9095	0.7819	ppb	4.47	#VALUE!	
114 Cd	0.8105	0.1621	ppb	16.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.6	10.92	ppb	1.19	1000.	
120 Sn	53.65	10.73	ppb	1.65	#VALUE!	
121 Sb	3.7455	0.7491	ppb	2.24	#VALUE!	
123 Sb	3.8375	0.7675	ppb	4.94	1000.	
135 Ba	3,198.	639.6	ppb	1.14	2000.	
137 Ba	3,178.5	635.7	ppb	1.66	#VALUE!	
182 W	1.0825	0.2165	ppb	5.77	1000.	
203 Tl	4.9465	0.9893	ppb	4.34	1000.	
205 Tl	4.9985	0.9997	ppb	1.87	#VALUE!	
208 Pb	236.85	47.37	ppb	0.69	2000.	
232 Th	125.25	25.05	ppb	0.66	1000.	
238 U	13.775	2.755	ppb	1.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3540136.50	1.61	3258324.00	108.6	69.5 - 120	
45 Sc	3255484.00	0.50	2896530.80	112.4	69.5 - 120	
89 Y	4363529.00	0.57	3408096.80	128.0	69.5 - 120	IS Fai
159 Tb	4029801.50	0.84	3559216.30	113.2	69.5 - 120	
209 Bi	2111726.00	0.41	2013556.00	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000268

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\051SMPL.D\051SMPL.D#
Date Acquired: Mar 21 2018 04:59 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-011
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.185	2.037	ppb	2.52	100.	
11 B	85.4	17.08	ppb	2.80	1000.	
23 Na	8,745.	1,749.	ppb	0.33	200000.	
25 Mg	98,150.	19,630.	ppb	0.67	200000.	
27 Al	194,550.	38,910.	ppb	1.19	200000.	
28 Si	3,373.5	674.7	ppb	17.89	#VALUE!	
29 Si	2,327.5	465.5	ppb	1.55	10000.	
39 K	43,525.	8,705.	ppb	1.28	200000.	
43 Ca	140,900.	28,180.	ppb	1.32	#VALUE!	
44 Ca	137,300.	27,460.	ppb	0.93	200000.	
51 V	327.55	65.51	ppb	1.41	1000.	
52 Cr	173.85	34.77	ppb	2.14	2000.	
53 Cr	188.3	37.66	ppb	2.52	#VALUE!	
55 Mn	4,375.5	875.1	ppb	1.96	2000.	
56 Fe	186,850.	37,370.	ppb	1.66	#VALUE!	
57 Fe	184,250.	36,850.	ppb	2.56	100000.	
59 Co	118.1	23.62	ppb	2.57	1000.	
60 Ni	220.2	44.04	ppb	2.99	1000.	
63 Cu	145.6	29.12	ppb	2.62	#VALUE!	
65 Cu	146.65	29.33	ppb	2.50	2000.	
66 Zn	495.6	99.12	ppb	3.23	2000.	
68 Zn	605.	121.	ppb	2.97	#VALUE!	
75 As	23.415	4.683	ppb	1.44	1000.	
82 Se	5.875	1.175	ppb	20.71	1000.	
88 Sr	610.	122.	ppb	1.92	2000.	
98 Mo	6.79	1.358	ppb	4.71	1000.	
107 Ag	0.8725	0.1745	ppb	8.40	100.	
109 Ag	0.6905	0.1381	ppb	6.95	#VALUE!	
111 Cd	4.2165	0.8433	ppb	3.31	#VALUE!	
114 Cd	2.0365	0.4073	ppb	3.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.4	10.08	ppb	1.05	1000.	
120 Sn	50.7	10.14	ppb	1.17	#VALUE!	
121 Sb	2.262	0.4524	ppb	3.74	#VALUE!	
123 Sb	2.2465	0.4493	ppb	3.76	1000.	
135 Ba	3,554.	710.8	ppb	0.92	2000.	
137 Ba	3,519.	703.8	ppb	0.71	#VALUE!	
182 W	0.7705	0.1541	ppb	4.57	1000.	
203 Tl	3.869	0.7738	ppb	5.68	1000.	
205 Tl	3.9795	0.7959	ppb	2.64	#VALUE!	
208 Pb	174.25	34.85	ppb	0.88	2000.	
232 Th	100.9	20.18	ppb	1.39	1000.	
238 U	10.68	2.136	ppb	0.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3556875.80	2.03	3258324.00	109.2	69.5 - 120	
45 Sc	3273666.80	1.69	2896530.80	113.0	69.5 - 120	
89 Y	4374056.50	2.68	3408096.80	128.3	69.5 - 120	IS Fai
159 Tb	4083653.30	1.44	3559216.30	114.7	69.5 - 120	
209 Bi	2153243.50	1.62	2013556.00	106.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000269

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\052SMPL.D\052SMPL.D#
Date Acquired: Mar 21 2018 05:03 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-012
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	16.945	3.389	ppb	2.29	100.	
11 B	203.45	40.69	ppb	3.24	1000.	
23 Na	3,154.5	630.9	ppb	0.31	200000.	
25 Mg	124,400.	24,880.	ppb	0.67	200000.	
27 Al	354,750.	70,950.	ppb	0.54	200000.	
28 Si	4,480.	896.	ppb	8.77	#VALUE!	
29 Si	4,088.5	817.7	ppb	1.98	10000.	
39 K	84,900.	16,980.	ppb	0.56	200000.	
43 Ca	327,400.	65,480.	ppb	0.76	#VALUE!	
44 Ca	311,600.	62,320.	ppb	0.51	200000.	
51 V	577.	115.4	ppb	1.52	1000.	
52 Cr	301.9	60.38	ppb	2.11	2000.	
53 Cr	320.8	64.16	ppb	2.33	#VALUE!	
55 Mn	4,266.5	853.3	ppb	1.41	2000.	
56 Fe	282,900.	56,580.	ppb	2.23	#VALUE!	
57 Fe	276,550.	55,310.	ppb	1.74	100000.	
59 Co	116.05	23.21	ppb	1.68	1000.	
60 Ni	339.95	67.99	ppb	2.41	1000.	
63 Cu	200.65	40.13	ppb	2.46	#VALUE!	
65 Cu	202.3	40.46	ppb	2.84	2000.	
66 Zn	803.5	160.7	ppb	2.13	2000.	
68 Zn	880.5	176.1	ppb	2.52	#VALUE!	
75 As	52.5	10.5	ppb	1.19	1000.	
82 Se	6.805	1.361	ppb	14.39	1000.	
88 Sr	1,443.	288.6	ppb	1.03	2000.	
98 Mo	6.21	1.242	ppb	0.16	1000.	
107 Ag	1.349	0.2698	ppb	4.56	100.	
109 Ag	1.0535	0.2107	ppb	3.84	#VALUE!	
111 Cd	3.923	0.7846	ppb	6.47	#VALUE!	
114 Cd	0.3012	0.0602	ppb	42.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.4	11.68	ppb	1.56	1000.	
120 Sn	57.65	11.53	ppb	1.72	#VALUE!	
121 Sb	3.9895	0.7979	ppb	4.88	#VALUE!	
123 Sb	4.007	0.8014	ppb	7.20	1000.	
135 Ba	3,219.	643.8	ppb	0.86	2000.	
137 Ba	3,183.5	636.7	ppb	0.56	#VALUE!	
182 W	1.01	0.202	ppb	8.78	1000.	
203 Tl	5.96	1.192	ppb	1.59	1000.	
205 Tl	6.075	1.215	ppb	1.70	#VALUE!	
208 Pb	209.35	41.87	ppb	0.44	2000.	
232 Th	163.2	32.64	ppb	0.55	1000.	
238 U	18.99	3.798	ppb	1.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3571408.80	1.87	3258324.00	109.6	69.5 - 120	
45 Sc	3325814.80	1.50	2896530.80	114.8	69.5 - 120	
89 Y	4556349.50	1.07	3408096.80	133.7	69.5 - 120	IS Fai
159 Tb	4038767.00	0.54	3559216.30	113.5	69.5 - 120	
209 Bi	2086363.90	0.20	2013556.00	103.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000270

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\053SMPL.D\053SMPL.D#
Date Acquired: Mar 21 2018 05:07 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	397.79	100.	
11 B	0.9657	0.9657	ppb	13.26	1000.	
23 Na	-0.3948	-0.3948	ppb	67.07	200000.	
25 Mg	1.193	1.193	ppb	27.91	200000.	
27 Al	1.404	1.404	ppb	32.02	200000.	
28 Si	-41.38	-41.38	ppb	71.77	#VALUE!	
29 Si	-130.6	-130.6	ppb	18.91	10000.	LOW
39 K	-10.4	-10.4	ppb	4.19	200000.	
43 Ca	3.927	3.927	ppb	21.93	#VALUE!	
44 Ca	-0.5436	-0.5436	ppb	396.98	200000.	
51 V	-0.0522	-0.0522	ppb	173.82	1000.	
52 Cr	-0.0473	-0.0473	ppb	12.19	2000.	
53 Cr	0.0941	0.0941	ppb	202.70	#VALUE!	
55 Mn	0.014	0.014	ppb	103.44	2000.	
56 Fe	-7.754	-7.754	ppb	21.09	#VALUE!	
57 Fe	-8.275	-8.275	ppb	18.84	100000.	
59 Co	-0.01	-0.01	ppb	47.05	1000.	
60 Ni	-0.0009	-0.0009	ppb	748.64	1000.	
63 Cu	-0.0017	-0.0017	ppb	140.42	#VALUE!	
65 Cu	0.0129	0.0129	ppb	33.71	2000.	
66 Zn	0.0508	0.0508	ppb	91.65	2000.	
68 Zn	-0.2107	-0.2107	ppb	61.79	#VALUE!	
75 As	-0.0142	-0.0142	ppb	697.53	1000.	
82 Se	0.1319	0.1319	ppb	249.51	1000.	
88 Sr	0.0053	0.0053	ppb	77.07	2000.	
98 Mo	0.003	0.003	ppb	33.53	1000.	
107 Ag	0.0005	0.0005	ppb	265.25	100.	
109 Ag	0.0003	0.0003	ppb	212.22	#VALUE!	
111 Cd	-0.1103	-0.1103	ppb	33.73	#VALUE!	
114 Cd	0.0012	0.0012	ppb	529.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0003	0.0003	ppb	2963.00	1000.	
120 Sn	-0.0161	-0.0161	ppb	61.96	#VALUE!	
121 Sb	-0.0038	-0.0038	ppb	28.62	#VALUE!	
123 Sb	-0.0025	-0.0025	ppb	55.83	1000.	
135 Ba	0.0226	0.0226	ppb	79.98	2000.	
137 Ba	0.0263	0.0263	ppb	55.71	#VALUE!	
182 W	-0.0076	-0.0076	ppb	49.79	1000.	
203 Tl	0.0035	0.0035	ppb	137.01	1000.	
205 Tl	0.0019	0.0019	ppb	76.31	#VALUE!	
208 Pb	0.0112	0.0112	ppb	24.94	2000.	
232 Th	0.0052	0.0052	ppb	31.06	1000.	
238 U	-0.0002	-0.0002	ppb	161.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3310079.00	1.20	3258324.00	101.6	69.5 - 120	
45 Sc	2906017.80	0.54	2896530.80	100.3	69.5 - 120	
89 Y	3529924.00	0.51	3408096.80	103.6	69.5 - 120	
159 Tb	3669283.30	0.36	3559216.30	103.1	69.5 - 120	
209 Bi	2030238.90	0.39	2013556.00	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000271

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\054_CCV.D\054_CCV.D#
Date Acquired: Mar 21 2018 05:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.88	ppb	1.25	25	99.52	
11 B	25.06	ppb	1.29	25	100.24	
23 Na	4,840.	ppb	3.13	5,000	96.8	
25 Mg	4,935.	ppb	1.67	5,000	98.7	
27 Al	502.8	ppb	1.26	500	100.56	
28 Si	460.3	ppb	3.80	500	92.06	
29 Si	360.	ppb	6.61	500	72	Fail
39 K	5,032.	ppb	1.94	5,000	100.64	
43 Ca	5,014.	ppb	3.31	5,000	100.28	
44 Ca	5,148.	ppb	1.99	5,000	102.96	
51 V	24.56	ppb	1.43	25	98.24	
52 Cr	24.68	ppb	2.21	25	98.72	
53 Cr	24.62	ppb	3.91	25	98.48	
55 Mn	24.9	ppb	1.09	25	99.6	
56 Fe	4,922.	ppb	1.88	5,000	98.44	
57 Fe	5,095.	ppb	2.83	5,000	101.9	
59 Co	24.67	ppb	1.91	25	98.68	
60 Ni	24.66	ppb	1.03	25	98.64	
63 Cu	24.83	ppb	2.50	25	99.32	
65 Cu	24.72	ppb	2.57	25	98.88	
66 Zn	24.73	ppb	2.55	25	98.92	
68 Zn	24.55	ppb	3.83	25	98.2	
75 As	24.28	ppb	2.18	25	97.12	
82 Se	25.2	ppb	3.71	25	100.8	
88 Sr	25.33	ppb	3.20	25	101.32	
98 Mo	24.97	ppb	1.97	25	99.88	
107 Ag	25.55	ppb	2.85	25	102.2	
109 Ag	25.67	ppb	2.98	25	102.68	
111 Cd	25.5	ppb	2.34	25	102	
114 Cd	25.71	ppb	1.89	25	102.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.69	ppb	0.49	25	102.76	
120 Sn	25.95	ppb	2.00	25	103.8	
121 Sb	25.98	ppb	1.79	25	103.92	
123 Sb	25.78	ppb	2.80	25	103.12	
135 Ba	26.04	ppb	1.46	25	104.16	
137 Ba	25.83	ppb	1.67	25	103.32	
182 W	25.1	ppb	2.25	25	100.4	
203 Tl	25.26	ppb	1.88	25	101.04	
205 Tl	25.44	ppb	2.67	25	101.76	
208 Pb	25.39	ppb	1.76	25	101.56	
232 Th	24.86	ppb	0.87	25	99.44	
238 U	24.66	ppb	1.66	25	98.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3467204.30	0.62	3258324.00	106.4	80 - 120.4	
45 Sc	3103633.50	1.40	2896530.80	107.2	80 - 120.4	
89 Y	3775505.80	1.30	3408096.80	110.8	80 - 120.4	
159 Tb	3892835.00	0.82	3559216.30	109.4	80 - 120.4	
209 Bi	2150264.80	0.72	2013556.00	106.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000272

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\055_CCB.D\055_CCB.D#
Date Acquired: Mar 21 2018 05:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0005	ppb	627.70	1.00	
11 B	0.8987	ppb	1.77	1.00	
23 Na	-0.7971	ppb	15.68	1.00	
25 Mg	0.2165	ppb	33.59	1.00	
27 Al	0.4789	ppb	16.50	1.00	
28 Si	-0.0967	ppb	54211.00	1.00	
29 Si	-77.4	ppb	45.27	1.00	
39 K	-5.951	ppb	26.08	1.00	
43 Ca	0.4047	ppb	566.10	1.00	
44 Ca	-3.063	ppb	40.71	1.00	
51 V	-0.0602	ppb	77.37	1.00	
52 Cr	-0.0474	ppb	51.83	1.00	
53 Cr	0.1845	ppb	58.43	1.00	
55 Mn	0.0116	ppb	12.74	1.00	
56 Fe	-8.632	ppb	15.14	1.00	
57 Fe	-3.997	ppb	40.23	1.00	
59 Co	-0.008	ppb	19.21	1.00	
60 Ni	-0.0027	ppb	70.27	1.00	
63 Cu	-0.004	ppb	108.69	1.00	
65 Cu	0.0055	ppb	117.36	1.00	
66 Zn	-0.0173	ppb	70.80	1.00	
68 Zn	-0.342	ppb	48.89	1.00	
75 As	-0.0556	ppb	182.05	1.00	
82 Se	-0.0618	ppb	88.35	1.00	
88 Sr	-0.0028	ppb	101.22	1.00	
98 Mo	0.0122	ppb	29.81	1.00	
107 Ag	0.0007	ppb	271.21	1.00	
109 Ag	-0.0006	ppb	359.95	1.00	
111 Cd	-0.1256	ppb	25.63	1.00	
114 Cd	-0.0002	ppb	1570.50	1.00	
115 In	--------	---	--------	---	
118 Sn	0.029	ppb	43.66	1.00	
120 Sn	0.0203	ppb	32.95	1.00	
121 Sb	-0.0014	ppb	246.02	1.00	
123 Sb	-0.0016	ppb	328.21	1.00	
135 Ba	0.0216	ppb	23.01	1.00	
137 Ba	0.0175	ppb	16.90	1.00	
182 W	0.011	ppb	47.21	1.00	
203 Tl	0.0035	ppb	138.18	1.00	
205 Tl	0.0041	ppb	50.92	1.00	
208 Pb	0.0073	ppb	30.63	1.00	
232 Th	0.014	ppb	20.74	1.00	
238 U	0.0024	ppb	69.88	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3250075.30	0.79	3258324.00	99.7	79.5 - 120	
45 Sc	2864311.30	1.07	2896530.80	98.9	79.5 - 120	
89 Y	3507527.00	1.09	3408096.80	102.9	79.5 - 120	
159 Tb	3651883.80	0.88	3559216.30	102.6	79.5 - 120	
209 Bi	2032598.50	0.57	2013556.00	100.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000273

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\056SMPL.D\056SMPL.D#
Date Acquired: Mar 21 2018 05:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-012
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	20.27	2.027	ppb	0.70	100.	
11 B	245.1	24.51	ppb	1.87	1000.	
23 Na	3,814.	381.4	ppb	1.46	200000.	
25 Mg	151,600.	15,160.	ppb	2.43	200000.	
27 Al	431,800.	43,180.	ppb	0.50	200000.	
28 Si	4,896.	489.6	ppb	12.84	#VALUE!	
29 Si	3,802.	380.2	ppb	3.45	10000.	
39 K	102,200.	10,220.	ppb	1.09	200000.	
43 Ca	383,600.	38,360.	ppb	0.52	#VALUE!	
44 Ca	373,400.	37,340.	ppb	0.87	200000.	
51 V	727.5	72.75	ppb	0.87	1000.	
52 Cr	378.3	37.83	ppb	1.28	2000.	
53 Cr	399.4	39.94	ppb	1.96	#VALUE!	
55 Mn	5,410.	541.	ppb	0.57	2000.	
56 Fe	357,500.	35,750.	ppb	0.70	#VALUE!	
57 Fe	347,800.	34,780.	ppb	0.89	100000.	
59 Co	147.	14.7	ppb	0.75	1000.	
60 Ni	430.8	43.08	ppb	0.80	1000.	
63 Cu	254.6	25.46	ppb	1.91	#VALUE!	
65 Cu	258.4	25.84	ppb	1.04	2000.	
66 Zn	1,034.	103.4	ppb	1.72	2000.	
68 Zn	1,128.	112.8	ppb	1.10	#VALUE!	
75 As	67.69	6.769	ppb	1.23	1000.	
82 Se	11.47	1.147	ppb	12.43	1000.	
88 Sr	1,826.	182.6	ppb	0.38	2000.	
98 Mo	7.521	0.7521	ppb	1.93	1000.	
107 Ag	1.614	0.1614	ppb	8.44	100.	
109 Ag	1.317	0.1317	ppb	10.95	#VALUE!	
111 Cd	4.834	0.4834	ppb	8.04	#VALUE!	
114 Cd	0.3444	0.0344	ppb	114.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	67.46	6.746	ppb	0.54	1000.	
120 Sn	67.71	6.771	ppb	0.70	#VALUE!	
121 Sb	4.711	0.4711	ppb	5.65	#VALUE!	
123 Sb	5.142	0.5142	ppb	2.27	1000.	
135 Ba	3,785.	378.5	ppb	0.48	2000.	
137 Ba	3,793.	379.3	ppb	0.84	#VALUE!	
182 W	1.227	0.1227	ppb	19.28	1000.	
203 Tl	6.815	0.6815	ppb	4.10	1000.	
205 Tl	7.039	0.7039	ppb	1.42	#VALUE!	
208 Pb	242.8	24.28	ppb	1.28	2000.	
232 Th	186.2	18.62	ppb	1.22	1000.	
238 U	21.73	2.173	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3572658.30	0.94	3258324.00	109.6	69.5 - 120	
45 Sc	3268968.50	0.31	2896530.80	112.9	69.5 - 120	
89 Y	4314532.00	0.26	3408096.80	126.6	69.5 - 120	IS Fai
159 Tb	4047768.80	0.42	3559216.30	113.7	69.5 - 120	
209 Bi	2130430.50	0.53	2013556.00	105.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000274

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\057SMPL.D\057SMPL.D#
Date Acquired: Mar 21 2018 05:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-013
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.125	2.025	ppb	2.30	100.	
11 B	116.85	23.37	ppb	3.63	1000.	
23 Na	1,956.	391.2	ppb	2.59	200000.	
25 Mg	93,000.	18,600.	ppb	1.58	200000.	
27 Al	213,850.	42,770.	ppb	0.76	200000.	
28 Si	4,641.5	928.3	ppb	7.55	#VALUE!	
29 Si	4,224.	844.8	ppb	1.37	10000.	
39 K	47,220.	9,444.	ppb	0.80	200000.	
43 Ca	216,900.	43,380.	ppb	2.18	#VALUE!	
44 Ca	205,250.	41,050.	ppb	1.33	200000.	
51 V	359.25	71.85	ppb	3.15	1000.	
52 Cr	192.3	38.46	ppb	2.86	2000.	
53 Cr	215.3	43.06	ppb	1.22	#VALUE!	
55 Mn	1,745.	349.	ppb	2.27	2000.	
56 Fe	175,650.	35,130.	ppb	2.90	#VALUE!	
57 Fe	172,750.	34,550.	ppb	2.47	100000.	
59 Co	48.33	9.666	ppb	3.45	1000.	
60 Ni	125.4	25.08	ppb	2.74	1000.	
63 Cu	139.9	27.98	ppb	3.41	#VALUE!	
65 Cu	141.75	28.35	ppb	3.04	2000.	
66 Zn	509.5	101.9	ppb	3.40	2000.	
68 Zn	601.5	120.3	ppb	4.18	#VALUE!	
75 As	25.47	5.094	ppb	3.85	1000.	
82 Se	2.603	0.5206	ppb	18.44	1000.	
88 Sr	657.	131.4	ppb	1.71	2000.	
98 Mo	2.371	0.4742	ppb	6.13	1000.	
107 Ag	1.0095	0.2019	ppb	7.94	100.	
109 Ag	0.8035	0.1607	ppb	6.47	#VALUE!	
111 Cd	2.635	0.527	ppb	1.98	#VALUE!	
114 Cd	0.1285	0.0257	ppb	34.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.65	10.53	ppb	1.02	1000.	
120 Sn	53.25	10.65	ppb	0.99	#VALUE!	
121 Sb	2.155	0.431	ppb	6.45	#VALUE!	
123 Sb	2.1735	0.4347	ppb	3.66	1000.	
135 Ba	3,236.5	647.3	ppb	1.10	2000.	
137 Ba	3,226.	645.2	ppb	1.49	#VALUE!	
182 W	0.652	0.1304	ppb	5.64	1000.	
203 Tl	3.683	0.7366	ppb	5.17	1000.	
205 Tl	3.63	0.726	ppb	2.19	#VALUE!	
208 Pb	144.5	28.9	ppb	0.78	2000.	
232 Th	101.7	20.34	ppb	1.12	1000.	
238 U	10.985	2.197	ppb	1.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3595874.00	1.14	3258324.00	110.4	69.5 - 120	
45 Sc	3264368.50	0.50	2896530.80	112.7	69.5 - 120	
89 Y	4385531.00	2.03	3408096.80	128.7	69.5 - 120	IS Fai
159 Tb	4067158.80	0.90	3559216.30	114.3	69.5 - 120	
209 Bi	2121949.00	0.50	2013556.00	105.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000275

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\058SMPL.D\058SMPL.D#
Date Acquired: Mar 21 2018 05:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-013
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.61	1.061	ppb	2.47	100.	
11 B	118.3	11.83	ppb	3.16	1000.	
23 Na	1,999.	199.9	ppb	1.44	200000.	
25 Mg	93,310.	9,331.	ppb	1.04	200000.	
27 Al	215,300.	21,530.	ppb	0.89	200000.	
28 Si	4,693.	469.3	ppb	10.86	#VALUE!	
29 Si	2,982.	298.2	ppb	10.14	10000.	
39 K	47,940.	4,794.	ppb	0.49	200000.	
43 Ca	210,000.	21,000.	ppb	1.03	#VALUE!	
44 Ca	203,600.	20,360.	ppb	0.54	200000.	
51 V	370.2	37.02	ppb	0.96	1000.	
52 Cr	203.4	20.34	ppb	1.40	2000.	
53 Cr	225.8	22.58	ppb	3.74	#VALUE!	
55 Mn	1,864.	186.4	ppb	0.75	2000.	
56 Fe	184,700.	18,470.	ppb	1.78	#VALUE!	
57 Fe	183,100.	18,310.	ppb	1.55	100000.	
59 Co	51.14	5.114	ppb	0.68	1000.	
60 Ni	133.1	13.31	ppb	1.52	1000.	
63 Cu	149.9	14.99	ppb	1.02	#VALUE!	
65 Cu	152.1	15.21	ppb	1.15	2000.	
66 Zn	553.7	55.37	ppb	0.95	2000.	
68 Zn	646.9	64.69	ppb	2.10	#VALUE!	
75 As	26.02	2.602	ppb	8.94	1000.	
82 Se	3.609	0.3609	ppb	27.79	1000.	
88 Sr	693.1	69.31	ppb	1.27	2000.	
98 Mo	2.506	0.2506	ppb	6.88	1000.	
107 Ag	1.113	0.1113	ppb	8.51	100.	
109 Ag	0.8743	0.0874	ppb	4.13	#VALUE!	
111 Cd	2.015	0.2015	ppb	15.16	#VALUE!	
114 Cd	0.1744	0.0174	ppb	91.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.97	5.197	ppb	1.58	1000.	
120 Sn	51.4	5.14	ppb	1.57	#VALUE!	
121 Sb	1.949	0.1949	ppb	2.56	#VALUE!	
123 Sb	2.088	0.2088	ppb	4.23	1000.	
135 Ba	3,166.	316.6	ppb	1.05	2000.	
137 Ba	3,140.	314.	ppb	1.35	#VALUE!	
182 W	0.5188	0.0519	ppb	7.22	1000.	
203 Tl	3.604	0.3604	ppb	6.87	1000.	
205 Tl	3.49	0.349	ppb	2.76	#VALUE!	
208 Pb	140.6	14.06	ppb	1.07	2000.	
232 Th	96.62	9.662	ppb	0.73	1000.	
238 U	10.42	1.042	ppb	0.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3555592.80	0.45	3258324.00	109.1	69.5 - 120	
45 Sc	3232845.30	0.66	2896530.80	111.6	69.5 - 120	
89 Y	4154403.30	1.59	3408096.80	121.9	69.5 - 120	IS Fai
159 Tb	4092614.00	1.12	3559216.30	115.0	69.5 - 120	
209 Bi	2184957.30	0.25	2013556.00	108.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000276

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\059SMPL.D\059SMPL.D#
Date Acquired: Mar 21 2018 05:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-014
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.54	1.508	ppb	2.01	100.	
11 B	79.95	15.99	ppb	4.25	1000.	
23 Na	979.	195.8	ppb	0.36	200000.	
25 Mg	39,525.	7,905.	ppb	1.29	200000.	
27 Al	165,450.	33,090.	ppb	0.57	200000.	
28 Si	3,543.	708.6	ppb	7.59	#VALUE!	
29 Si	3,159.	631.8	ppb	2.52	10000.	
39 K	39,815.	7,963.	ppb	1.10	200000.	
43 Ca	29,850.	5,970.	ppb	1.84	#VALUE!	
44 Ca	29,785.	5,957.	ppb	1.15	200000.	
51 V	248.7	49.74	ppb	0.87	1000.	
52 Cr	128.	25.6	ppb	0.91	2000.	
53 Cr	148.2	29.64	ppb	1.57	#VALUE!	
55 Mn	2,235.5	447.1	ppb	1.19	2000.	
56 Fe	129,150.	25,830.	ppb	1.62	#VALUE!	
57 Fe	126,600.	25,320.	ppb	1.02	100000.	
59 Co	49.295	9.859	ppb	1.66	1000.	
60 Ni	103.9	20.78	ppb	0.16	1000.	
63 Cu	87.75	17.55	ppb	0.75	#VALUE!	
65 Cu	89.6	17.92	ppb	0.82	2000.	
66 Zn	356.95	71.39	ppb	0.29	2000.	
68 Zn	403.6	80.72	ppb	0.51	#VALUE!	
75 As	31.06	6.212	ppb	3.42	1000.	
82 Se	4.9035	0.9807	ppb	24.33	1000.	
88 Sr	322.2	64.44	ppb	1.39	2000.	
98 Mo	4.136	0.8272	ppb	5.22	1000.	
107 Ag	0.6885	0.1377	ppb	3.02	100.	
109 Ag	0.57	0.114	ppb	12.75	#VALUE!	
111 Cd	2.45	0.49	ppb	10.97	#VALUE!	
114 Cd	0.7925	0.1585	ppb	2.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.18	9.836	ppb	0.33	1000.	
120 Sn	49.84	9.968	ppb	0.52	#VALUE!	
121 Sb	1.8985	0.3797	ppb	3.11	#VALUE!	
123 Sb	1.8515	0.3703	ppb	5.55	1000.	
135 Ba	1,724.5	344.9	ppb	0.64	2000.	
137 Ba	1,713.	342.6	ppb	0.41	#VALUE!	
182 W	0.797	0.1594	ppb	17.23	1000.	
203 Tl	2.5655	0.5131	ppb	6.43	1000.	
205 Tl	2.513	0.5026	ppb	6.61	#VALUE!	
208 Pb	109.9	21.98	ppb	0.78	2000.	
232 Th	74.95	14.99	ppb	0.47	1000.	
238 U	9.825	1.965	ppb	1.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3560179.00	1.84	3258324.00	109.3	69.5 - 120	
45 Sc	3243993.50	1.08	2896530.80	112.0	69.5 - 120	
89 Y	4198454.00	0.80	3408096.80	123.2	69.5 - 120	IS Fai
159 Tb	4056287.50	0.51	3559216.30	114.0	69.5 - 120	
209 Bi	2161839.80	0.37	2013556.00	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000277

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\060SMPL.D\060SMPL.D#
Date Acquired: Mar 21 2018 05:36 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-015
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.195	1.439	ppb	2.37	100.	
11 B	92.35	18.47	ppb	4.19	1000.	
23 Na	1,020.5	204.1	ppb	0.42	200000.	
25 Mg	40,885.	8,177.	ppb	0.94	200000.	
27 Al	147,700.	29,540.	ppb	0.63	200000.	
28 Si	3,316.5	663.3	ppb	10.83	#VALUE!	
29 Si	2,748.	549.6	ppb	3.12	10000.	
39 K	48,455.	9,691.	ppb	1.11	200000.	
43 Ca	45,370.	9,074.	ppb	0.98	#VALUE!	
44 Ca	44,960.	8,992.	ppb	1.56	200000.	
51 V	225.35	45.07	ppb	2.06	1000.	
52 Cr	140.25	28.05	ppb	1.60	2000.	
53 Cr	158.1	31.62	ppb	0.34	#VALUE!	
55 Mn	2,457.5	491.5	ppb	1.95	2000.	
56 Fe	124,150.	24,830.	ppb	1.65	#VALUE!	
57 Fe	122,350.	24,470.	ppb	1.63	100000.	
59 Co	53.	10.6	ppb	1.95	1000.	
60 Ni	114.25	22.85	ppb	1.37	1000.	
63 Cu	255.55	51.11	ppb	1.85	#VALUE!	
65 Cu	259.6	51.92	ppb	2.06	2000.	
66 Zn	638.	127.6	ppb	1.72	2000.	
68 Zn	690.	138.	ppb	2.62	#VALUE!	
75 As	28.275	5.655	ppb	3.74	1000.	
82 Se	5.45	1.09	ppb	15.29	1000.	
88 Sr	428.7	85.74	ppb	1.51	2000.	
98 Mo	4.21	0.842	ppb	2.26	1000.	
107 Ag	2.556	0.5112	ppb	2.81	100.	
109 Ag	2.525	0.505	ppb	3.43	#VALUE!	
111 Cd	35.73	7.146	ppb	0.60	#VALUE!	
114 Cd	34.095	6.819	ppb	0.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	60.95	12.19	ppb	0.77	1000.	
120 Sn	60.	12.	ppb	0.16	#VALUE!	
121 Sb	2.7035	0.5407	ppb	2.66	#VALUE!	
123 Sb	2.774	0.5548	ppb	3.13	1000.	
135 Ba	1,907.	381.4	ppb	0.79	2000.	
137 Ba	1,908.5	381.7	ppb	0.83	#VALUE!	
182 W	1.0915	0.2183	ppb	7.02	1000.	
203 Tl	2.584	0.5168	ppb	4.22	1000.	
205 Tl	2.601	0.5202	ppb	2.45	#VALUE!	
208 Pb	244.25	48.85	ppb	0.99	2000.	
232 Th	76.85	15.37	ppb	1.29	1000.	
238 U	13.805	2.761	ppb	2.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3598605.80	1.31	3258324.00	110.4	69.5 - 120	
45 Sc	3245921.00	0.71	2896530.80	112.1	69.5 - 120	
89 Y	4205381.00	1.37	3408096.80	123.4	69.5 - 120	IS Fai
159 Tb	4077879.50	0.09	3559216.30	114.6	69.5 - 120	
209 Bi	2169198.00	1.08	2013556.00	107.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000278

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\061SMPL.D\061SMPL.D#
Date Acquired: Mar 21 2018 05:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-016
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.34	1.668	ppb	1.12	100.	
11 B	139.2	27.84	ppb	3.90	1000.	
23 Na	2,227.	445.4	ppb	5.05	200000.	
25 Mg	54,000.	10,800.	ppb	0.73	200000.	
27 Al	180,750.	36,150.	ppb	0.94	200000.	
28 Si	3,115.5	623.1	ppb	6.02	#VALUE!	
29 Si	2,736.	547.2	ppb	4.37	10000.	
39 K	64,050.	12,810.	ppb	0.70	200000.	
43 Ca	35,455.	7,091.	ppb	0.82	#VALUE!	
44 Ca	35,345.	7,069.	ppb	0.48	200000.	
51 V	262.8	52.56	ppb	2.15	1000.	
52 Cr	193.8	38.76	ppb	1.85	2000.	
53 Cr	212.4	42.48	ppb	1.19	#VALUE!	
55 Mn	2,893.5	578.7	ppb	1.00	2000.	
56 Fe	139,650.	27,930.	ppb	0.51	#VALUE!	
57 Fe	136,350.	27,270.	ppb	0.32	100000.	
59 Co	69.1	13.82	ppb	0.17	1000.	
60 Ni	144.	28.8	ppb	1.52	1000.	
63 Cu	355.	71.	ppb	1.83	#VALUE!	
65 Cu	357.2	71.44	ppb	1.33	2000.	
66 Zn	931.5	186.3	ppb	1.35	2000.	
68 Zn	975.	195.	ppb	1.07	#VALUE!	
75 As	30.615	6.123	ppb	3.19	1000.	
82 Se	5.67	1.134	ppb	6.47	1000.	
88 Sr	466.45	93.29	ppb	1.00	2000.	
98 Mo	5.75	1.15	ppb	10.21	1000.	
107 Ag	4.9205	0.9841	ppb	3.81	100.	
109 Ag	4.7745	0.9549	ppb	2.65	#VALUE!	
111 Cd	105.8	21.16	ppb	1.25	#VALUE!	
114 Cd	103.85	20.77	ppb	1.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	66.75	13.35	ppb	1.62	1000.	
120 Sn	67.35	13.47	ppb	1.40	#VALUE!	
121 Sb	5.405	1.081	ppb	4.52	#VALUE!	
123 Sb	5.61	1.122	ppb	0.93	1000.	
135 Ba	2,173.	434.6	ppb	1.58	2000.	
137 Ba	2,162.	432.4	ppb	1.18	#VALUE!	
182 W	2.0395	0.4079	ppb	4.82	1000.	
203 Tl	3.105	0.621	ppb	5.23	1000.	
205 Tl	3.0755	0.6151	ppb	5.60	#VALUE!	
208 Pb	568.5	113.7	ppb	1.04	2000.	
232 Th	85.45	17.09	ppb	0.72	1000.	
238 U	13.75	2.75	ppb	3.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3550158.80	1.51	3258324.00	109.0	69.5 - 120	
45 Sc	3224126.30	0.41	2896530.80	111.3	69.5 - 120	
89 Y	4271513.00	0.74	3408096.80	125.3	69.5 - 120	IS Fai
159 Tb	4041452.80	0.72	3559216.30	113.5	69.5 - 120	
209 Bi	2135951.30	0.70	2013556.00	106.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000279

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\062SMPL.D\062SMPL.D#
Date Acquired: Mar 21 2018 05:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-017
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.61	1.122	ppb	3.25	100.	
11 B	87.95	17.59	ppb	3.08	1000.	
23 Na	1,104.	220.8	ppb	2.69	200000.	
25 Mg	35,150.	7,030.	ppb	0.98	200000.	
27 Al	123,050.	24,610.	ppb	1.12	200000.	
28 Si	4,900.5	980.1	ppb	11.62	#VALUE!	
29 Si	3,982.	796.4	ppb	2.90	10000.	
39 K	43,445.	8,689.	ppb	1.25	200000.	
43 Ca	23,645.	4,729.	ppb	2.17	#VALUE!	
44 Ca	23,545.	4,709.	ppb	0.82	200000.	
51 V	199.35	39.87	ppb	2.17	1000.	
52 Cr	107.4	21.48	ppb	2.39	2000.	
53 Cr	127.85	25.57	ppb	2.33	#VALUE!	
55 Mn	2,003.	400.6	ppb	1.47	2000.	
56 Fe	96,100.	19,220.	ppb	1.52	#VALUE!	
57 Fe	94,250.	18,850.	ppb	1.99	100000.	
59 Co	44.44	8.888	ppb	1.38	1000.	
60 Ni	84.	16.8	ppb	1.80	1000.	
63 Cu	159.3	31.86	ppb	1.97	#VALUE!	
65 Cu	160.6	32.12	ppb	3.07	2000.	
66 Zn	379.85	75.97	ppb	1.82	2000.	
68 Zn	412.55	82.51	ppb	2.88	#VALUE!	
75 As	20.38	4.076	ppb	3.02	1000.	
82 Se	4.58	0.916	ppb	1.84	1000.	
88 Sr	329.1	65.82	ppb	1.04	2000.	
98 Mo	7.025	1.405	ppb	4.26	1000.	
107 Ag	2.3405	0.4681	ppb	4.68	100.	
109 Ag	2.193	0.4386	ppb	2.15	#VALUE!	
111 Cd	4.978	0.9956	ppb	8.33	#VALUE!	
114 Cd	3.734	0.7468	ppb	1.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.25	10.45	ppb	1.36	1000.	
120 Sn	51.3	10.26	ppb	0.45	#VALUE!	
121 Sb	1.8805	0.3761	ppb	1.78	#VALUE!	
123 Sb	1.8735	0.3747	ppb	3.88	1000.	
135 Ba	1,344.5	268.9	ppb	0.38	2000.	
137 Ba	1,340.	268.	ppb	1.26	#VALUE!	
182 W	0.7915	0.1583	ppb	2.89	1000.	
203 Tl	2.1685	0.4337	ppb	4.76	1000.	
205 Tl	2.2375	0.4475	ppb	0.47	#VALUE!	
208 Pb	132.6	26.52	ppb	1.33	2000.	
232 Th	71.45	14.29	ppb	1.48	1000.	
238 U	10.7	2.14	ppb	1.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3507587.50	2.91	3258324.00	107.7	69.5 - 120	
45 Sc	3138119.00	0.67	2896530.80	108.3	69.5 - 120	
89 Y	4120462.50	1.23	3408096.80	120.9	69.5 - 120	IS Fai
159 Tb	3991743.80	0.31	3559216.30	112.2	69.5 - 120	
209 Bi	2146754.30	1.04	2013556.00	106.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000280

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\063SMPL.D\063SMPL.D#
Date Acquired: Mar 21 2018 05:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-018
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.89	1.378	ppb	1.57	100.	
11 B	115.9	23.18	ppb	3.20	1000.	
23 Na	2,006.5	401.3	ppb	1.50	200000.	
25 Mg	43,840.	8,768.	ppb	1.74	200000.	
27 Al	146,550.	29,310.	ppb	1.21	200000.	
28 Si	4,056.5	811.3	ppb	6.77	#VALUE!	
29 Si	3,517.5	703.5	ppb	5.51	10000.	
39 K	52,350.	10,470.	ppb	0.86	200000.	
43 Ca	26,505.	5,301.	ppb	2.21	#VALUE!	
44 Ca	26,255.	5,251.	ppb	1.44	200000.	
51 V	230.1	46.02	ppb	1.13	1000.	
52 Cr	124.95	24.99	ppb	1.97	2000.	
53 Cr	144.75	28.95	ppb	2.50	#VALUE!	
55 Mn	2,508.5	501.7	ppb	3.24	2000.	
56 Fe	116,950.	23,390.	ppb	2.03	#VALUE!	
57 Fe	114,900.	22,980.	ppb	2.57	100000.	
59 Co	53.	10.6	ppb	2.16	1000.	
60 Ni	102.65	20.53	ppb	1.73	1000.	
63 Cu	102.85	20.57	ppb	3.10	#VALUE!	
65 Cu	103.7	20.74	ppb	2.70	2000.	
66 Zn	378.25	75.65	ppb	1.77	2000.	
68 Zn	418.1	83.62	ppb	2.23	#VALUE!	
75 As	26.32	5.264	ppb	0.69	1000.	
82 Se	6.085	1.217	ppb	16.74	1000.	
88 Sr	400.45	80.09	ppb	1.29	2000.	
98 Mo	7.175	1.435	ppb	1.36	1000.	
107 Ag	1.7605	0.3521	ppb	5.50	100.	
109 Ag	1.7745	0.3549	ppb	0.34	#VALUE!	
111 Cd	3.8725	0.7745	ppb	12.15	#VALUE!	
114 Cd	1.727	0.3454	ppb	4.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.75	10.15	ppb	1.13	1000.	
120 Sn	51.	10.2	ppb	1.30	#VALUE!	
121 Sb	2.0235	0.4047	ppb	7.63	#VALUE!	
123 Sb	2.047	0.4094	ppb	10.27	1000.	
135 Ba	1,607.	321.4	ppb	1.47	2000.	
137 Ba	1,599.5	319.9	ppb	1.64	#VALUE!	
182 W	0.8825	0.1765	ppb	9.97	1000.	
203 Tl	2.6605	0.5321	ppb	3.83	1000.	
205 Tl	2.606	0.5212	ppb	0.54	#VALUE!	
208 Pb	138.35	27.67	ppb	1.28	2000.	
232 Th	86.5	17.3	ppb	0.71	1000.	
238 U	13.82	2.764	ppb	0.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3626777.80	3.12	3258324.00	111.3	69.5 - 120	
45 Sc	3233561.00	1.78	2896530.80	111.6	69.5 - 120	
89 Y	4230871.50	1.01	3408096.80	124.1	69.5 - 120	IS Fai
159 Tb	4027123.80	0.56	3559216.30	113.1	69.5 - 120	
209 Bi	2144791.50	1.15	2013556.00	106.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000281

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\064SMPL.D\064SMPL.D#
Date Acquired: Mar 21 2018 05:52 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.68	1.736	ppb	0.61	100.	
11 B	104.35	20.87	ppb	4.00	1000.	
23 Na	1,138.5	227.7	ppb	4.78	200000.	
25 Mg	49,575.	9,915.	ppb	1.84	200000.	
27 Al	177,600.	35,520.	ppb	0.44	200000.	
28 Si	2,847.	569.4	ppb	6.57	#VALUE!	
29 Si	2,275.5	455.1	ppb	3.54	10000.	
39 K	60,350.	12,070.	ppb	0.62	200000.	
43 Ca	59,700.	11,940.	ppb	0.68	#VALUE!	
44 Ca	58,300.	11,660.	ppb	0.45	200000.	
51 V	254.4	50.88	ppb	1.09	1000.	
52 Cr	165.15	33.03	ppb	1.45	2000.	
53 Cr	183.45	36.69	ppb	1.50	#VALUE!	
55 Mn	2,782.5	556.5	ppb	1.83	2000.	
56 Fe	148,200.	29,640.	ppb	1.38	#VALUE!	
57 Fe	145,550.	29,110.	ppb	0.78	100000.	
59 Co	64.	12.8	ppb	1.67	1000.	
60 Ni	136.9	27.38	ppb	0.33	1000.	
63 Cu	578.	115.6	ppb	2.10	#VALUE!	
65 Cu	585.5	117.1	ppb	1.26	2000.	
66 Zn	1,099.5	219.9	ppb	1.48	2000.	
68 Zn	1,148.	229.6	ppb	1.74	#VALUE!	
75 As	30.165	6.033	ppb	1.77	1000.	
82 Se	5.945	1.189	ppb	18.40	1000.	
88 Sr	554.5	110.9	ppb	1.30	2000.	
98 Mo	5.145	1.029	ppb	5.61	1000.	
107 Ag	3.062	0.6124	ppb	2.93	100.	
109 Ag	2.9505	0.5901	ppb	2.08	#VALUE!	
111 Cd	32.875	6.575	ppb	2.82	#VALUE!	
114 Cd	30.97	6.194	ppb	2.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	82.15	16.43	ppb	0.71	1000.	
120 Sn	82.6	16.52	ppb	1.08	#VALUE!	
121 Sb	3.3575	0.6715	ppb	4.24	#VALUE!	
123 Sb	3.513	0.7026	ppb	4.20	1000.	
135 Ba	2,525.	505.	ppb	0.47	2000.	
137 Ba	2,507.5	501.5	ppb	0.75	#VALUE!	
182 W	1.2625	0.2525	ppb	11.55	1000.	
203 Tl	3.043	0.6086	ppb	2.09	1000.	
205 Tl	3.108	0.6216	ppb	3.75	#VALUE!	
208 Pb	362.6	72.52	ppb	0.75	2000.	
232 Th	87.3	17.46	ppb	1.49	1000.	
238 U	22.51	4.502	ppb	0.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3618680.80	0.76	3258324.00	111.1	69.5 - 120	
45 Sc	3261435.30	0.69	2896530.80	112.6	69.5 - 120	
89 Y	4298871.00	1.13	3408096.80	126.1	69.5 - 120	IS Fai
159 Tb	4051602.00	0.43	3559216.30	113.8	69.5 - 120	
209 Bi	2158585.50	0.84	2013556.00	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000282

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\065SMPL.D\065SMPL.D#
Date Acquired: Mar 21 2018 05:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	34.51	100.	
11 B	0.7875	0.7875	ppb	6.31	1000.	
23 Na	-1.84	-1.84	ppb	7.20	200000.	
25 Mg	0.4347	0.4347	ppb	27.65	200000.	
27 Al	1.655	1.655	ppb	21.84	200000.	
28 Si	-31.41	-31.41	ppb	68.20	#VALUE!	
29 Si	-86.1	-86.1	ppb	18.40	10000.	
39 K	-5.836	-5.836	ppb	13.59	200000.	
43 Ca	1.793	1.793	ppb	165.87	#VALUE!	
44 Ca	0.4823	0.4823	ppb	85.45	200000.	
51 V	-0.0076	-0.0076	ppb	280.07	1000.	
52 Cr	-0.0257	-0.0257	ppb	76.26	2000.	
53 Cr	0.052	0.052	ppb	272.36	#VALUE!	
55 Mn	0.0247	0.0247	ppb	40.67	2000.	
56 Fe	-9.492	-9.492	ppb	18.02	#VALUE!	
57 Fe	-5.013	-5.013	ppb	46.44	100000.	
59 Co	-0.005	-0.005	ppb	33.51	1000.	
60 Ni	-0.0054	-0.0054	ppb	53.73	1000.	
63 Cu	0.0002	0.0002	ppb	735.29	#VALUE!	
65 Cu	0.0143	0.0143	ppb	61.20	2000.	
66 Zn	-0.0309	-0.0309	ppb	75.92	2000.	
68 Zn	-0.3584	-0.3584	ppb	34.68	#VALUE!	
75 As	-0.0181	-0.0181	ppb	726.47	1000.	
82 Se	0.0078	0.0078	ppb	7074.20	1000.	
88 Sr	-0.0025	-0.0025	ppb	361.86	2000.	
98 Mo	0.0007	0.0007	ppb	474.02	1000.	
107 Ag	0.0009	0.0009	ppb	103.54	100.	
109 Ag	0.0012	0.0012	ppb	298.94	#VALUE!	
111 Cd	-0.099	-0.099	ppb	12.07	#VALUE!	
114 Cd	0.	0.	ppb	3914.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0022	0.0022	ppb	354.11	1000.	
120 Sn	-0.004	-0.004	ppb	282.49	#VALUE!	
121 Sb	-0.0061	-0.0061	ppb	27.24	#VALUE!	
123 Sb	0.0005	0.0005	ppb	1003.80	1000.	
135 Ba	0.0232	0.0232	ppb	33.88	2000.	
137 Ba	0.0117	0.0117	ppb	76.45	#VALUE!	
182 W	-0.0114	-0.0114	ppb	15.48	1000.	
203 Tl	0.0003	0.0003	ppb	954.87	1000.	
205 Tl	0.0029	0.0029	ppb	125.27	#VALUE!	
208 Pb	0.0076	0.0076	ppb	7.13	2000.	
232 Th	0.0073	0.0073	ppb	28.36	1000.	
238 U	-0.0001	-0.0001	ppb	826.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3306252.30	0.94	3258324.00	101.5	69.5 - 120	
45 Sc	2886329.30	0.41	2896530.80	99.6	69.5 - 120	
89 Y	3505132.50	1.29	3408096.80	102.8	69.5 - 120	
159 Tb	3623615.30	0.92	3559216.30	101.8	69.5 - 120	
209 Bi	2027492.30	1.06	2013556.00	100.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000283

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\066_CCV.D\066_CCV.D#
Date Acquired: Mar 21 2018 06:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.45	ppb	2.25	25	97.8	
11 B	24.34	ppb	4.57	25	97.36	
23 Na	4,872.	ppb	0.48	5,000	97.44	
25 Mg	5,018.	ppb	0.11	5,000	100.36	
27 Al	516.4	ppb	7.71	500	103.28	
28 Si	412.9	ppb	9.53	500	82.58	
29 Si	341.2	ppb	6.27	500	68.24	Fail
39 K	4,985.	ppb	0.65	5,000	99.7	
43 Ca	5,053.	ppb	1.00	5,000	101.06	
44 Ca	5,113.	ppb	1.04	5,000	102.26	
51 V	24.6	ppb	0.29	25	98.4	
52 Cr	24.8	ppb	0.78	25	99.2	
53 Cr	25.49	ppb	0.95	25	101.96	
55 Mn	25.33	ppb	1.07	25	101.32	
56 Fe	5,020.	ppb	0.95	5,000	100.4	
57 Fe	5,130.	ppb	1.31	5,000	102.6	
59 Co	25.	ppb	0.42	25	100	
60 Ni	24.99	ppb	0.75	25	99.96	
63 Cu	25.09	ppb	1.36	25	100.36	
65 Cu	24.75	ppb	0.60	25	99	
66 Zn	24.9	ppb	0.59	25	99.6	
68 Zn	24.33	ppb	2.42	25	97.32	
75 As	24.87	ppb	0.35	25	99.48	
82 Se	24.77	ppb	0.74	25	99.08	
88 Sr	25.13	ppb	0.50	25	100.52	
98 Mo	24.95	ppb	0.75	25	99.8	
107 Ag	25.6	ppb	0.23	25	102.4	
109 Ag	25.28	ppb	0.87	25	101.12	
111 Cd	25.38	ppb	1.02	25	101.52	
114 Cd	25.55	ppb	0.37	25	102.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.59	ppb	1.21	25	102.36	
120 Sn	25.55	ppb	0.70	25	102.2	
121 Sb	25.56	ppb	1.08	25	102.24	
123 Sb	25.69	ppb	1.04	25	102.76	
135 Ba	25.57	ppb	2.68	25	102.28	
137 Ba	25.95	ppb	1.94	25	103.8	
182 W	24.68	ppb	0.44	25	98.72	
203 Tl	25.24	ppb	0.62	25	100.96	
205 Tl	25.12	ppb	0.07	25	100.48	
208 Pb	25.23	ppb	0.65	25	100.92	
232 Th	24.44	ppb	0.63	25	97.76	
238 U	23.77	ppb	0.50	25	95.08	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3585603.80	1.62	3258324.00	110.0	80 - 120.4	
45 Sc	3174254.80	0.88	2896530.80	109.6	80 - 120.4	
89 Y	3773659.00	0.83	3408096.80	110.7	80 - 120.4	
159 Tb	3917724.00	0.11	3559216.30	110.1	80 - 120.4	
209 Bi	2136929.30	0.75	2013556.00	106.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000284

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\067_CCB.D\067_CCB.D#
Date Acquired: Mar 21 2018 06:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0027	ppb	159.15	1.00	
11 B	0.6707	ppb	13.76	1.00	
23 Na	5.128	ppb	234.01	1.00	
25 Mg	8.29	ppb	168.52	1.00	
27 Al	14.67	ppb	165.92	1.00	
28 Si	-27.56	ppb	159.14	1.00	
29 Si	-96.09	ppb	57.44	1.00	
39 K	-1.429	ppb	963.61	1.00	
43 Ca	21.42	ppb	143.65	1.00	
44 Ca	9.193	ppb	272.16	1.00	
51 V	0.0015	ppb	1671.70	1.00	
52 Cr	-0.0187	ppb	424.64	1.00	
53 Cr	0.5936	ppb	43.77	1.00	
55 Mn	0.1684	ppb	158.85	1.00	
56 Fe	2.791	ppb	852.02	1.00	
57 Fe	6.456	ppb	338.75	1.00	
59 Co	0.0014	ppb	1319.40	1.00	
60 Ni	0.0158	ppb	249.14	1.00	
63 Cu	0.0213	ppb	183.20	1.00	
65 Cu	0.0266	ppb	162.35	1.00	
66 Zn	0.0078	ppb	887.44	1.00	
68 Zn	-0.2667	ppb	76.04	1.00	
75 As	-0.1284	ppb	154.91	1.00	
82 Se	0.2487	ppb	65.38	1.00	
88 Sr	0.0648	ppb	174.75	1.00	
98 Mo	0.0577	ppb	126.43	1.00	
107 Ag	0.0048	ppb	134.93	1.00	
109 Ag	0.0028	ppb	17.16	1.00	
111 Cd	-0.033	ppb	113.55	1.00	
114 Cd	0.0103	ppb	142.34	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0335	ppb	72.11	1.00	
120 Sn	0.0321	ppb	79.51	1.00	
121 Sb	0.0083	ppb	257.09	1.00	
123 Sb	0.0126	ppb	213.38	1.00	
135 Ba	0.1785	ppb	150.31	1.00	
137 Ba	0.1538	ppb	172.63	1.00	
182 W	0.0276	ppb	73.52	1.00	
203 Tl	0.016	ppb	77.27	1.00	
205 Tl	0.0099	ppb	147.74	1.00	
208 Pb	0.0361	ppb	163.01	1.00	
232 Th	0.0263	ppb	70.63	1.00	
238 U	0.0124	ppb	132.90	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3359725.00	1.88	3258324.00	103.1	79.5 - 120	
45 Sc	2935229.30	2.87	2896530.80	101.3	79.5 - 120	
89 Y	3518649.00	1.93	3408096.80	103.2	79.5 - 120	
159 Tb	3647787.00	1.66	3559216.30	102.5	79.5 - 120	
209 Bi	2031096.00	1.42	2013556.00	100.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000285

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\068SMPL.D\068SMPL.D#
Date Acquired: Mar 21 2018 06:08 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019L
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.845	0.3538	ppb	1.90	100.	
11 B	114.375	4.575	ppb	3.62	1000.	
23 Na	1,083.25	43.33	ppb	1.68	200000.	
25 Mg	55,125.	2,205.	ppb	0.22	200000.	
27 Al	187,225.	7,489.	ppb	1.20	200000.	
28 Si	363.25	14.53	ppb	196.15	#VALUE!	
29 Si	-1,290.5	-51.62	ppb	45.02	10000.	
39 K	62,425.	2,497.	ppb	0.83	200000.	
43 Ca	61,925.	2,477.	ppb	1.60	#VALUE!	
44 Ca	61,800.	2,472.	ppb	1.45	200000.	
51 V	286.75	11.47	ppb	1.17	1000.	
52 Cr	186.575	7.463	ppb	1.63	2000.	
53 Cr	210.7	8.428	ppb	3.67	#VALUE!	
55 Mn	3,237.5	129.5	ppb	0.95	2000.	
56 Fe	168,550.	6,742.	ppb	1.52	#VALUE!	
57 Fe	169,900.	6,796.	ppb	1.79	100000.	
59 Co	72.325	2.893	ppb	2.60	1000.	
60 Ni	156.475	6.259	ppb	1.32	1000.	
63 Cu	673.25	26.93	ppb	0.30	#VALUE!	
65 Cu	678.5	27.14	ppb	1.27	2000.	
66 Zn	1,286.25	51.45	ppb	1.71	2000.	
68 Zn	1,335.75	53.43	ppb	1.39	#VALUE!	
75 As	32.6	1.304	ppb	1.58	1000.	
82 Se	3.1175	0.1247	ppb	176.82	1000.	
88 Sr	625.	25.	ppb	1.04	2000.	
98 Mo	5.2825	0.2113	ppb	5.09	1000.	
107 Ag	3.305	0.1322	ppb	4.54	100.	
109 Ag	3.2875	0.1315	ppb	9.14	#VALUE!	
111 Cd	35.1	1.404	ppb	3.88	#VALUE!	
114 Cd	36.075	1.443	ppb	1.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	84.675	3.387	ppb	1.54	1000.	
120 Sn	85.275	3.411	ppb	1.03	#VALUE!	
121 Sb	3.4075	0.1363	ppb	5.71	#VALUE!	
123 Sb	3.7425	0.1497	ppb	1.59	1000.	
135 Ba	2,642.5	105.7	ppb	1.23	2000.	
137 Ba	2,617.5	104.7	ppb	1.13	#VALUE!	
182 W	1.2923	0.0517	ppb	24.24	1000.	
203 Tl	3.29	0.1316	ppb	24.96	1000.	
205 Tl	2.95	0.118	ppb	5.12	#VALUE!	
208 Pb	369.25	14.77	ppb	1.37	2000.	
232 Th	86.975	3.479	ppb	1.22	1000.	
238 U	22.545	0.9018	ppb	2.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3633883.80	0.72	3258324.00	111.5	69.5 - 120	
45 Sc	3143399.50	0.36	2896530.80	108.5	69.5 - 120	
89 Y	3866877.80	1.30	3408096.80	113.5	69.5 - 120	
159 Tb	3926080.00	0.66	3559216.30	110.3	69.5 - 120	
209 Bi	2164108.80	1.41	2013556.00	107.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000286

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\069SMPL.D\069SMPL.D#
Date Acquired: Mar 21 2018 06:12 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019A
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	20.325	4.065	ppb	2.61	100.	
11 B	331.3	66.26	ppb	1.99	1000.	
23 Na	12,725.	2,545.	ppb	1.14	200000.	
25 Mg	51,150.	10,230.	ppb	0.86	200000.	
27 Al	177,950.	35,590.	ppb	1.63	200000.	
28 Si	9,430.	1,886.	ppb	2.47	#VALUE!	
29 Si	9,280.	1,856.	ppb	2.05	10000.	
39 K	71,450.	14,290.	ppb	0.98	200000.	
43 Ca	60,400.	12,080.	ppb	0.46	#VALUE!	
44 Ca	59,350.	11,870.	ppb	1.16	200000.	
51 V	321.95	64.39	ppb	0.28	1000.	
52 Cr	216.9	43.38	ppb	0.51	2000.	
53 Cr	241.15	48.23	ppb	0.70	#VALUE!	
55 Mn	2,860.5	572.1	ppb	0.37	2000.	
56 Fe	151,950.	30,390.	ppb	0.69	#VALUE!	
57 Fe	149,500.	29,900.	ppb	0.82	100000.	
59 Co	75.65	15.13	ppb	1.76	1000.	
60 Ni	159.9	31.98	ppb	0.88	1000.	
63 Cu	621.	124.2	ppb	1.11	#VALUE!	
65 Cu	620.	124.	ppb	1.48	2000.	
66 Zn	1,208.	241.6	ppb	0.95	2000.	
68 Zn	1,269.	253.8	ppb	1.03	#VALUE!	
75 As	83.55	16.71	ppb	1.34	1000.	
82 Se	57.65	11.53	ppb	1.26	1000.	
88 Sr	604.	120.8	ppb	0.30	2000.	
98 Mo	58.8	11.76	ppb	0.13	1000.	
107 Ag	14.085	2.817	ppb	0.89	100.	
109 Ag	13.89	2.778	ppb	1.28	#VALUE!	
111 Cd	43.255	8.651	ppb	0.88	#VALUE!	
114 Cd	41.375	8.275	ppb	0.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	140.9	28.18	ppb	0.92	1000.	
120 Sn	142.6	28.52	ppb	1.86	#VALUE!	
121 Sb	14.27	2.854	ppb	1.56	#VALUE!	
123 Sb	14.545	2.909	ppb	0.56	1000.	
135 Ba	2,556.	511.2	ppb	1.85	2000.	
137 Ba	2,577.	515.4	ppb	1.16	#VALUE!	
182 W	59.8	11.96	ppb	1.02	1000.	
203 Tl	14.38	2.876	ppb	1.24	1000.	
205 Tl	14.53	2.906	ppb	1.46	#VALUE!	
208 Pb	375.65	75.13	ppb	0.36	2000.	
232 Th	100.55	20.11	ppb	0.63	1000.	
238 U	34.205	6.841	ppb	2.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3686337.80	1.53	3258324.00	113.1	69.5 - 120	
45 Sc	3236509.30	2.19	2896530.80	111.7	69.5 - 120	
89 Y	4217656.00	0.61	3408096.80	123.8	69.5 - 120	IS Fai
159 Tb	3999186.50	1.77	3559216.30	112.4	69.5 - 120	
209 Bi	2118045.50	0.77	2013556.00	105.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000287

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\070SMPL.D\070SMPL.D#
Date Acquired: Mar 21 2018 06:16 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019S
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	54.4	10.88	ppb	2.19	100.	
11 B	558.5	111.7	ppb	3.49	1000.	
23 Na	8,270.	1,654.	ppb	2.05	200000.	
25 Mg	56,050.	11,210.	ppb	1.89	200000.	
27 Al	209,650.	41,930.	ppb	2.01	200000.	
28 Si	4,011.	802.2	ppb	10.38	#VALUE!	
29 Si	4,183.5	836.7	ppb	26.66	10000.	
39 K	72,800.	14,560.	ppb	1.07	200000.	
43 Ca	54,100.	10,820.	ppb	2.91	#VALUE!	
44 Ca	53,150.	10,630.	ppb	1.19	200000.	
51 V	737.5	147.5	ppb	1.82	1000.	
52 Cr	360.15	72.03	ppb	1.88	2000.	
53 Cr	373.65	74.73	ppb	1.75	#VALUE!	
55 Mn	3,172.	634.4	ppb	1.69	2000.	
56 Fe	152,200.	30,440.	ppb	2.10	#VALUE!	
57 Fe	149,800.	29,960.	ppb	1.99	100000.	
59 Co	490.45	98.09	ppb	1.41	1000.	
60 Ni	544.5	108.9	ppb	2.06	1000.	
63 Cu	770.	154.	ppb	1.77	#VALUE!	
65 Cu	777.5	155.5	ppb	2.37	2000.	
66 Zn	1,455.	291.	ppb	2.08	2000.	
68 Zn	1,569.5	313.9	ppb	1.55	#VALUE!	
75 As	111.5	22.3	ppb	1.16	1000.	
82 Se	86.55	17.31	ppb	0.57	1000.	
88 Sr	957.	191.4	ppb	1.67	2000.	
98 Mo	85.5	17.1	ppb	0.90	1000.	
107 Ag	45.96	9.192	ppb	2.40	100.	
109 Ag	45.25	9.05	ppb	1.66	#VALUE!	
111 Cd	244.35	48.87	ppb	1.52	#VALUE!	
114 Cd	244.3	48.86	ppb	1.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	549.5	109.9	ppb	0.99	1000.	
120 Sn	554.5	110.9	ppb	1.41	#VALUE!	
121 Sb	37.905	7.581	ppb	1.44	#VALUE!	
123 Sb	37.885	7.577	ppb	2.37	1000.	
135 Ba	4,522.5	904.5	ppb	1.48	2000.	
137 Ba	4,432.	886.4	ppb	0.84	#VALUE!	
182 W	53.1	10.62	ppb	0.91	1000.	
203 Tl	100.45	20.09	ppb	0.68	1000.	
205 Tl	100.3	20.06	ppb	0.75	#VALUE!	
208 Pb	434.4	86.88	ppb	0.31	2000.	
232 Th	181.95	36.39	ppb	0.32	1000.	
238 U	116.7	23.34	ppb	0.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3713993.80	1.13	3258324.00	114.0	69.5 - 120	
45 Sc	3261068.50	1.40	2896530.80	112.6	69.5 - 120	
89 Y	4211797.50	1.86	3408096.80	123.6	69.5 - 120	IS Fai
159 Tb	3996886.30	1.24	3559216.30	112.3	69.5 - 120	
209 Bi	2107794.30	0.18	2013556.00	104.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000288

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\071SMPL.D\071SMPL.D#
Date Acquired: Mar 21 2018 06:20 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019P
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	55.	11.	ppb	0.76	100.	
11 B	563.	112.6	ppb	4.49	1000.	
23 Na	8,220.	1,644.	ppb	0.95	200000.	
25 Mg	58,250.	11,650.	ppb	0.79	200000.	
27 Al	214,400.	42,880.	ppb	0.48	200000.	
28 Si	3,324.	664.8	ppb	2.29	#VALUE!	
29 Si	2,918.5	583.7	ppb	1.64	10000.	
39 K	75,800.	15,160.	ppb	0.64	200000.	
43 Ca	62,750.	12,550.	ppb	1.58	#VALUE!	
44 Ca	61,550.	12,310.	ppb	0.69	200000.	
51 V	750.	150.	ppb	2.15	1000.	
52 Cr	373.65	74.73	ppb	1.89	2000.	
53 Cr	376.5	75.3	ppb	2.13	#VALUE!	
55 Mn	3,315.	663.	ppb	1.62	2000.	
56 Fe	161,450.	32,290.	ppb	1.71	#VALUE!	
57 Fe	158,900.	31,780.	ppb	1.62	100000.	
59 Co	494.75	98.95	ppb	1.83	1000.	
60 Ni	555.	111.	ppb	2.52	1000.	
63 Cu	821.5	164.3	ppb	2.50	#VALUE!	
65 Cu	831.5	166.3	ppb	2.50	2000.	
66 Zn	1,514.	302.8	ppb	2.22	2000.	
68 Zn	1,636.	327.2	ppb	1.83	#VALUE!	
75 As	111.25	22.25	ppb	3.13	1000.	
82 Se	84.45	16.89	ppb	1.25	1000.	
88 Sr	993.	198.6	ppb	0.62	2000.	
98 Mo	84.65	16.93	ppb	1.71	1000.	
107 Ag	45.815	9.163	ppb	2.27	100.	
109 Ag	45.88	9.176	ppb	1.57	#VALUE!	
111 Cd	245.7	49.14	ppb	1.96	#VALUE!	
114 Cd	244.45	48.89	ppb	2.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	553.	110.6	ppb	1.84	1000.	
120 Sn	560.5	112.1	ppb	1.64	#VALUE!	
121 Sb	37.52	7.504	ppb	1.76	#VALUE!	
123 Sb	37.91	7.582	ppb	2.93	1000.	
135 Ba	4,624.5	924.9	ppb	1.74	2000.	
137 Ba	4,574.5	914.9	ppb	1.10	#VALUE!	
182 W	51.7	10.34	ppb	1.88	1000.	
203 Tl	100.75	20.15	ppb	1.19	1000.	
205 Tl	101.	20.2	ppb	1.86	#VALUE!	
208 Pb	460.6	92.12	ppb	0.80	2000.	
232 Th	181.	36.2	ppb	1.50	1000.	
238 U	118.1	23.62	ppb	0.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3655048.80	0.46	3258324.00	112.2	69.5 - 120	
45 Sc	3243954.00	0.02	2896530.80	112.0	69.5 - 120	
89 Y	4182063.80	1.39	3408096.80	122.7	69.5 - 120	IS Fai
159 Tb	3949645.30	1.79	3559216.30	111.0	69.5 - 120	
209 Bi	2082699.10	0.96	2013556.00	103.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000289

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\072SMPL.D\072SMPL.D#
Date Acquired: Mar 21 2018 06:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-021
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.55	1.31	ppb	3.93	100.	
11 B	95.4	19.08	ppb	1.22	1000.	
23 Na	952.5	190.5	ppb	0.47	200000.	
25 Mg	35,350.	7,070.	ppb	0.65	200000.	
27 Al	135,850.	27,170.	ppb	1.71	200000.	
28 Si	3,263.	652.6	ppb	6.83	#VALUE!	
29 Si	2,760.5	552.1	ppb	2.97	10000.	
39 K	42,120.	8,424.	ppb	0.79	200000.	
43 Ca	32,315.	6,463.	ppb	0.48	#VALUE!	
44 Ca	32,475.	6,495.	ppb	1.08	200000.	
51 V	216.8	43.36	ppb	1.81	1000.	
52 Cr	130.6	26.12	ppb	0.75	2000.	
53 Cr	147.	29.4	ppb	0.90	#VALUE!	
55 Mn	2,417.5	483.5	ppb	1.39	2000.	
56 Fe	110,750.	22,150.	ppb	1.83	#VALUE!	
57 Fe	109,200.	21,840.	ppb	1.59	100000.	
59 Co	52.1	10.42	ppb	1.96	1000.	
60 Ni	98.15	19.63	ppb	1.62	1000.	
63 Cu	204.05	40.81	ppb	2.24	#VALUE!	
65 Cu	205.25	41.05	ppb	2.39	2000.	
66 Zn	513.5	102.7	ppb	2.00	2000.	
68 Zn	552.5	110.5	ppb	0.48	#VALUE!	
75 As	26.855	5.371	ppb	1.14	1000.	
82 Se	5.21	1.042	ppb	38.23	1000.	
88 Sr	333.1	66.62	ppb	2.31	2000.	
98 Mo	4.207	0.8414	ppb	5.49	1000.	
107 Ag	2.0305	0.4061	ppb	7.75	100.	
109 Ag	1.8195	0.3639	ppb	4.32	#VALUE!	
111 Cd	27.19	5.438	ppb	1.22	#VALUE!	
114 Cd	26.145	5.229	ppb	0.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.5	11.1	ppb	0.83	1000.	
120 Sn	56.3	11.26	ppb	0.91	#VALUE!	
121 Sb	2.31	0.462	ppb	3.67	#VALUE!	
123 Sb	2.4415	0.4883	ppb	6.14	1000.	
135 Ba	1,676.	335.2	ppb	1.20	2000.	
137 Ba	1,666.	333.2	ppb	0.82	#VALUE!	
182 W	1.334	0.2668	ppb	4.39	1000.	
203 Tl	2.7695	0.5539	ppb	3.30	1000.	
205 Tl	2.885	0.577	ppb	1.68	#VALUE!	
208 Pb	230.95	46.19	ppb	1.22	2000.	
232 Th	70.7	14.14	ppb	1.57	1000.	
238 U	11.525	2.305	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3515989.00	2.06	3258324.00	107.9	69.5 - 120	
45 Sc	3153685.00	1.00	2896530.80	108.9	69.5 - 120	
89 Y	4088127.00	1.12	3408096.80	120.0	69.5 - 120	
159 Tb	3927821.30	0.19	3559216.30	110.4	69.5 - 120	
209 Bi	2100855.50	0.91	2013556.00	104.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000290

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\073SMPL.D\073SMPL.D#
Date Acquired: Mar 21 2018 06:29 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-022
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.295	1.459	ppb	1.27	100.	
11 B	106.6	21.32	ppb	0.92	1000.	
23 Na	1,216.5	243.3	ppb	2.05	200000.	
25 Mg	45,105.	9,021.	ppb	0.39	200000.	
27 Al	150,700.	30,140.	ppb	1.14	200000.	
28 Si	3,010.	602.	ppb	8.09	#VALUE!	
29 Si	2,761.5	552.3	ppb	15.09	10000.	
39 K	54,100.	10,820.	ppb	0.80	200000.	
43 Ca	28,790.	5,758.	ppb	0.30	#VALUE!	
44 Ca	28,960.	5,792.	ppb	1.13	200000.	
51 V	232.2	46.44	ppb	1.75	1000.	
52 Cr	131.95	26.39	ppb	1.56	2000.	
53 Cr	148.75	29.75	ppb	2.42	#VALUE!	
55 Mn	2,754.	550.8	ppb	2.02	2000.	
56 Fe	120,550.	24,110.	ppb	2.17	#VALUE!	
57 Fe	117,950.	23,590.	ppb	2.77	100000.	
59 Co	57.25	11.45	ppb	2.64	1000.	
60 Ni	107.8	21.56	ppb	3.45	1000.	
63 Cu	201.6	40.32	ppb	2.40	#VALUE!	
65 Cu	203.6	40.72	ppb	2.15	2000.	
66 Zn	499.25	99.85	ppb	2.41	2000.	
68 Zn	541.	108.2	ppb	2.28	#VALUE!	
75 As	24.27	4.854	ppb	7.25	1000.	
82 Se	5.275	1.055	ppb	24.32	1000.	
88 Sr	414.3	82.86	ppb	0.44	2000.	
98 Mo	7.58	1.516	ppb	2.28	1000.	
107 Ag	2.761	0.5522	ppb	6.10	100.	
109 Ag	2.629	0.5258	ppb	1.17	#VALUE!	
111 Cd	6.94	1.388	ppb	8.56	#VALUE!	
114 Cd	5.335	1.067	ppb	6.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.75	10.15	ppb	1.73	1000.	
120 Sn	51.4	10.28	ppb	1.91	#VALUE!	
121 Sb	2.246	0.4492	ppb	1.39	#VALUE!	
123 Sb	2.238	0.4476	ppb	4.94	1000.	
135 Ba	1,707.5	341.5	ppb	0.52	2000.	
137 Ba	1,697.	339.4	ppb	0.72	#VALUE!	
182 W	0.8545	0.1709	ppb	4.18	1000.	
203 Tl	2.7815	0.5563	ppb	3.31	1000.	
205 Tl	2.738	0.5476	ppb	2.99	#VALUE!	
208 Pb	168.35	33.67	ppb	0.67	2000.	
232 Th	86.6	17.32	ppb	0.88	1000.	
238 U	12.655	2.531	ppb	0.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3576702.50	1.82	3258324.00	109.8	69.5 - 120	
45 Sc	3202893.00	1.35	2896530.80	110.6	69.5 - 120	
89 Y	4182207.50	1.22	3408096.80	122.7	69.5 - 120	IS Fai
159 Tb	3985332.80	0.12	3559216.30	112.0	69.5 - 120	
209 Bi	2111340.30	0.95	2013556.00	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000291

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\074SMPL.D\074SMPL.D#
Date Acquired: Mar 21 2018 06:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0042	0.0042	ppb	241.46	100.	
11 B	1.309	1.309	ppb	9.77	1000.	
23 Na	9.234	9.234	ppb	212.69	200000.	
25 Mg	15.17	15.17	ppb	170.53	200000.	
27 Al	27.51	27.51	ppb	166.96	200000.	
28 Si	-59.55	-59.55	ppb	75.16	#VALUE!	
29 Si	-86.34	-86.34	ppb	20.78	10000.	
39 K	6.004	6.004	ppb	330.11	200000.	
43 Ca	25.07	25.07	ppb	179.58	#VALUE!	
44 Ca	24.25	24.25	ppb	186.14	200000.	
51 V	0.0477	0.0477	ppb	243.14	1000.	
52 Cr	0.0147	0.0147	ppb	490.33	2000.	
53 Cr	0.1999	0.1999	ppb	94.95	#VALUE!	
55 Mn	0.3432	0.3432	ppb	161.22	2000.	
56 Fe	12.86	12.86	ppb	338.49	#VALUE!	
57 Fe	16.85	16.85	ppb	235.19	100000.	
59 Co	0.0322	0.0322	ppb	188.75	1000.	
60 Ni	0.0358	0.0358	ppb	156.95	1000.	
63 Cu	0.0447	0.0447	ppb	180.09	#VALUE!	
65 Cu	0.0592	0.0592	ppb	179.70	2000.	
66 Zn	0.0836	0.0836	ppb	153.89	2000.	
68 Zn	-0.1375	-0.1375	ppb	134.76	#VALUE!	
75 As	-0.1251	-0.1251	ppb	164.35	1000.	
82 Se	-0.0946	-0.0946	ppb	211.73	1000.	
88 Sr	0.1492	0.1492	ppb	169.77	2000.	
98 Mo	0.0867	0.0867	ppb	172.22	1000.	
107 Ag	0.007	0.007	ppb	143.67	100.	
109 Ag	0.0061	0.0061	ppb	182.52	#VALUE!	
111 Cd	-0.0516	-0.0516	ppb	65.18	#VALUE!	
114 Cd	0.0234	0.0234	ppb	154.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0227	0.0227	ppb	201.58	1000.	
120 Sn	0.0181	0.0181	ppb	182.68	#VALUE!	
121 Sb	0.0179	0.0179	ppb	258.68	#VALUE!	
123 Sb	0.0158	0.0158	ppb	169.06	1000.	
135 Ba	0.3559	0.3559	ppb	167.55	2000.	
137 Ba	0.3774	0.3774	ppb	164.18	#VALUE!	
182 W	0.0083	0.0083	ppb	344.54	1000.	
203 Tl	0.0129	0.0129	ppb	180.36	1000.	
205 Tl	0.0215	0.0215	ppb	152.09	#VALUE!	
208 Pb	0.0558	0.0558	ppb	159.72	2000.	
232 Th	0.0294	0.0294	ppb	131.03	1000.	
238 U	0.0178	0.0178	ppb	169.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3292312.30	0.57	3258324.00	101.0	69.5 - 120	
45 Sc	2894127.00	0.91	2896530.80	99.9	69.5 - 120	
89 Y	3457709.50	1.32	3408096.80	101.5	69.5 - 120	
159 Tb	3617395.30	0.97	3559216.30	101.6	69.5 - 120	
209 Bi	2003848.10	1.10	2013556.00	99.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000292

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\075SMPL.D\075SMPL.D#
Date Acquired: Mar 21 2018 06:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	257.62	100.	
11 B	0.8943	0.8943	ppb	6.38	1000.	
23 Na	-2.151	-2.151	ppb	8.54	200000.	
25 Mg	0.2365	0.2365	ppb	15.99	200000.	
27 Al	1.085	1.085	ppb	7.40	200000.	
28 Si	-61.16	-61.16	ppb	10.91	#VALUE!	
29 Si	-106.3	-106.3	ppb	25.05	10000.	LOW
39 K	-6.736	-6.736	ppb	26.87	200000.	
43 Ca	0.8352	0.8352	ppb	334.17	#VALUE!	
44 Ca	-1.565	-1.565	ppb	65.75	200000.	
51 V	-0.0261	-0.0261	ppb	301.65	1000.	
52 Cr	-0.0353	-0.0353	ppb	49.26	2000.	
53 Cr	0.1865	0.1865	ppb	92.39	#VALUE!	
55 Mn	0.0333	0.0333	ppb	29.99	2000.	
56 Fe	-12.27	-12.27	ppb	13.09	#VALUE!	
57 Fe	-6.163	-6.163	ppb	10.28	100000.	
59 Co	-0.007	-0.007	ppb	66.27	1000.	
60 Ni	-0.0051	-0.0051	ppb	18.69	1000.	
63 Cu	-0.0026	-0.0026	ppb	105.61	#VALUE!	
65 Cu	0.0024	0.0024	ppb	363.42	2000.	
66 Zn	-0.0202	-0.0202	ppb	176.56	2000.	
68 Zn	-0.1682	-0.1682	ppb	36.03	#VALUE!	
75 As	-0.139	-0.139	ppb	28.77	1000.	
82 Se	-0.1437	-0.1437	ppb	21.82	1000.	
88 Sr	0.0014	0.0014	ppb	288.97	2000.	
98 Mo	0.0003	0.0003	ppb	594.10	1000.	
107 Ag	0.001	0.001	ppb	100.62	100.	
109 Ag	-0.0005	-0.0005	ppb	260.99	#VALUE!	
111 Cd	-0.065	-0.065	ppb	3.28	#VALUE!	
114 Cd	0.0001	0.0001	ppb	2229.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0105	-0.0105	ppb	151.05	1000.	
120 Sn	-0.0107	-0.0107	ppb	65.01	#VALUE!	
121 Sb	-0.0052	-0.0052	ppb	80.31	#VALUE!	
123 Sb	-0.0068	-0.0068	ppb	36.49	1000.	
135 Ba	0.0138	0.0138	ppb	101.01	2000.	
137 Ba	0.0183	0.0183	ppb	37.59	#VALUE!	
182 W	-0.0086	-0.0086	ppb	53.85	1000.	
203 Tl	0.0024	0.0024	ppb	132.10	1000.	
205 Tl	0.0017	0.0017	ppb	62.21	#VALUE!	
208 Pb	0.0066	0.0066	ppb	57.61	2000.	
232 Th	0.0026	0.0026	ppb	52.49	1000.	
238 U	-0.0005	-0.0005	ppb	126.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3342504.50	3.18	3258324.00	102.6	69.5 - 120	
45 Sc	2926950.30	1.49	2896530.80	101.1	69.5 - 120	
89 Y	3482847.80	0.14	3408096.80	102.2	69.5 - 120	
159 Tb	3643704.50	0.31	3559216.30	102.4	69.5 - 120	
209 Bi	2012372.60	0.49	2013556.00	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000293

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\076SMPL.D\076SMPL.D#
Date Acquired: Mar 21 2018 06:41 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLC16IMW1
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0035	-0.0007	ppb	177.03	100.	
11 B	3.5345	0.7069	ppb	14.87	1000.	
23 Na	10.94	2.188	ppb	11.04	200000.	
25 Mg	5.375	1.075	ppb	13.99	200000.	
27 Al	9.035	1.807	ppb	5.95	200000.	
28 Si	-298.35	-59.67	ppb	50.24	#VALUE!	
29 Si	-403.9	-80.78	ppb	39.54	10000.	
39 K	-28.04	-5.608	ppb	16.01	200000.	
43 Ca	26.555	5.311	ppb	28.66	#VALUE!	
44 Ca	-5.455	-1.091	ppb	89.34	200000.	
51 V	0.1752	0.035	ppb	129.11	1000.	
52 Cr	0.609	0.1218	ppb	14.18	2000.	
53 Cr	31.43	6.286	ppb	2.53	#VALUE!	
55 Mn	0.3482	0.0696	ppb	9.07	2000.	
56 Fe	-45.87	-9.174	ppb	29.53	#VALUE!	
57 Fe	-21.055	-4.211	ppb	5.13	100000.	
59 Co	-0.0228	-0.0046	ppb	26.19	1000.	
60 Ni	0.0257	0.0051	ppb	52.69	1000.	
63 Cu	0.2731	0.0546	ppb	3.18	#VALUE!	
65 Cu	0.3421	0.0684	ppb	17.21	2000.	
66 Zn	0.3834	0.0767	ppb	65.07	2000.	
68 Zn	-0.8605	-0.1721	ppb	7.09	#VALUE!	
75 As	0.1158	0.0232	ppb	1017.30	1000.	
82 Se	0.5175	0.1035	ppb	120.19	1000.	
88 Sr	0.0289	0.0058	ppb	94.24	2000.	
98 Mo	0.0398	0.008	ppb	121.94	1000.	
107 Ag	0.011	0.0022	ppb	31.96	100.	
109 Ag	-0.0028	-0.0006	ppb	71.73	#VALUE!	
111 Cd	-0.3454	-0.0691	ppb	30.06	#VALUE!	
114 Cd	-0.0018	-0.0004	ppb	1037.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.179	0.2358	ppb	10.74	1000.	
120 Sn	1.1935	0.2387	ppb	8.41	#VALUE!	
121 Sb	0.0741	0.0148	ppb	28.20	#VALUE!	
123 Sb	0.1066	0.0213	ppb	36.09	1000.	
135 Ba	0.1803	0.0361	ppb	16.42	2000.	
137 Ba	0.1943	0.0389	ppb	62.51	#VALUE!	
182 W	0.0174	0.0035	ppb	204.47	1000.	
203 Tl	0.0187	0.0037	ppb	118.64	1000.	
205 Tl	0.0003	0.0001	ppb	2064.30	#VALUE!	
208 Pb	0.0372	0.0074	ppb	32.12	2000.	
232 Th	0.0422	0.0084	ppb	24.08	1000.	
238 U	-0.0054	-0.0011	ppb	17.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3337187.00	2.14	3258324.00	102.4	69.5 - 120	
45 Sc	2884112.00	1.20	2896530.80	99.6	69.5 - 120	
89 Y	3506281.50	0.74	3408096.80	102.9	69.5 - 120	
159 Tb	3643863.30	0.60	3559216.30	102.4	69.5 - 120	
209 Bi	2000322.90	0.44	2013556.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000294

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\077SMPL.D\077SMPL.D#
Date Acquired: Mar 21 2018 06:45 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLC16IMW1
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.285	9.857	ppb	0.53	100.	
11 B	504.5	100.9	ppb	4.74	1000.	
23 Na	7,655.	1,531.	ppb	2.03	200000.	
25 Mg	5,385.	1,077.	ppb	0.86	200000.	
27 Al	2,126.5	425.3	ppb	0.95	200000.	
28 Si	495.2	99.04	ppb	35.42	#VALUE!	
29 Si	344.5	68.9	ppb	56.65	10000.	
39 K	10,245.	2,049.	ppb	1.32	200000.	
43 Ca	3,141.	628.2	ppb	3.76	#VALUE!	
44 Ca	2,705.5	541.1	ppb	1.72	200000.	
51 V	523.5	104.7	ppb	0.55	1000.	
52 Cr	205.35	41.07	ppb	0.65	2000.	
53 Cr	238.1	47.62	ppb	0.43	#VALUE!	
55 Mn	520.	104.	ppb	1.68	2000.	
56 Fe	969.5	193.9	ppb	2.01	#VALUE!	
57 Fe	1,021.	204.2	ppb	2.28	100000.	
59 Co	535.	107.	ppb	0.50	1000.	
60 Ni	525.5	105.1	ppb	0.64	1000.	
63 Cu	258.1	51.62	ppb	0.49	#VALUE!	
65 Cu	260.85	52.17	ppb	0.68	2000.	
66 Zn	515.5	103.1	ppb	0.67	2000.	
68 Zn	586.	117.2	ppb	0.76	#VALUE!	
75 As	101.55	20.31	ppb	1.35	1000.	
82 Se	98.05	19.61	ppb	1.49	1000.	
88 Sr	523.	104.6	ppb	1.89	2000.	
98 Mo	102.65	20.53	ppb	0.44	1000.	
107 Ag	52.65	10.53	ppb	0.73	100.	
109 Ag	52.95	10.59	ppb	1.17	#VALUE!	
111 Cd	263.3	52.66	ppb	0.54	#VALUE!	
114 Cd	265.5	53.1	ppb	0.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	520.5	104.1	ppb	1.40	1000.	
120 Sn	520.5	104.1	ppb	2.25	#VALUE!	
121 Sb	106.35	21.27	ppb	1.98	#VALUE!	
123 Sb	106.55	21.31	ppb	1.38	1000.	
135 Ba	2,124.5	424.9	ppb	1.95	2000.	
137 Ba	2,109.5	421.9	ppb	1.76	#VALUE!	
182 W	102.5	20.5	ppb	2.15	1000.	
203 Tl	103.55	20.71	ppb	1.59	1000.	
205 Tl	103.6	20.72	ppb	1.28	#VALUE!	
208 Pb	105.05	21.01	ppb	1.21	2000.	
232 Th	100.35	20.07	ppb	1.47	1000.	
238 U	96.8	19.36	ppb	2.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3655357.00	1.10	3258324.00	112.2	69.5 - 120	
45 Sc	3035024.00	1.57	2896530.80	104.8	69.5 - 120	
89 Y	3661544.50	0.62	3408096.80	107.4	69.5 - 120	
159 Tb	3830684.50	1.73	3559216.30	107.6	69.5 - 120	
209 Bi	2095199.50	0.92	2013556.00	104.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000295

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\078_CCV.D\078_CCV.D#
Date Acquired: Mar 21 2018 06:49 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.77	ppb	0.42	25	99.08	
11 B	25.79	ppb	2.27	25	103.16	
23 Na	4,915.	ppb	0.95	5,000	98.3	
25 Mg	4,973.	ppb	0.56	5,000	99.46	
27 Al	498.	ppb	0.99	500	99.6	
28 Si	428.5	ppb	4.13	500	85.7	
29 Si	376.8	ppb	2.00	500	75.36	Fail
39 K	4,973.	ppb	0.45	5,000	99.46	
43 Ca	5,080.	ppb	3.12	5,000	101.6	
44 Ca	5,149.	ppb	1.58	5,000	102.98	
51 V	24.74	ppb	1.43	25	98.96	
52 Cr	24.7	ppb	0.43	25	98.8	
53 Cr	25.15	ppb	0.47	25	100.6	
55 Mn	24.84	ppb	0.76	25	99.36	
56 Fe	4,933.	ppb	0.16	5,000	98.66	
57 Fe	5,091.	ppb	0.84	5,000	101.82	
59 Co	24.74	ppb	0.21	25	98.96	
60 Ni	24.93	ppb	2.24	25	99.72	
63 Cu	24.93	ppb	0.95	25	99.72	
65 Cu	24.75	ppb	1.00	25	99	
66 Zn	24.98	ppb	1.29	25	99.92	
68 Zn	24.38	ppb	1.79	25	97.52	
75 As	24.7	ppb	1.29	25	98.8	
82 Se	25.44	ppb	0.93	25	101.76	
88 Sr	24.77	ppb	0.89	25	99.08	
98 Mo	24.79	ppb	0.61	25	99.16	
107 Ag	25.21	ppb	0.17	25	100.84	
109 Ag	25.44	ppb	0.86	25	101.76	
111 Cd	25.25	ppb	1.21	25	101	
114 Cd	25.44	ppb	0.88	25	101.76	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.59	ppb	1.33	25	102.36	
120 Sn	25.53	ppb	0.90	25	102.12	
121 Sb	25.38	ppb	1.44	25	101.52	
123 Sb	25.35	ppb	1.78	25	101.4	
135 Ba	25.06	ppb	1.99	25	100.24	
137 Ba	25.31	ppb	1.37	25	101.24	
182 W	24.62	ppb	1.44	25	98.48	
203 Tl	25.01	ppb	0.94	25	100.04	
205 Tl	24.95	ppb	0.44	25	99.8	
208 Pb	24.96	ppb	0.64	25	99.84	
232 Th	24.05	ppb	0.64	25	96.2	
238 U	23.11	ppb	0.45	25	92.44	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3513232.80	0.85	3258324.00	107.8	80 - 120.4	
45 Sc	3116569.80	1.19	2896530.80	107.6	80 - 120.4	
89 Y	3733907.80	0.41	3408096.80	109.6	80 - 120.4	
159 Tb	3863022.50	0.56	3559216.30	108.5	80 - 120.4	
209 Bi	2125968.80	0.77	2013556.00	105.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000296

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\079_CCB.D\079_CCB.D#
Date Acquired: Mar 21 2018 06:53 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0002	ppb	449.57	1.00	
11 B	1.187	ppb	8.36	1.00	
23 Na	-1.713	ppb	33.44	1.00	
25 Mg	0.5275	ppb	155.81	1.00	
27 Al	1.364	ppb	114.66	1.00	
28 Si	-17.35	ppb	183.52	1.00	
29 Si	-65.01	ppb	65.47	1.00	
39 K	-4.383	ppb	49.05	1.00	
43 Ca	2.081	ppb	181.36	1.00	
44 Ca	-2.259	ppb	48.74	1.00	
51 V	-0.0398	ppb	208.60	1.00	
52 Cr	-0.0355	ppb	6.64	1.00	
53 Cr	0.609	ppb	35.78	1.00	
55 Mn	0.0377	ppb	46.29	1.00	
56 Fe	-6.262	ppb	56.80	1.00	
57 Fe	-2.971	ppb	38.34	1.00	
59 Co	-0.0011	ppb	463.56	1.00	
60 Ni	-0.0014	ppb	1113.10	1.00	
63 Cu	-0.0098	ppb	94.60	1.00	
65 Cu	0.0021	ppb	295.64	1.00	
66 Zn	-0.0193	ppb	346.43	1.00	
68 Zn	-0.24	ppb	11.77	1.00	
75 As	0.1325	ppb	67.67	1.00	
82 Se	0.2923	ppb	86.59	1.00	
88 Sr	0.003	ppb	318.85	1.00	
98 Mo	0.0143	ppb	101.19	1.00	
107 Ag	0.0036	ppb	111.16	1.00	
109 Ag	-0.001	ppb	182.06	1.00	
111 Cd	-0.0599	ppb	71.32	1.00	
114 Cd	0.0023	ppb	168.93	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0268	ppb	36.62	1.00	
120 Sn	0.0199	ppb	52.31	1.00	
121 Sb	-0.0001	ppb	4562.40	1.00	
123 Sb	-0.0005	ppb	1117.50	1.00	
135 Ba	0.0116	ppb	231.99	1.00	
137 Ba	0.0159	ppb	142.63	1.00	
182 W	0.01	ppb	118.78	1.00	
203 Tl	0.0051	ppb	120.12	1.00	
205 Tl	0.0041	ppb	71.13	1.00	
208 Pb	0.0045	ppb	93.24	1.00	
232 Th	0.0169	ppb	14.76	1.00	
238 U	0.0027	ppb	24.43	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3236196.00	0.41	3258324.00	99.3	79.5 - 120	
45 Sc	2869199.30	2.26	2896530.80	99.1	79.5 - 120	
89 Y	3427975.30	1.67	3408096.80	100.6	79.5 - 120	
159 Tb	3576650.80	1.61	3559216.30	100.5	79.5 - 120	
209 Bi	1982604.80	0.12	2013556.00	98.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000297

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\080SMPL.D\080SMPL.D#
Date Acquired: Mar 21 2018 06:58 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-014
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0184	-0.0037	ppb	34.46	100.	
11 B	5.435	1.087	ppb	5.23	1000.	
23 Na	69.5	13.9	ppb	0.60	200000.	
25 Mg	12.675	2.535	ppb	1.56	200000.	
27 Al	13.4	2.68	ppb	0.97	200000.	
28 Si	-323.55	-64.71	ppb	102.91	#VALUE!	
29 Si	-444.4	-88.88	ppb	49.62	10000.	
39 K	-3.5395	-0.7079	ppb	235.06	200000.	
43 Ca	90.7	18.14	ppb	24.03	#VALUE!	
44 Ca	58.95	11.79	ppb	18.48	200000.	
51 V	-0.1223	-0.0245	ppb	269.26	1000.	
52 Cr	0.555	0.111	ppb	21.68	2000.	
53 Cr	33.075	6.615	ppb	4.18	#VALUE!	
55 Mn	0.671	0.1342	ppb	7.28	2000.	
56 Fe	-20.455	-4.091	ppb	60.47	#VALUE!	
57 Fe	-2.6795	-0.5359	ppb	585.18	100000.	
59 Co	-0.0189	-0.0038	ppb	48.97	1000.	
60 Ni	0.0103	0.0021	ppb	312.88	1000.	
63 Cu	0.3684	0.0737	ppb	12.85	#VALUE!	
65 Cu	0.3328	0.0666	ppb	20.00	2000.	
66 Zn	0.389	0.0778	ppb	68.96	2000.	
68 Zn	-1.319	-0.2638	ppb	53.64	#VALUE!	
75 As	-0.5935	-0.1187	ppb	128.98	1000.	
82 Se	0.5465	0.1093	ppb	334.95	1000.	
88 Sr	0.38	0.076	ppb	7.35	2000.	
98 Mo	0.1367	0.0273	ppb	8.08	1000.	
107 Ag	0.0133	0.0027	ppb	91.52	100.	
109 Ag	0.0074	0.0015	ppb	93.21	#VALUE!	
111 Cd	-0.3543	-0.0709	ppb	87.55	#VALUE!	
114 Cd	0.0008	0.0002	ppb	1839.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.314	0.2628	ppb	4.45	1000.	
120 Sn	1.219	0.2438	ppb	7.00	#VALUE!	
121 Sb	0.0992	0.0198	ppb	34.53	#VALUE!	
123 Sb	0.1135	0.0227	ppb	10.71	1000.	
135 Ba	0.2809	0.0562	ppb	50.16	2000.	
137 Ba	0.2034	0.0407	ppb	43.27	#VALUE!	
182 W	0.0364	0.0073	ppb	49.41	1000.	
203 Tl	-0.0156	-0.0031	ppb	81.72	1000.	
205 Tl	0.0065	0.0013	ppb	126.10	#VALUE!	
208 Pb	0.0303	0.0061	ppb	50.97	2000.	
232 Th	0.1013	0.0203	ppb	52.42	1000.	
238 U	0.0046	0.0009	ppb	272.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3335090.00	4.27	3258324.00	102.4	69.5 - 120	
45 Sc	2866584.00	2.06	2896530.80	99.0	69.5 - 120	
89 Y	3489009.30	0.94	3408096.80	102.4	69.5 - 120	
159 Tb	3625167.80	0.22	3559216.30	101.9	69.5 - 120	
209 Bi	1992410.00	0.28	2013556.00	98.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000298

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\081SMPL.D\081SMPL.D#
Date Acquired: Mar 21 2018 07:02 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2081-011
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0052	-0.001	ppb	118.16	100.	
11 B	2.9905	0.5981	ppb	9.74	1000.	
23 Na	17.155	3.431	ppb	16.88	200000.	
25 Mg	6.63	1.326	ppb	11.65	200000.	
27 Al	12.53	2.506	ppb	7.83	200000.	
28 Si	-501.	-100.2	ppb	32.71	#VALUE!	
29 Si	-462.15	-92.43	ppb	13.12	10000.	
39 K	-19.095	-3.819	ppb	87.07	200000.	
43 Ca	15.44	3.088	ppb	67.39	#VALUE!	
44 Ca	8.035	1.607	ppb	111.95	200000.	
51 V	0.3132	0.0626	ppb	75.94	1000.	
52 Cr	0.4997	0.0999	ppb	42.36	2000.	
53 Cr	32.78	6.556	ppb	3.89	#VALUE!	
55 Mn	0.3652	0.073	ppb	18.73	2000.	
56 Fe	-38.28	-7.656	ppb	30.63	#VALUE!	
57 Fe	-14.58	-2.916	ppb	11.30	100000.	
59 Co	0.0023	0.0005	ppb	1028.90	1000.	
60 Ni	0.0017	0.0003	ppb	3435.30	1000.	
63 Cu	0.3416	0.0683	ppb	10.44	#VALUE!	
65 Cu	0.3138	0.0628	ppb	15.00	2000.	
66 Zn	1.164	0.2328	ppb	12.34	2000.	
68 Zn	-0.0668	-0.0134	ppb	1001.50	#VALUE!	
75 As	0.4857	0.0971	ppb	294.76	1000.	
82 Se	0.657	0.1314	ppb	148.25	1000.	
88 Sr	0.1241	0.0248	ppb	35.14	2000.	
98 Mo	0.0148	0.003	ppb	198.65	1000.	
107 Ag	-0.0039	-0.0008	ppb	279.23	100.	
109 Ag	-0.0051	-0.001	ppb	112.17	#VALUE!	
111 Cd	-0.2264	-0.0453	ppb	56.44	#VALUE!	
114 Cd	-0.0299	-0.006	ppb	35.05	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.5525	0.3105	ppb	3.22	1000.	
120 Sn	1.5325	0.3065	ppb	4.93	#VALUE!	
121 Sb	0.1134	0.0227	ppb	21.52	#VALUE!	
123 Sb	0.1424	0.0285	ppb	38.18	1000.	
135 Ba	0.2354	0.0471	ppb	9.66	2000.	
137 Ba	0.1925	0.0385	ppb	59.34	#VALUE!	
182 W	0.033	0.0066	ppb	46.44	1000.	
203 Tl	0.0185	0.0037	ppb	63.72	1000.	
205 Tl	0.0207	0.0041	ppb	43.59	#VALUE!	
208 Pb	0.0585	0.0117	ppb	4.78	2000.	
232 Th	0.0522	0.0104	ppb	14.14	1000.	
238 U	-0.0021	-0.0004	ppb	117.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3340713.30	1.53	3258324.00	102.5	69.5 - 120	
45 Sc	2875843.80	1.63	2896530.80	99.3	69.5 - 120	
89 Y	3513979.50	0.81	3408096.80	103.1	69.5 - 120	
159 Tb	3618611.30	0.83	3559216.30	101.7	69.5 - 120	
209 Bi	2002920.80	1.21	2013556.00	99.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000299

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\082SMPL.D\082SMPL.D#
Date Acquired: Mar 21 2018 07:06 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2081-012
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0034	-0.0007	ppb	313.80	100.	
11 B	2.3005	0.4601	ppb	12.34	1000.	
23 Na	64.9	12.98	ppb	2.19	200000.	
25 Mg	10.515	2.103	ppb	7.57	200000.	
27 Al	10.7	2.14	ppb	6.17	200000.	
28 Si	-334.25	-66.85	ppb	36.77	#VALUE!	
29 Si	-380.5	-76.1	ppb	19.45	10000.	
39 K	31.865	6.373	ppb	19.82	200000.	
43 Ca	69.35	13.87	ppb	8.08	#VALUE!	
44 Ca	37.265	7.453	ppb	13.85	200000.	
51 V	0.2589	0.0518	ppb	144.52	1000.	
52 Cr	0.5245	0.1049	ppb	23.96	2000.	
53 Cr	33.07	6.614	ppb	5.95	#VALUE!	
55 Mn	0.5185	0.1037	ppb	15.40	2000.	
56 Fe	-37.84	-7.568	ppb	18.34	#VALUE!	
57 Fe	-14.795	-2.959	ppb	8.03	100000.	
59 Co	-0.0174	-0.0035	ppb	105.39	1000.	
60 Ni	0.0683	0.0137	ppb	38.87	1000.	
63 Cu	1.2535	0.2507	ppb	1.07	#VALUE!	
65 Cu	1.289	0.2578	ppb	9.17	2000.	
66 Zn	4.421	0.8842	ppb	4.50	2000.	
68 Zn	2.2865	0.4573	ppb	8.39	#VALUE!	
75 As	0.4856	0.0971	ppb	116.66	1000.	
82 Se	0.581	0.1162	ppb	295.87	1000.	
88 Sr	0.1968	0.0394	ppb	15.18	2000.	
98 Mo	0.0241	0.0048	ppb	87.79	1000.	
107 Ag	0.0119	0.0024	ppb	27.06	100.	
109 Ag	0.0005	0.0001	ppb	417.02	#VALUE!	
111 Cd	-0.1054	-0.0211	ppb	262.74	#VALUE!	
114 Cd	0.0026	0.0005	ppb	649.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.809	0.3618	ppb	6.61	1000.	
120 Sn	1.9015	0.3803	ppb	5.96	#VALUE!	
121 Sb	0.1152	0.023	ppb	34.91	#VALUE!	
123 Sb	0.1745	0.0349	ppb	20.73	1000.	
135 Ba	0.2196	0.0439	ppb	22.09	2000.	
137 Ba	0.3233	0.0647	ppb	25.58	#VALUE!	
182 W	0.0467	0.0093	ppb	38.65	1000.	
203 Tl	-0.0139	-0.0028	ppb	24.75	1000.	
205 Tl	0.0011	0.0002	ppb	336.04	#VALUE!	
208 Pb	0.0821	0.0164	ppb	63.44	2000.	
232 Th	0.0351	0.007	ppb	24.90	1000.	
238 U	-0.0027	-0.0005	ppb	33.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3319912.00	2.48	3258324.00	101.9	69.5 - 120	
45 Sc	2873376.00	0.48	2896530.80	99.2	69.5 - 120	
89 Y	3524218.80	0.61	3408096.80	103.4	69.5 - 120	
159 Tb	3643092.80	1.16	3559216.30	102.4	69.5 - 120	
209 Bi	2004045.60	0.62	2013556.00	99.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000300

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\083SMPL.D\083SMPL.D#
Date Acquired: Mar 21 2018 07:10 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2081-001
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0072	0.0014	ppb	134.38	100.	
11 B	7,610.	1,522.	ppb	4.07	1000.	>LDR
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	835,000.	167,000.	ppb	0.38	200000.	
27 Al	38.07	7.614	ppb	2.45	200000.	
28 Si	7,375.	1,475.	ppb	3.79	#VALUE!	
29 Si	7,635.	1,527.	ppb	2.40	10000.	
39 K	97,450.	19,490.	ppb	0.52	200000.	
43 Ca	630,000.	126,000.	ppb	0.58	#VALUE!	
44 Ca	604,500.	120,900.	ppb	0.86	200000.	
51 V	2.3565	0.4713	ppb	34.78	1000.	
52 Cr	9.76	1.952	ppb	2.67	2000.	
53 Cr	34.125	6.825	ppb	4.84	#VALUE!	
55 Mn	591.	118.2	ppb	1.89	2000.	
56 Fe	27,550.	5,510.	ppb	1.94	#VALUE!	
57 Fe	29,505.	5,901.	ppb	2.01	100000.	
59 Co	1.0335	0.2067	ppb	1.60	1000.	
60 Ni	7.435	1.487	ppb	0.99	1000.	
63 Cu	87.65	17.53	ppb	3.89	#VALUE!	
65 Cu	5.225	1.045	ppb	1.80	2000.	
66 Zn	17.43	3.486	ppb	3.49	2000.	
68 Zn	3.833	0.7666	ppb	13.19	#VALUE!	
75 As	38.405	7.681	ppb	2.04	1000.	
82 Se	22.17	4.434	ppb	2.33	1000.	
88 Sr	8,390.	1,678.	ppb	0.50	2000.	
98 Mo	237.	47.4	ppb	1.04	1000.	
107 Ag	0.0104	0.0021	ppb	182.92	100.	
109 Ag	-0.0008	-0.0002	ppb	458.41	#VALUE!	
111 Cd	-0.0645	-0.0129	ppb	130.88	#VALUE!	
114 Cd	-0.0119	-0.0024	ppb	569.21	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.467	0.2934	ppb	5.85	1000.	
120 Sn	1.4265	0.2853	ppb	5.62	#VALUE!	
121 Sb	0.2927	0.0585	ppb	15.98	#VALUE!	
123 Sb	0.3164	0.0633	ppb	19.42	1000.	
135 Ba	33.815	6.763	ppb	1.49	2000.	
137 Ba	33.065	6.613	ppb	1.96	#VALUE!	
182 W	0.114	0.0228	ppb	16.42	1000.	
203 Tl	0.0151	0.003	ppb	1.79	1000.	
205 Tl	0.0102	0.002	ppb	116.49	#VALUE!	
208 Pb	0.0923	0.0185	ppb	5.29	2000.	
232 Th	0.0698	0.014	ppb	21.94	1000.	
238 U	11.33	2.266	ppb	3.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3284330.50	1.11	3258324.00	100.8	69.5 - 120	
45 Sc	3090739.00	0.26	2896530.80	106.7	69.5 - 120	
89 Y	3557285.30	1.54	3408096.80	104.4	69.5 - 120	
159 Tb	3616922.80	0.79	3559216.30	101.6	69.5 - 120	
209 Bi	1771106.30	0.36	2013556.00	88.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000301

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\084SMPL.D\084SMPL.D#
Date Acquired: Mar 21 2018 07:14 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.003	-0.003	ppb	38.63	100.	
11 B	14.08	14.08	ppb	10.34	1000.	
23 Na	13.56	13.56	ppb	36.72	200000.	
25 Mg	3.013	3.013	ppb	43.35	200000.	
27 Al	0.9305	0.9305	ppb	10.25	200000.	
28 Si	-86.61	-86.61	ppb	34.13	#VALUE!	
29 Si	-104.8	-104.8	ppb	30.70	10000.	LOW
39 K	-6.078	-6.078	ppb	29.53	200000.	
43 Ca	3.639	3.639	ppb	15.19	#VALUE!	
44 Ca	-1.339	-1.339	ppb	128.23	200000.	
51 V	-0.0252	-0.0252	ppb	161.81	1000.	
52 Cr	-0.027	-0.027	ppb	75.36	2000.	
53 Cr	0.5572	0.5572	ppb	20.12	#VALUE!	
55 Mn	0.0107	0.0107	ppb	57.61	2000.	
56 Fe	-1.691	-1.691	ppb	113.90	#VALUE!	
57 Fe	-0.5476	-0.5476	ppb	439.74	100000.	
59 Co	-0.0057	-0.0057	ppb	20.21	1000.	
60 Ni	0.0086	0.0086	ppb	121.70	1000.	
63 Cu	0.0019	0.0019	ppb	825.07	#VALUE!	
65 Cu	0.0049	0.0049	ppb	257.66	2000.	
66 Zn	0.0404	0.0404	ppb	28.64	2000.	
68 Zn	-0.0824	-0.0824	ppb	12.65	#VALUE!	
75 As	0.0432	0.0432	ppb	357.87	1000.	
82 Se	-0.0408	-0.0408	ppb	1341.10	1000.	
88 Sr	0.0317	0.0317	ppb	35.57	2000.	
98 Mo	0.0108	0.0108	ppb	8.00	1000.	
107 Ag	0.0009	0.0009	ppb	90.16	100.	
109 Ag	0.0002	0.0002	ppb	180.79	#VALUE!	
111 Cd	-0.0359	-0.0359	ppb	96.43	#VALUE!	
114 Cd	0.0018	0.0018	ppb	207.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0095	0.0095	ppb	34.71	1000.	
120 Sn	0.0074	0.0074	ppb	61.14	#VALUE!	
121 Sb	-0.0038	-0.0038	ppb	72.76	#VALUE!	
123 Sb	0.0008	0.0008	ppb	564.09	1000.	
135 Ba	0.0066	0.0066	ppb	173.62	2000.	
137 Ba	0.	0.	ppb	24887.00	#VALUE!	
182 W	-0.009	-0.009	ppb	60.76	1000.	
203 Tl	0.0068	0.0068	ppb	37.47	1000.	
205 Tl	0.0036	0.0036	ppb	105.65	#VALUE!	
208 Pb	0.0047	0.0047	ppb	32.18	2000.	
232 Th	0.0009	0.0009	ppb	114.66	1000.	
238 U	-0.0012	-0.0012	ppb	59.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3402454.30	1.17	3258324.00	104.4	69.5 - 120	
45 Sc	2912705.80	1.97	2896530.80	100.6	69.5 - 120	
89 Y	3408884.30	0.66	3408096.80	100.0	69.5 - 120	
159 Tb	3569193.80	1.07	3559216.30	100.3	69.5 - 120	
209 Bi	1978100.80	0.84	2013556.00	98.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000302

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\085SMPL.D\085SMPL.D#
Date Acquired: Mar 21 2018 07:18 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2081-002
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0084	-0.0017	ppb	34.72	100.	
11 B	7,630.	1,526.	ppb	1.24	1000.	>LDR
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	854,500.	170,900.	ppb	1.08	200000.	
27 Al	22.575	4.515	ppb	1.89	200000.	
28 Si	7,440.	1,488.	ppb	2.71	#VALUE!	
29 Si	7,655.	1,531.	ppb	1.26	10000.	
39 K	99,750.	19,950.	ppb	2.20	200000.	
43 Ca	638,000.	127,600.	ppb	2.01	#VALUE!	
44 Ca	613,000.	122,600.	ppb	0.46	200000.	
51 V	1.7785	0.3557	ppb	18.50	1000.	
52 Cr	4.8215	0.9643	ppb	4.50	2000.	
53 Cr	33.86	6.772	ppb	6.23	#VALUE!	
55 Mn	607.5	121.5	ppb	1.25	2000.	
56 Fe	27,500.	5,500.	ppb	0.76	#VALUE!	
57 Fe	29,360.	5,872.	ppb	1.08	100000.	
59 Co	1.049	0.2098	ppb	5.36	1000.	
60 Ni	8.1	1.62	ppb	5.30	1000.	
63 Cu	87.75	17.55	ppb	0.69	#VALUE!	
65 Cu	5.075	1.015	ppb	4.55	2000.	
66 Zn	17.57	3.514	ppb	1.10	2000.	
68 Zn	4.39	0.878	ppb	15.54	#VALUE!	
75 As	35.21	7.042	ppb	3.47	1000.	
82 Se	18.51	3.702	ppb	10.69	1000.	
88 Sr	8,445.	1,689.	ppb	1.37	2000.	
98 Mo	238.25	47.65	ppb	0.91	1000.	
107 Ag	0.0027	0.0005	ppb	363.88	100.	
109 Ag	-0.0005	-0.0001	ppb	353.34	#VALUE!	
111 Cd	0.2101	0.042	ppb	47.44	#VALUE!	
114 Cd	-0.0192	-0.0038	ppb	186.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.3615	0.2723	ppb	12.32	1000.	
120 Sn	1.364	0.2728	ppb	12.54	#VALUE!	
121 Sb	0.237	0.0474	ppb	8.58	#VALUE!	
123 Sb	0.3011	0.0602	ppb	12.72	1000.	
135 Ba	34.09	6.818	ppb	2.58	2000.	
137 Ba	32.425	6.485	ppb	0.99	#VALUE!	
182 W	0.1337	0.0267	ppb	20.64	1000.	
203 Tl	0.0209	0.0042	ppb	157.93	1000.	
205 Tl	-0.0037	-0.0007	ppb	245.52	#VALUE!	
208 Pb	0.0514	0.0103	ppb	39.10	2000.	
232 Th	0.0471	0.0094	ppb	13.02	1000.	
238 U	11.605	2.321	ppb	0.21	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3412847.80	2.16	3258324.00	104.7	69.5 - 120	
45 Sc	3097611.50	1.64	2896530.80	106.9	69.5 - 120	
89 Y	3489638.00	1.60	3408096.80	102.4	69.5 - 120	
159 Tb	3569721.30	0.20	3559216.30	100.3	69.5 - 120	
209 Bi	1746284.50	0.54	2013556.00	86.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000303

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\086SMPL.D\086SMPL.D#
Date Acquired: Mar 21 2018 07:22 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2081-003
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0182	0.0036	ppb	27.21	100.	
11 B	3,938.5	787.7	ppb	2.88	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	638,000.	127,600.	ppb	1.02	200000.	
27 Al	86.9	17.38	ppb	2.20	200000.	
28 Si	21,590.	4,318.	ppb	2.57	#VALUE!	
29 Si	24,800.	4,960.	ppb	2.36	10000.	
39 K	138,100.	27,620.	ppb	1.53	200000.	
43 Ca	221,650.	44,330.	ppb	0.97	#VALUE!	
44 Ca	208,100.	41,620.	ppb	0.59	200000.	
51 V	5.36	1.072	ppb	3.11	1000.	
52 Cr	1.43	0.286	ppb	11.44	2000.	
53 Cr	32.805	6.561	ppb	8.03	#VALUE!	
55 Mn	327.5	65.5	ppb	0.72	2000.	
56 Fe	239.6	47.92	ppb	10.39	#VALUE!	
57 Fe	702.5	140.5	ppb	5.35	100000.	
59 Co	0.8605	0.1721	ppb	5.96	1000.	
60 Ni	5.015	1.003	ppb	2.80	1000.	
63 Cu	137.75	27.55	ppb	2.32	#VALUE!	
65 Cu	2.156	0.4312	ppb	17.73	2000.	
66 Zn	9.435	1.887	ppb	5.24	2000.	
68 Zn	3.3645	0.6729	ppb	16.17	#VALUE!	
75 As	10.47	2.094	ppb	24.68	1000.	
82 Se	5.92	1.184	ppb	10.72	1000.	
88 Sr	3,701.	740.2	ppb	1.04	2000.	
98 Mo	0.783	0.1566	ppb	4.80	1000.	
107 Ag	0.0056	0.0011	ppb	98.94	100.	
109 Ag	0.0049	0.001	ppb	177.52	#VALUE!	
111 Cd	0.2044	0.0409	ppb	86.52	#VALUE!	
114 Cd	-0.0299	-0.006	ppb	78.18	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.7405	0.3481	ppb	11.93	1000.	
120 Sn	1.5365	0.3073	ppb	8.80	#VALUE!	
121 Sb	0.2583	0.0517	ppb	20.27	#VALUE!	
123 Sb	0.2959	0.0592	ppb	23.85	1000.	
135 Ba	41.56	8.312	ppb	1.32	2000.	
137 Ba	41.005	8.201	ppb	0.81	#VALUE!	
182 W	0.2289	0.0458	ppb	30.41	1000.	
203 Tl	-0.0203	-0.0041	ppb	111.30	1000.	
205 Tl	0.0001	0.	ppb	4702.90	#VALUE!	
208 Pb	0.1157	0.0231	ppb	17.66	2000.	
232 Th	0.0451	0.009	ppb	22.10	1000.	
238 U	0.1155	0.0231	ppb	9.03	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3572409.50	3.16	3258324.00	109.6	69.5 - 120	
45 Sc	3147214.80	1.70	2896530.80	108.7	69.5 - 120	
89 Y	3516357.80	0.60	3408096.80	103.2	69.5 - 120	
159 Tb	3524771.50	0.71	3559216.30	99.0	69.5 - 120	
209 Bi	1714331.10	1.22	2013556.00	85.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000304

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\087SMPL.D\087SMPL.D#
Date Acquired: Mar 21 2018 07:26 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2081-004
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0002	0.	ppb	2500.50	100.	
11 B	4,214.5	842.9	ppb	2.43	1000.	
23 Na	----	--------	ppb	--------	200000.	>LDR
25 Mg	682,000.	136,400.	ppb	1.99	200000.	
27 Al	11.895	2.379	ppb	6.72	200000.	
28 Si	22,400.	4,480.	ppb	1.13	#VALUE!	
29 Si	25,625.	5,125.	ppb	2.58	10000.	
39 K	146,100.	29,220.	ppb	1.24	200000.	
43 Ca	232,050.	46,410.	ppb	0.84	#VALUE!	
44 Ca	219,750.	43,950.	ppb	1.02	200000.	
51 V	3.9855	0.7971	ppb	6.16	1000.	
52 Cr	1.091	0.2182	ppb	15.82	2000.	
53 Cr	38.115	7.623	ppb	2.88	#VALUE!	
55 Mn	334.3	66.86	ppb	2.02	2000.	
56 Fe	39.405	7.881	ppb	59.27	#VALUE!	
57 Fe	510.5	102.1	ppb	3.44	100000.	
59 Co	0.813	0.1626	ppb	6.42	1000.	
60 Ni	5.1	1.02	ppb	8.79	1000.	
63 Cu	147.3	29.46	ppb	3.03	#VALUE!	
65 Cu	2.1515	0.4303	ppb	12.21	2000.	
66 Zn	9.07	1.814	ppb	4.71	2000.	
68 Zn	2.9595	0.5919	ppb	32.10	#VALUE!	
75 As	8.845	1.769	ppb	28.23	1000.	
82 Se	8.15	1.63	ppb	14.12	1000.	
88 Sr	3,932.5	786.5	ppb	2.58	2000.	
98 Mo	0.2555	0.0511	ppb	7.07	1000.	
107 Ag	0.0055	0.0011	ppb	120.13	100.	
109 Ag	0.008	0.0016	ppb	106.46	#VALUE!	
111 Cd	0.066	0.0132	ppb	243.44	#VALUE!	
114 Cd	0.0053	0.0011	ppb	466.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.52	0.304	ppb	8.60	1000.	
120 Sn	1.424	0.2848	ppb	3.69	#VALUE!	
121 Sb	0.1857	0.0371	ppb	17.38	#VALUE!	
123 Sb	0.2782	0.0556	ppb	17.84	1000.	
135 Ba	44.315	8.863	ppb	4.56	2000.	
137 Ba	44.495	8.899	ppb	3.91	#VALUE!	
182 W	0.2666	0.0533	ppb	7.31	1000.	
203 Tl	-0.0011	-0.0002	ppb	1968.10	1000.	
205 Tl	0.0091	0.0018	ppb	110.26	#VALUE!	
208 Pb	0.0557	0.0111	ppb	48.54	2000.	
232 Th	0.0291	0.0058	ppb	33.68	1000.	
238 U	0.0529	0.0106	ppb	2.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3608612.50	0.79	3258324.00	110.8	69.5 - 120	
45 Sc	3221906.50	0.92	2896530.80	111.2	69.5 - 120	
89 Y	3542297.50	1.81	3408096.80	103.9	69.5 - 120	
159 Tb	3547146.50	1.72	3559216.30	99.7	69.5 - 120	
209 Bi	1708703.00	1.39	2013556.00	84.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000305

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\088SMPL.D\088SMPL.D#
Date Acquired: Mar 21 2018 07:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0024	-0.0024	ppb	143.07	100.	
11 B	16.8	16.8	ppb	7.35	1000.	
23 Na	39.48	39.48	ppb	12.91	200000.	
25 Mg	1.773	1.773	ppb	17.47	200000.	
27 Al	0.7051	0.7051	ppb	1.43	200000.	
28 Si	-44.74	-44.74	ppb	68.60	#VALUE!	
29 Si	-61.84	-61.84	ppb	36.16	10000.	
39 K	-5.421	-5.421	ppb	25.84	200000.	
43 Ca	3.257	3.257	ppb	175.50	#VALUE!	
44 Ca	-2.97	-2.97	ppb	90.14	200000.	
51 V	0.0223	0.0223	ppb	88.66	1000.	
52 Cr	0.0313	0.0313	ppb	39.37	2000.	
53 Cr	2.437	2.437	ppb	9.78	#VALUE!	
55 Mn	0.0127	0.0127	ppb	105.69	2000.	
56 Fe	5.834	5.834	ppb	14.56	#VALUE!	
57 Fe	3.885	3.885	ppb	94.98	100000.	
59 Co	-0.0044	-0.0044	ppb	37.55	1000.	
60 Ni	0.0266	0.0266	ppb	61.12	1000.	
63 Cu	0.014	0.014	ppb	63.89	#VALUE!	
65 Cu	0.0078	0.0078	ppb	100.50	2000.	
66 Zn	-0.0271	-0.0271	ppb	179.90	2000.	
68 Zn	0.004	0.004	ppb	4346.70	#VALUE!	
75 As	-0.1224	-0.1224	ppb	60.09	1000.	
82 Se	0.0705	0.0705	ppb	475.47	1000.	
88 Sr	0.0176	0.0176	ppb	30.59	2000.	
98 Mo	0.0032	0.0032	ppb	90.90	1000.	
107 Ag	0.0014	0.0014	ppb	27.56	100.	
109 Ag	0.0004	0.0004	ppb	682.38	#VALUE!	
111 Cd	0.0207	0.0207	ppb	220.30	#VALUE!	
114 Cd	0.001	0.001	ppb	412.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0107	0.0107	ppb	102.99	1000.	
120 Sn	-0.0008	-0.0008	ppb	1993.20	#VALUE!	
121 Sb	-0.0053	-0.0053	ppb	33.32	#VALUE!	
123 Sb	0.0144	0.0144	ppb	16.70	1000.	
135 Ba	0.0202	0.0202	ppb	49.17	2000.	
137 Ba	0.0053	0.0053	ppb	194.30	#VALUE!	
182 W	-0.0042	-0.0042	ppb	105.19	1000.	
203 Tl	0.0031	0.0031	ppb	134.18	1000.	
205 Tl	0.0011	0.0011	ppb	264.28	#VALUE!	
208 Pb	0.0053	0.0053	ppb	18.50	2000.	
232 Th	0.0003	0.0003	ppb	298.64	1000.	
238 U	-0.0008	-0.0008	ppb	64.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3653722.00	3.36	3258324.00	112.1	69.5 - 120	
45 Sc	3060654.00	1.78	2896530.80	105.7	69.5 - 120	
89 Y	3482318.50	0.60	3408096.80	102.2	69.5 - 120	
159 Tb	3655250.30	0.48	3559216.30	102.7	69.5 - 120	
209 Bi	2024585.40	0.58	2013556.00	100.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000306

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\089SMPL.D\089SMPL.D#
Date Acquired: Mar 21 2018 07:35 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0017	-0.0017	ppb	28.80	100.	
11 B	11.25	11.25	ppb	8.87	1000.	
23 Na	21.82	21.82	ppb	3.32	200000.	
25 Mg	1.029	1.029	ppb	13.27	200000.	
27 Al	0.746	0.746	ppb	20.95	200000.	
28 Si	-59.3	-59.3	ppb	66.41	#VALUE!	
29 Si	-80.21	-80.21	ppb	30.50	10000.	
39 K	-6.124	-6.124	ppb	14.72	200000.	
43 Ca	6.168	6.168	ppb	14.35	#VALUE!	
44 Ca	-4.159	-4.159	ppb	45.06	200000.	
51 V	0.0152	0.0152	ppb	259.45	1000.	
52 Cr	-0.0019	-0.0019	ppb	507.56	2000.	
53 Cr	1.682	1.682	ppb	3.96	#VALUE!	
55 Mn	0.0163	0.0163	ppb	11.83	2000.	
56 Fe	2.235	2.235	ppb	61.88	#VALUE!	
57 Fe	2.899	2.899	ppb	14.55	100000.	
59 Co	-0.0076	-0.0076	ppb	78.35	1000.	
60 Ni	0.0086	0.0086	ppb	118.42	1000.	
63 Cu	-0.0034	-0.0034	ppb	86.86	#VALUE!	
65 Cu	-0.0011	-0.0011	ppb	673.53	2000.	
66 Zn	0.0207	0.0207	ppb	27.66	2000.	
68 Zn	-0.0519	-0.0519	ppb	262.19	#VALUE!	
75 As	-0.1237	-0.1237	ppb	49.20	1000.	
82 Se	-0.1964	-0.1964	ppb	254.07	1000.	
88 Sr	0.0121	0.0121	ppb	20.26	2000.	
98 Mo	0.002	0.002	ppb	164.92	1000.	
107 Ag	0.0017	0.0017	ppb	117.40	100.	
109 Ag	-0.0014	-0.0014	ppb	75.54	#VALUE!	
111 Cd	-0.0482	-0.0482	ppb	97.30	#VALUE!	
114 Cd	-0.0007	-0.0007	ppb	376.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0046	0.0046	ppb	404.96	1000.	
120 Sn	0.0159	0.0159	ppb	26.42	#VALUE!	
121 Sb	-0.0062	-0.0062	ppb	60.21	#VALUE!	
123 Sb	0.0136	0.0136	ppb	32.25	1000.	
135 Ba	0.0027	0.0027	ppb	169.02	2000.	
137 Ba	0.0086	0.0086	ppb	178.24	#VALUE!	
182 W	-0.0022	-0.0022	ppb	111.60	1000.	
203 Tl	0.003	0.003	ppb	63.79	1000.	
205 Tl	0.0017	0.0017	ppb	58.12	#VALUE!	
208 Pb	0.0047	0.0047	ppb	35.95	2000.	
232 Th	-0.0002	-0.0002	ppb	574.59	1000.	
238 U	-0.0004	-0.0004	ppb	199.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3442195.30	0.99	3258324.00	105.6	69.5 - 120	
45 Sc	2940783.80	1.33	2896530.80	101.5	69.5 - 120	
89 Y	3401473.30	1.31	3408096.80	99.8	69.5 - 120	
159 Tb	3557971.50	0.70	3559216.30	100.0	69.5 - 120	
209 Bi	1990063.30	0.81	2013556.00	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000307

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\090_CCV.D\090_CCV.D#
Date Acquired: Mar 21 2018 07:39 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.62	ppb	1.99	25	98.48	
11 B	30.72	ppb	1.62	25	122.88	Fail
23 Na	4,993.	ppb	2.52	5,000	99.86	
25 Mg	5,106.	ppb	0.52	5,000	102.12	
27 Al	507.8	ppb	0.68	500	101.56	
28 Si	413.7	ppb	5.67	500	82.74	
29 Si	371.8	ppb	2.68	500	74.36	Fail
39 K	4,994.	ppb	0.44	5,000	99.88	
43 Ca	5,076.	ppb	1.14	5,000	101.52	
44 Ca	5,141.	ppb	0.23	5,000	102.82	
51 V	25.38	ppb	1.32	25	101.52	
52 Cr	25.4	ppb	1.69	25	101.6	
53 Cr	25.82	ppb	2.54	25	103.28	
55 Mn	25.77	ppb	1.09	25	103.08	
56 Fe	5,099.	ppb	1.48	5,000	101.98	
57 Fe	5,247.	ppb	0.61	5,000	104.94	
59 Co	25.34	ppb	1.66	25	101.36	
60 Ni	25.46	ppb	0.87	25	101.84	
63 Cu	25.71	ppb	1.23	25	102.84	
65 Cu	25.47	ppb	1.32	25	101.88	
66 Zn	25.76	ppb	3.22	25	103.04	
68 Zn	26.06	ppb	3.93	25	104.24	
75 As	25.17	ppb	1.98	25	100.68	
82 Se	25.23	ppb	3.53	25	100.92	
88 Sr	25.13	ppb	0.62	25	100.52	
98 Mo	25.13	ppb	0.68	25	100.52	
107 Ag	25.68	ppb	1.48	25	102.72	
109 Ag	25.52	ppb	1.12	25	102.08	
111 Cd	25.76	ppb	1.21	25	103.04	
114 Cd	25.86	ppb	1.32	25	103.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.66	ppb	0.97	25	102.64	
120 Sn	25.83	ppb	0.65	25	103.32	
121 Sb	25.64	ppb	0.75	25	102.56	
123 Sb	25.7	ppb	0.25	25	102.8	
135 Ba	25.91	ppb	0.51	25	103.64	
137 Ba	25.74	ppb	0.64	25	102.96	
182 W	24.73	ppb	0.52	25	98.92	
203 Tl	25.28	ppb	1.64	25	101.12	
205 Tl	25.11	ppb	1.64	25	100.44	
208 Pb	25.16	ppb	1.25	25	100.64	
232 Th	24.05	ppb	0.37	25	96.2	
238 U	22.45	ppb	0.99	25	89.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3631679.00	1.19	3258324.00	111.5	80 - 120.4	
45 Sc	3148694.00	0.65	2896530.80	108.7	80 - 120.4	
89 Y	3640390.80	0.69	3408096.80	106.8	80 - 120.4	
159 Tb	3804843.30	1.41	3559216.30	106.9	80 - 120.4	
209 Bi	2088698.30	0.80	2013556.00	103.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000308

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\091_CCB.D\091_CCB.D#
Date Acquired: Mar 21 2018 07:43 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0006	ppb	509.64	1.00	
11 B	4.988	ppb	5.59	1.00	Fail
23 Na	11.44	ppb	1.29	1.00	
25 Mg	0.5583	ppb	20.69	1.00	
27 Al	0.4406	ppb	17.54	1.00	
28 Si	-85.81	ppb	38.70	1.00	
29 Si	-103.7	ppb	44.03	1.00	
39 K	-8.891	ppb	20.88	1.00	
43 Ca	0.9018	ppb	257.49	1.00	
44 Ca	-4.984	ppb	20.55	1.00	
51 V	-0.0071	ppb	1004.20	1.00	
52 Cr	-0.0296	ppb	9.63	1.00	
53 Cr	0.3281	ppb	60.90	1.00	
55 Mn	0.0208	ppb	59.21	1.00	
56 Fe	-2.566	ppb	121.71	1.00	
57 Fe	-0.5291	ppb	766.40	1.00	
59 Co	-0.0085	ppb	36.99	1.00	
60 Ni	-0.0084	ppb	12.29	1.00	
63 Cu	0.0016	ppb	368.25	1.00	
65 Cu	-0.0004	ppb	1991.10	1.00	
66 Zn	-0.0247	ppb	140.67	1.00	
68 Zn	-0.0826	ppb	144.60	1.00	
75 As	-0.0748	ppb	245.22	1.00	
82 Se	-0.0485	ppb	428.84	1.00	
88 Sr	0.0051	ppb	4.74	1.00	
98 Mo	0.0128	ppb	4.35	1.00	
107 Ag	0.0007	ppb	255.09	1.00	
109 Ag	0.0005	ppb	291.46	1.00	
111 Cd	-0.0378	ppb	62.16	1.00	
114 Cd	-0.0004	ppb	432.63	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0162	ppb	81.82	1.00	
120 Sn	0.0066	ppb	106.80	1.00	
121 Sb	-0.0004	ppb	1155.80	1.00	
123 Sb	0.0072	ppb	117.88	1.00	
135 Ba	0.007	ppb	203.13	1.00	
137 Ba	-0.0044	ppb	205.39	1.00	
182 W	0.0164	ppb	31.93	1.00	
203 Tl	0.0041	ppb	133.07	1.00	
205 Tl	0.0037	ppb	30.33	1.00	
208 Pb	0.0012	ppb	229.88	1.00	
232 Th	0.0148	ppb	16.55	1.00	
238 U	0.0005	ppb	164.60	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3440911.30	2.82	3258324.00	105.6	79.5 - 120	
45 Sc	2911588.00	2.02	2896530.80	100.5	79.5 - 120	
89 Y	3390094.00	1.96	3408096.80	99.5	79.5 - 120	
159 Tb	3531697.80	1.69	3559216.30	99.2	79.5 - 120	
209 Bi	1958740.40	2.01	2013556.00	97.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000309

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: MD

ANALYSIS DATE: 03/22/2018

REVIEWED

FILE NAME: JLC22E

METHOD: ICP-MS

- ☐ 200.8
- ☑ 6020
- ☑ DOD

JSS-23-18

KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
_____(initals) on _____(date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17623	03/21/2018	03/21/2019	0 ug/L
Standard 1	MW17625	03/21/2018	04/26/2018	Varies by Element
ICV	MW17628	03/21/2018	06/21/2018	Varies by Element
PQL	MW17629	03/21/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17570	02/16/2018	05/14/2018	Varies by Element
ICSA	MW17630	03/21/2018	03/27/2018	Varies by Element
ICSAB	MW17631	03/21/2018	03/27/2018	Varies by Element
CCV	MW17626	03/21/2018	04/26/2018	Varies by Element
Internal Standard	MW17585	02/22/2018	05/22/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

-Ge was used for internal std. due to internal standard instabilities while analyzing with V

JSS 23 18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17623(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL ofMW17623(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

ME-019 – Revision 1 – 01/20/2016

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC22E	3/22/2018	5:09:00 13:55	MD
200.8 TUNE	1	JLC22E	3/22/2018	5:09:00 13:57	MD
Cal Blank	1	JLC22E	3/22/2018	5:09:00 17:09	MD
Cal Std 6	1	JLC22E	3/22/2018	5:13:00 17:13	MD
ICV	1	JLC22E	3/22/2018	5:17:00 17:17	MD
ICB	1	JLC22E	3/22/2018	5:21:00 17:21	MD
PQL	1	JLC22E	3/22/2018	5:25:00 17:25	MD
RINSE	1	JLC22E	3/22/2018	5:29:00 17:29	MD
ICSA	1	JLC22E	3/22/2018	5:33:00 17:33	MD
ICSAB	1	JLC22E	3/22/2018	5:37:00 17:37	MD
RINSE	1	JLC22E	3/22/2018	5:41:00 17:41	MD
LRS1	1	JLC22E	3/22/2018	5:45:00 17:45	MD
LRS2	1	JLC22E	3/22/2018	5:49:00 17:49	MD
RINSE	1	JLC22E	3/22/2018	5:53:00 17:53	MD
RINSE	1	JLC22E	3/22/2018	5:57:00 17:57	MD
CCV	1	JLC22E	3/22/2018	6:01:00 18:01	MD
CCB	1	JLC22E	3/22/2018	6:05:00 18:05	MD
SL2079-001	5	JLC22E	3/22/2018	6:09:00 18:09	MD
SL2079-002	5	JLC22E	3/22/2018	6:13:00 18:13	MD
SL2133-001	5	JLC22E	3/22/2018	6:18:00 18:18	MD
SL2133-005	5	JLC22E	3/22/2018	6:22:00 18:22	MD
SL2133-008	5	JLC22E	3/22/2018	6:26:00 18:26	MD
SL2133-009	5	JLC22E	3/22/2018	6:30:00 18:30	MD
SL2133-012	5	JLC22E	3/22/2018	6:34:00 18:34	MD
SL2133-013	5	JLC22E	3/22/2018	6:38:00 18:38	MD
RINSE	1	JLC22E	3/22/2018	6:42:00 18:42	MD
RINSE	1	JLC22E	3/22/2018	6:46:00 18:46	MD
CCV	1	JLC22E	3/22/2018	6:50:00 18:50	MD
CCB	1	JLC22E	3/22/2018	6:54:00 18:54	MD
PBSLC21IMS1	5	JLC22E	3/22/2018	6:58:00 18:58	MD
LCSOLC21IMS1	5	JLC22E	3/22/2018	7:03:00 19:03	MD
SL2004-007	5	JLC22E	3/22/2018	7:06:00 19:06	MD
SL2005-005	5	JLC22E	3/22/2018	7:11:00 19:11	MD
SL2006-005	5	JLC22E	3/22/2018	7:15:00 19:15	MD
SL2006-006	5	JLC22E	3/22/2018	7:19:00 19:19	MD
RINSE	1	JLC22E	3/22/2018	7:24:00 19:24	MD
RINSE	1	JLC22E	3/22/2018	7:28:00 19:28	MD
PBSLC22IMS1	5	JLC22E	3/22/2018	7:32:00 19:32	MD
LCSOLC22IMS1	5	JLC22E	3/22/2018	7:36:00 19:36	MD
CCV	1	JLC22E	3/22/2018	7:40:00 19:40	MD
CCB	1	JLC22E	3/22/2018	7:44:00 19:44	MD
SL2329-001	5	JLC22E	3/22/2018	7:48:00 19:48	MD
SL2329-002	5	JLC22E	3/22/2018	7:53:00 19:53	MD
SL2329-003	5	JLC22E	3/22/2018	7:57:00 19:57	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2329-004	5	JLC22E	3/22/2018	8:01:00 20:01	MD
SL2329-005	5	JLC22E	3/22/2018	8:05:00 20:05	MD
SL2329-006	5	JLC22E	3/22/2018	8:10:00 20:10	MD
SL2329-007	5	JLC22E	3/22/2018	8:14:00 20:14	MD
SL2329-008	5	JLC22E	3/22/2018	8:18:00 20:18	MD
SL2329-008L	25	JLC22E	3/22/2018	8:23:00 20:23	MD
RINSE	1	JLC22E	3/22/2018	8:27:00 20:27	MD
CCV	1	JLC22E	3/22/2018	8:31:00 20:31	MD
CCB	1	JLC22E	3/22/2018	8:35:00 20:35	MD
SL2329-008A	5	JLC22E	3/22/2018	8:39:00 20:39	MD
SL2329-008S	5	JLC22E	3/22/2018	8:44:00 20:44	MD
SL2329-008P	5	JLC22E	3/22/2018	8:48:00 20:48	MD
SL2329-009	5	JLC22E	3/22/2018	8:52:00 20:52	MD
SL2329-010	5	JLC22E	3/22/2018	8:57:00 20:57	MD
SL2329-011	5	JLC22E	3/22/2018	9:01:00 21:01	MD
SL2329-012	5	JLC22E	3/22/2018	9:05:00 21:05	MD
SL2329-013	5	JLC22E	3/22/2018	9:10:00 21:10	MD
SL2329-014	5	JLC22E	3/22/2018	9:14:00 21:14	MD
RINSE	1	JLC22E	3/22/2018	9:18:00 21:18	MD
CCV	1	JLC22E	3/22/2018	9:22:00 21:22	MD
CCB	1	JLC22E	3/22/2018	9:27:00 21:27	MD
SL2329-017	5	JLC22E	3/22/2018	9:31:00 21:31	MD
SL2329-018	5	JLC22E	3/22/2018	9:35:00 21:35	MD
RINSE	1	JLC22E	3/22/2018	9:39:00 21:39	MD
PBWLC19IMW2	5	JLC22E	3/22/2018	9:43:00 21:43	MD
LCSWLC19IMW2	5	JLC22E	3/22/2018	9:48:00 21:48	MD
SL2138-011	5	JLC22E	3/22/2018	9:52:00 21:52	MD
SL2138-012	5	JLC22E	3/22/2018	9:56:00 21:56	MD
SL2133-020	5	JLC22E	3/22/2018	10:00:0 22:00	MD
RINSE	1	JLC22E	3/22/2018	10:04:0 22:04	MD
RINSE	1	JLC22E	3/22/2018	10:08:0 22:08	MD
CCV	1	JLC22E	3/22/2018	10:13:0 22:13	MD
CCB	1	JLC22E	3/22/2018	10:17:0 22:17	MD
SL2138-001	5	JLC22E	3/22/2018	10:21:0 22:21	MD
SL2138-002	5	JLC22E	3/22/2018	10:25:0 22:25	MD
SL2138-003	5	JLC22E	3/22/2018	10:29:0 22:29	MD
RINSE	1	JLC22E	3/22/2018	10:34:0 22:34	MD
RINSE	1	JLC22E	3/22/2018	10:38:0 22:38	MD
SL2138-004	5	JLC22E	3/22/2018	10:42:0 22:42	MD
SL2138-005	5	JLC22E	3/22/2018	10:46:0 22:46	MD
SL2138-006	5	JLC22E	3/22/2018	10:50:0 22:50	MD
RINSE	1	JLC22E	3/22/2018	10:55:0 22:55	MD
RINSE	1	JLC22E	3/22/2018	10:59:0 22:59	MD
CCV	1	JLC22E	3/22/2018	11:03:0 23:03	MD
CCB	1	JLC22E	3/22/2018	11:07:0 23:07	MD
SL2138-007	5	JLC22E	3/22/2018	11:11:0 23:11	MD
SL2138-008	5	JLC22E	3/22/2018	11:16:0 23:16	MD

MD 3/23/18

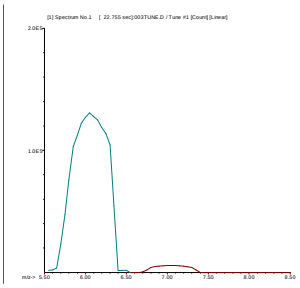
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2138-009	5	JLC22E	3/22/2018	11:20:0 23:20	MD
SL2138-010	5	JLC22E	3/22/2018	11:24:0 23:24	MD
RINSE	1	JLC22E	3/22/2018	11:28:0 23:28	MD
RINSE	1	JLC22E	3/22/2018	11:33:0 23:33	MD
RINSE	1	JLC22E	3/22/2018	11:37:0 23:37	MD
CCV	1	JLC22E	3/22/2018	11:41:0 23:41	MD
CCB	1	JLC22E	3/22/2018	11:45:0 23:45	MD
PQL	1	JLC22E	3/22/2018	11:49:0 23:49	MD
CCV	1	JLC22E	3/22/2018	11:53:0 23:53	MD
CCB	1	JLC22E	3/22/2018	11:58:0 23:58	MD

6020 QC Tune Report

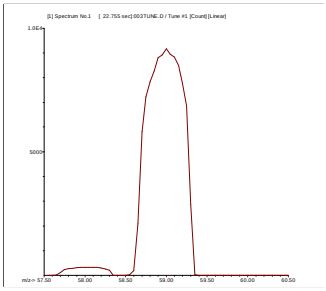
Data File: C:\ICPCHEM\1\DATA\JLC22A.B\003TUNE.D
Date Acquired: Mar 22 2018 01:55 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

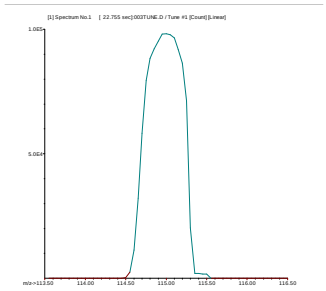
Element	Actual	Required	Flag
7 Li	2.10	5.00	
59 Co	1.96	5.00	
115 In	0.44	5.00	
205 Tl	1.58	5.00	



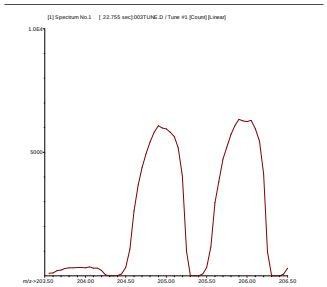
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



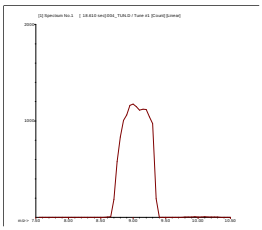
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

200.8 QC Tune Report

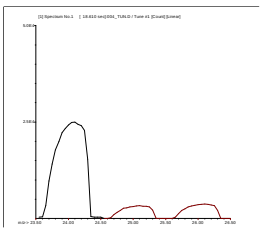
Data File: C:\ICPCHEM\1\DATA\JLC22A.B\004_TUN.D
Date Acquired: Mar 22 2018 01:57 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

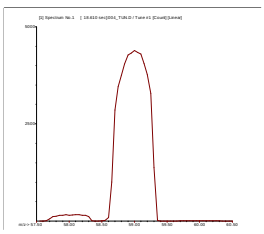
Element	Actual	Required	Flag
9 Be	2.24	5.00	
24 Mg	3.27	5.00	
59 Co	1.58	5.00	
115 In	2.11	5.00	
208 Pb	2.76	5.00	



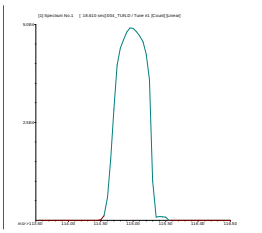
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



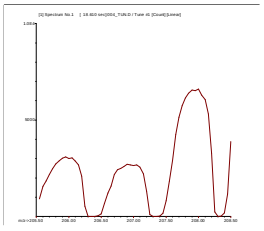
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000315

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.I
Date Acquired: Mar 22 2018 05:09 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 22 2018 05:12 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3343964.00	A	11290.00	0.34
9	Be	21.48	P	7.14	33.26
11	B	303.35	P	43.34	14.29
23	Na	59544.51	P	2130.00	3.58
25	Mg	297.80	P	39.07	13.12
27	Al	2023.03	P	236.60	11.70
28	Si	3525347.00	A	114000.00	3.23
29	Si	259855.00	P	4423.00	1.70
39	K	1194475.00	A	7113.00	0.60
43	Ca	170.39	P	78.84	46.27
44	Ca	8543.38	P	127.80	1.50
45	Sc	2753983.00	A	10060.00	0.37
51	V	1875.92	P	447.40	23.85
52	Cr	6921.81	P	308.70	4.46
53	Cr	5943.57	P	130.30	2.19
55	Mn	1645.70	P	76.92	4.67
56	Fe	1554777.00	A	18250.00	1.17
57	Fe	15189.31	P	209.20	1.38
59	Co	117.79	P	10.18	8.64
60	Ni	70.23	P	13.46	19.17
63	Cu	231.12	P	21.43	9.27
65	Cu	116.67	P	26.03	22.31
66	Zn	725.60	P	50.48	6.96
68	Zn	2293.59	P	134.50	5.86
72	Ge	501751.50	P	5744.00	1.14
75	As	56.66	P	166.80	294.37
82	Se	-14.92	P	14.35	96.15
88	Sr	107.42	P	39.02	36.33
89	Y	3000635.00	A	1328.00	0.04
98	Mo	22.52	P	10.24	45.47
107	Ag	40.00	P	17.32	43.30
109	Ag	17.78	P	3.85	21.65
111	Cd	945.90	P	44.94	4.75
114	Cd	-9.51	P	6.75	70.98
115	In	2820373.00	A	12450.00	0.44
118	Sn	448.91	P	23.41	5.21
120	Sn	596.70	P	20.82	3.49
121	Sb	36.67	P	11.55	31.50
123	Sb	18.89	P	3.85	20.38
135	Ba	23.33	P	14.53	62.27
137	Ba	16.67	P	3.33	20.00
159	Tb	3226356.00	A	29270.00	0.91
182	W	45.56	P	25.02	54.92
203	Tl	37.78	P	13.47	35.66
205	Tl	88.89	P	5.09	5.73
208	Pb	231.12	P	26.94	11.66
209	Bi	1827413.00	A	14250.00	0.78
232	Th	33.33	P	14.53	43.59
238	U	13.33	P	8.82	66.14

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\016CALI.D\016CALI.D#
Date Acquired: Mar 22 2018 05:13 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 22 2018 05:12 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3696983.00	A	37910.00	1.03
9 Be	131053.20	P	727.50	0.56
11 B	76085.74	P	1756.00	2.31
23 Na	85933432.00	A	707800.00	0.82
25 Mg	7093216.00	A	94740.00	1.34
27 Al	6598884.00	A	51480.00	0.78
28 Si	7248570.00	A	31390.00	0.43
29 Si	459634.00	P	1540.00	0.34
39 K	90612528.00	A	675700.00	0.75
43 Ca	162138.80	P	2919.00	1.80
44 Ca	2591622.00	A	18890.00	0.73
45 Sc	3005153.00	A	33970.00	1.13
51 V	543246.00	P	2144.00	0.39
52 Cr	465949.59	P	1966.00	0.42
53 Cr	60282.88	P	834.50	1.38
55 Mn	576591.13	P	6397.00	1.11
56 Fe	93214080.00	A	538600.00	0.58
57 Fe	2279453.00	A	3440.00	0.15
59 Co	492809.19	P	5277.00	1.07
60 Ni	109546.50	P	862.00	0.79
63 Cu	254444.80	P	2644.00	1.04
65 Cu	118491.40	P	2181.00	1.84
66 Zn	59216.20	P	316.60	0.53
68 Zn	44593.81	P	500.90	1.12
72 Ge	537136.81	P	3841.00	0.72
75 As	57556.13	P	736.10	1.28
82 Se	3880.94	P	64.34	1.66
88 Sr	523427.31	P	3532.00	0.67
89 Y	3314535.00	A	37180.00	1.12
98 Mo	167034.91	P	597.40	0.36
107 Ag	257930.59	P	2711.00	1.05
109 Ag	246008.70	P	1207.00	0.49
111 Cd	50515.75	P	333.60	0.66
114 Cd	108165.00	P	610.70	0.56
115 In	3073080.00	A	10700.00	0.35
118 Sn	148623.41	P	1639.00	1.10
120 Sn	203272.91	P	1549.00	0.76
121 Sb	187095.30	P	1496.00	0.80
123 Sb	140808.09	P	732.30	0.52
135 Ba	42578.64	P	330.60	0.78
137 Ba	72826.83	P	759.40	1.04
159 Tb	3528498.00	A	32790.00	0.93
182 W	155508.41	P	868.80	0.56
203 Tl	138400.91	P	340.90	0.25
205 Tl	333008.00	P	3297.00	0.99
208 Pb	459385.00	P	4556.00	0.99
209 Bi	1959591.00	A	7949.00	0.41
232 Th	527771.19	P	4468.00	0.85
238 U	503773.31	P	3716.00	0.74

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3696982.80	1.03	3343964.50	110.6	79.5 - 120.4	
45 Sc	3005153.00	1.13	2753983.00	109.1	79.5 - 120.4	
72 Ge	537136.81	0.72	501751.53	107.1	79.5 - 120.4	
159 Tb	3528498.30	0.93	3226356.00	109.4	79.5 - 120.4	
209 Bi	1959590.60	0.41	1827412.60	107.2	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000317

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\017_ICV.D\017_ICV.D#
Date Acquired: Mar 22 2018 05:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.45	ppb	0.57	20	97.25	
11 B	20.22	ppb	3.64	20	101.1	
23 Na	3,813.	ppb	2.42	4,000	95.325	
25 Mg	3,890.	ppb	1.54	4,000	97.25	
27 Al	397.8	ppb	0.96	400	99.45	
28 Si	347.1	ppb	9.61	400	86.775	
29 Si	317.1	ppb	3.26	400	79.275	Fail
39 K	3,845.	ppb	0.60	4,000	96.125	
43 Ca	3,874.	ppb	0.61	4,000	96.85	
44 Ca	4,012.	ppb	0.78	4,000	100.3	
51 V	19.51	ppb	0.90	20	97.55	
52 Cr	19.33	ppb	1.19	20	96.65	
53 Cr	18.5	ppb	1.47	20	92.5	
55 Mn	19.49	ppb	0.46	20	97.45	
56 Fe	3,910.	ppb	1.29	4,000	97.75	
57 Fe	4,018.	ppb	1.14	4,000	100.45	
59 Co	19.42	ppb	0.94	20	97.1	
60 Ni	19.62	ppb	0.81	20	98.1	
63 Cu	19.6	ppb	1.51	20	98	
65 Cu	19.63	ppb	0.57	20	98.15	
66 Zn	20.06	ppb	0.62	20	100.3	
68 Zn	19.71	ppb	0.59	20	98.55	
75 As	19.34	ppb	0.93	20	96.7	
82 Se	19.9	ppb	2.51	20	99.5	
88 Sr	19.47	ppb	0.46	20	97.35	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.27	ppb	0.33	40	95.675	
107 Ag	19.82	ppb	0.23	20	99.1	
109 Ag	19.62	ppb	1.18	20	98.1	
111 Cd	19.94	ppb	0.44	20	99.7	
114 Cd	19.99	ppb	1.03	20	99.95	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.28	ppb	1.14	20	96.4	
120 Sn	19.57	ppb	0.86	20	97.85	
121 Sb	19.29	ppb	0.50	20	96.45	
123 Sb	19.38	ppb	1.13	20	96.9	
135 Ba	19.59	ppb	1.36	20	97.95	
137 Ba	19.76	ppb	3.42	20	98.8	
182 W	19.61	ppb	1.41	20	98.05	
203 Tl	20.34	ppb	2.29	20	101.7	
205 Tl	20.08	ppb	2.09	20	100.4	
208 Pb	19.61	ppb	1.16	20	98.05	
232 Th	19.3	ppb	1.97	20	96.5	
238 U	19.4	ppb	1.48	20	97	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3614712.00	1.15	3343964.50	108.1	80 - 120.4	
45 Sc	2973738.80	0.26	2753983.00	108.0	80 - 120.4	
72 Ge	530672.25	1.29	501751.53	105.8	80 - 120.4	
159 Tb	3461652.50	0.41	3226356.00	107.3	80 - 120.4	
209 Bi	1938019.10	0.52	1827412.60	106.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000318

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\018_ICB.D\018_ICB.D#
Date Acquired: Mar 22 2018 05:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.003	ppb	89.61	1.00	
11 B	0.7744	ppb	10.55	1.00	
23 Na	-0.0382	ppb	348.94	1.00	
25 Mg	0.0324	ppb	150.06	1.00	
27 Al	0.0572	ppb	99.27	1.00	
28 Si	40.9	ppb	87.41	1.00	
29 Si	25.82	ppb	116.89	1.00	
39 K	-1.4	ppb	40.46	1.00	
43 Ca	2.372	ppb	126.60	1.00	
44 Ca	2.455	ppb	40.77	1.00	
51 V	-0.003	ppb	740.72	1.00	
52 Cr	-0.0226	ppb	93.90	1.00	
53 Cr	-0.3367	ppb	16.18	1.00	
55 Mn	-0.0034	ppb	521.40	1.00	
56 Fe	2.398	ppb	47.21	1.00	
57 Fe	2.342	ppb	75.32	1.00	
59 Co	0.0003	ppb	845.26	1.00	
60 Ni	0.0034	ppb	181.80	1.00	
63 Cu	-0.0074	ppb	74.82	1.00	
65 Cu	-0.0113	ppb	26.28	1.00	
66 Zn	0.0061	ppb	661.03	1.00	
68 Zn	0.1276	ppb	81.98	1.00	
75 As	-0.0052	ppb	1249.50	1.00	
82 Se	0.172	ppb	122.27	1.00	
88 Sr	-0.001	ppb	546.58	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0195	ppb	37.72	1.00	
107 Ag	-0.0027	ppb	68.31	1.00	
109 Ag	-0.0002	ppb	1061.80	1.00	
111 Cd	-0.0488	ppb	74.76	1.00	
114 Cd	0.0017	ppb	267.06	1.00	
115 In	--------	---	--------	---	
118 Sn	-0.0013	ppb	1680.60	1.00	
120 Sn	0.0046	ppb	306.80	1.00	
121 Sb	-0.0032	ppb	124.11	1.00	
123 Sb	0.0023	ppb	146.87	1.00	
135 Ba	-0.0068	ppb	190.53	1.00	
137 Ba	0.0078	ppb	59.02	1.00	
182 W	0.023	ppb	26.39	1.00	
203 Tl	0.0118	ppb	16.77	1.00	
205 Tl	-0.0001	ppb	1337.90	1.00	
208 Pb	-0.0012	ppb	122.83	1.00	
232 Th	0.0071	ppb	16.89	1.00	
238 U	0.0035	ppb	48.65	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3299046.00	0.66	3343964.50	98.7	79.5 - 120	
45 Sc	2725303.30	0.54	2753983.00	99.0	79.5 - 120	
72 Ge	497936.06	1.10	501751.53	99.2	79.5 - 120	
159 Tb	3192071.50	1.20	3226356.00	98.9	79.5 - 120	
209 Bi	1811892.30	0.03	1827412.60	99.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000319

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\019_PQL.D\019_PQL.D#
Date Acquired: Mar 22 2018 05:25 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1925	ppb	4.56	0.20	96.25	
11 B	4.644	ppb	1.52	4.00	116.1	
23 Na	198.3	ppb	0.49	200.00	99.15	
25 Mg	19.83	ppb	2.33	20.00	99.15	
27 Al	20.04	ppb	2.99	20.00	100.2	
28 Si	130.	ppb	13.73	100.00	130	
29 Si	123.2	ppb	23.26	100.00	123.2	Fail-DoD
39 K	192.6	ppb	1.33	200.00	96.3	
43 Ca	19.74	ppb	57.19	20.00	98.7	
44 Ca	21.81	ppb	7.74	20.00	109.05	
51 V	0.9771	ppb	8.35	1.00	97.71	
52 Cr	0.9448	ppb	1.72	1.00	94.48	
53 Cr	0.5785	ppb	30.22	---	#VALUE!	
55 Mn	0.3826	ppb	1.93	0.40	95.65	
56 Fe	16.98	ppb	23.22	20.00	84.9	
57 Fe	22.97	ppb	11.15	20.00	114.85	
59 Co	0.21	ppb	5.04	0.20	105	
60 Ni	0.4293	ppb	1.43	0.40	107.325	
63 Cu	0.6098	ppb	4.45	0.60	101.633	
65 Cu	0.6093	ppb	11.11	0.60	101.55	
66 Zn	2.087	ppb	5.28	2.00	104.35	
68 Zn	2.01	ppb	5.98	2.00	100.5	
75 As	1.146	ppb	12.95	1.00	114.6	
82 Se	1.196	ppb	32.78	1.00	119.6	
88 Sr	0.9708	ppb	1.52	1.00	97.08	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9791	ppb	2.46	1.00	97.91	
107 Ag	0.2024	ppb	1.99	0.20	101.2	
109 Ag	0.1968	ppb	6.49	0.20	98.4	
111 Cd	0.1566	ppb	3.29	0.20	78.3	
114 Cd	0.1968	ppb	8.45	0.20	98.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.986	ppb	1.03	1.00	98.6	
120 Sn	1.015	ppb	1.07	1.00	101.5	
121 Sb	0.1871	ppb	6.21	0.20	93.55	
123 Sb	0.1823	ppb	9.76	0.20	91.15	
135 Ba	0.3949	ppb	7.53	0.40	98.725	
137 Ba	0.4394	ppb	5.02	0.40	109.85	
182 W	1.027	ppb	3.00	1.00	102.7	
203 Tl	0.1794	ppb	6.37	0.20	89.7	
205 Tl	0.1898	ppb	0.82	0.20	94.9	
208 Pb	0.187	ppb	4.43	0.20	93.5	
232 Th	0.194	ppb	1.48	0.20	97	
238 U	0.1996	ppb	2.58	0.20	99.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3348871.80	2.51	3343964.50	100.1	80 - 120.4	
45 Sc	2777059.80	0.53	2753983.00	100.8	80 - 120.4	
72 Ge	501387.75	1.36	501751.53	99.9	80 - 120.4	
159 Tb	3253222.80	0.00	3226356.00	100.8	80 - 120.4	
209 Bi	1837408.30	0.77	1827412.60	100.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000320

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\020SMPL.D\020SMPL.D#
Date Acquired: Mar 22 2018 05:29 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	510.07	100.	
11 B	0.4147	0.4147	ppb	9.19	1000.	
23 Na	0.1427	0.1427	ppb	299.02	200000.	
25 Mg	-0.0403	-0.0403	ppb	178.95	200000.	
27 Al	-0.0294	-0.0294	ppb	327.58	200000.	
28 Si	58.29	58.29	ppb	53.54	#VALUE!	
29 Si	56.11	56.11	ppb	24.31	10000.	
39 K	1.307	1.307	ppb	16.88	200000.	
43 Ca	2.24	2.24	ppb	90.40	#VALUE!	
44 Ca	2.13	2.13	ppb	93.47	200000.	
51 V	0.0027	0.0027	ppb	959.85	1000.	
52 Cr	-0.0432	-0.0432	ppb	28.16	2000.	
53 Cr	-0.3924	-0.3924	ppb	46.08	#VALUE!	
55 Mn	0.0055	0.0055	ppb	24.58	2000.	
56 Fe	2.997	2.997	ppb	89.09	#VALUE!	
57 Fe	3.277	3.277	ppb	11.95	100000.	
59 Co	-0.0015	-0.0015	ppb	212.77	1000.	
60 Ni	0.0056	0.0056	ppb	89.83	1000.	
63 Cu	-0.006	-0.006	ppb	72.71	#VALUE!	
65 Cu	-0.016	-0.016	ppb	34.26	2000.	
66 Zn	0.0275	0.0275	ppb	116.06	2000.	
68 Zn	0.0373	0.0373	ppb	452.06	#VALUE!	
75 As	0.0019	0.0019	ppb	3659.70	1000.	
82 Se	0.0284	0.0284	ppb	686.16	1000.	
88 Sr	-0.0025	-0.0025	ppb	196.06	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0079	0.0079	ppb	62.69	1000.	
107 Ag	-0.0034	-0.0034	ppb	41.91	100.	
109 Ag	-0.0002	-0.0002	ppb	868.95	#VALUE!	
111 Cd	-0.0511	-0.0511	ppb	44.04	#VALUE!	
114 Cd	0.0053	0.0053	ppb	147.27	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	-0.0167	-0.0167	ppb	103.77	1000.	
120 Sn	0.0133	0.0133	ppb	104.97	#VALUE!	
121 Sb	-0.0024	-0.0024	ppb	135.33	#VALUE!	
123 Sb	0.0055	0.0055	ppb	93.53	1000.	
135 Ba	-0.0008	-0.0008	ppb	1684.20	2000.	
137 Ba	0.0122	0.0122	ppb	53.66	#VALUE!	
182 W	0.0102	0.0102	ppb	30.99	1000.	
203 Tl	0.0005	0.0005	ppb	1078.60	1000.	
205 Tl	-0.0014	-0.0014	ppb	101.17	#VALUE!	
208 Pb	-0.0018	-0.0018	ppb	145.62	2000.	
232 Th	0.0014	0.0014	ppb	42.12	1000.	
238 U	0.001	0.001	ppb	85.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3232751.50	1.86	3343964.50	96.7	69.5 - 120	
45 Sc	2703221.80	0.06	2753983.00	98.2	69.5 - 120	
72 Ge	491900.63	0.26	501751.53	98.0	69.5 - 120	
159 Tb	3164505.30	0.68	3226356.00	98.1	69.5 - 120	
209 Bi	1818023.10	0.44	1827412.60	99.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000321

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\021ICSA.D\021ICSA.D#
Date Acquired: Mar 22 2018 05:33 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0014	ppb	31.34		
11 B	0.5758	ppb	5.83		
23 Na	95,480.	ppb	0.19		
25 Mg	94,160.	ppb	0.83		
27 Al	95,920.	ppb	0.39		
28 Si	-47.31	ppb	136.21		
29 Si	-127.7	ppb	17.15		
39 K	97,790.	ppb	1.45		
43 Ca	99,940.	ppb	0.29		
44 Ca	97,010.	ppb	1.02		
51 V	0.1873	ppb	10.76		
52 Cr	0.848	ppb	4.76		
53 Cr	-0.2135	ppb	39.46		
55 Mn	0.3289	ppb	4.84		
56 Fe	93,560.	ppb	0.81		
57 Fe	90,580.	ppb	1.47		
59 Co	0.0998	ppb	11.69		
60 Ni	-0.0689	ppb	37.78		
63 Cu	2.995	ppb	2.83		
65 Cu	0.9936	ppb	6.81		
66 Zn	2.384	ppb	3.66		
68 Zn	0.4524	ppb	17.85		
75 As	0.3338	ppb	28.04		
82 Se	0.3445	ppb	64.33		
88 Sr	0.9124	ppb	1.51		
89 Y	--------	---	--------		
98 Mo	1,841.	ppb	1.00		
107 Ag	0.0189	ppb	5.98		
109 Ag	0.0264	ppb	10.61		
111 Cd	0.0253	ppb	217.74		
114 Cd	0.0946	ppb	21.87		
115 In	--------	---	--------		
118 Sn	0.0519	ppb	38.11		
120 Sn	0.1001	ppb	48.68		
121 Sb	0.0545	ppb	15.27		
123 Sb	0.0636	ppb	5.21		
135 Ba	0.072	ppb	19.97		
137 Ba	0.0808	ppb	27.80		
182 W	0.2478	ppb	7.16		
203 Tl	-0.0006	ppb	1438.90		
205 Tl	-0.0009	ppb	440.24		
208 Pb	0.094	ppb	9.74		
232 Th	0.011	ppb	47.25		
238 U	0.0019	ppb	36.18		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3472781.80	1.93	3343964.50	103.9	69.5 - 120.4	
45 Sc	3000725.00	0.67	2753983.00	109.0	69.5 - 120.4	
72 Ge	548765.06	0.66	501751.53	109.4	69.5 - 120.4	
159 Tb	3436331.50	0.85	3226356.00	106.5	69.5 - 120.4	
209 Bi	1786188.50	1.23	1827412.60	97.7	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000322

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\022ICSB.D\022ICSB.D#
Date Acquired: Mar 22 2018 05:37 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.91	ppb	0.91	20.00	79.5 - 120	
11 B	20.49	ppb	1.13	20.00	79.5 - 120	
23 Na	94,740.	ppb	1.96	#########	79.5 - 120	
25 Mg	93,700.	ppb	1.52	#########	79.5 - 120	
27 Al	95,880.	ppb	0.70	#########	79.5 - 120	
28 Si	472.2	ppb	4.19	---	##### - #####	
29 Si	385.5	ppb	6.80	---	##### - #####	
39 K	97,430.	ppb	0.33	#########	79.5 - 120	
43 Ca	99,930.	ppb	0.52	#########	79.5 - 120	
44 Ca	97,010.	ppb	0.51	#########	79.5 - 120	
51 V	20.28	ppb	0.45	20.00	79.5 - 120	
52 Cr	20.45	ppb	0.56	20.00	79.5 - 120	
53 Cr	20.4	ppb	1.73	---	##### - #####	
55 Mn	19.91	ppb	0.28	20.00	79.5 - 120	
56 Fe	94,480.	ppb	0.65	#########	79.5 - 120	
57 Fe	91,780.	ppb	0.92	#########	79.5 - 120	
59 Co	19.4	ppb	0.54	20.00	79.5 - 120	
60 Ni	18.72	ppb	1.81	20.00	79.5 - 120	
63 Cu	21.62	ppb	0.43	20.00	79.5 - 120	
65 Cu	19.57	ppb	1.08	20.00	79.5 - 120	
66 Zn	20.67	ppb	0.44	20.00	79.5 - 120	
68 Zn	18.44	ppb	1.63	20.00	79.5 - 120	
75 As	20.07	ppb	2.20	20.00	79.5 - 120	
82 Se	19.53	ppb	1.33	20.00	79.5 - 120	
88 Sr	20.88	ppb	0.96	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,880.	ppb	1.05	2000.00	79.5 - 120	
107 Ag	18.51	ppb	0.27	20.00	79.5 - 120	
109 Ag	18.39	ppb	0.43	20.00	79.5 - 120	
111 Cd	18.48	ppb	0.79	20.00	79.5 - 120	
114 Cd	18.83	ppb	0.70	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	19.95	ppb	0.80	20.00	79.5 - 120	
120 Sn	19.89	ppb	1.05	20.00	79.5 - 120	
121 Sb	19.92	ppb	1.21	20.00	79.5 - 120	
123 Sb	20.	ppb	0.64	20.00	79.5 - 120	
135 Ba	20.27	ppb	2.21	20.00	79.5 - 120	
137 Ba	20.59	ppb	1.35	20.00	79.5 - 120	
182 W	20.52	ppb	0.37	20.00	79.5 - 120	
203 Tl	21.53	ppb	0.70	20.00	79.5 - 120	
205 Tl	21.32	ppb	0.83	20.00	79.5 - 120	
208 Pb	21.3	ppb	0.30	20.00	79.5 - 120	
232 Th	22.39	ppb	0.74	20.00	79.5 - 120	
238 U	21.97	ppb	0.86	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3428765.30	2.47	3343964.50	102.5	69.5 - 120	
45 Sc	3076682.80	1.40	2753983.00	111.7	69.5 - 120	
72 Ge	556081.56	0.72	501751.53	110.8	69.5 - 120	
159 Tb	3546494.50	0.10	3226356.00	109.9	69.5 - 120	
209 Bi	1805196.90	0.75	1827412.60	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000323

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\023SMPL.D\023SMPL.D#
Date Acquired: Mar 22 2018 05:41 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0004	0.0004	ppb	359.05	100.	
11 B	0.3956	0.3956	ppb	17.85	1000.	
23 Na	3.691	3.691	ppb	24.76	200000.	
25 Mg	1.787	1.787	ppb	10.77	200000.	
27 Al	1.99	1.99	ppb	15.67	200000.	
28 Si	-70.36	-70.36	ppb	23.11	#VALUE!	
29 Si	-159.4	-159.4	ppb	15.07	10000.	LOW
39 K	-10.75	-10.75	ppb	2.81	200000.	
43 Ca	8.209	8.209	ppb	73.65	#VALUE!	
44 Ca	4.838	4.838	ppb	26.44	200000.	
51 V	0.0095	0.0095	ppb	270.48	1000.	
52 Cr	-0.0621	-0.0621	ppb	14.36	2000.	
53 Cr	-0.1476	-0.1476	ppb	51.77	#VALUE!	
55 Mn	-0.0217	-0.0217	ppb	46.49	2000.	
56 Fe	-4.918	-4.918	ppb	38.98	#VALUE!	
57 Fe	-4.134	-4.134	ppb	66.30	100000.	
59 Co	0.0016	0.0016	ppb	118.64	1000.	
60 Ni	0.0023	0.0023	ppb	343.85	1000.	
63 Cu	0.0466	0.0466	ppb	30.58	#VALUE!	
65 Cu	0.0492	0.0492	ppb	16.08	2000.	
66 Zn	0.0971	0.0971	ppb	29.84	2000.	
68 Zn	-0.1566	-0.1566	ppb	33.54	#VALUE!	
75 As	-0.0861	-0.0861	ppb	124.07	1000.	
82 Se	0.0541	0.0541	ppb	390.76	1000.	
88 Sr	0.0001	0.0001	ppb	4970.20	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.3361	0.3361	ppb	15.55	1000.	
107 Ag	-0.0018	-0.0018	ppb	19.12	100.	
109 Ag	-0.0006	-0.0006	ppb	433.29	#VALUE!	
111 Cd	-0.1606	-0.1606	ppb	15.83	#VALUE!	
114 Cd	0.0008	0.0008	ppb	649.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0112	-0.0112	ppb	84.88	1000.	
120 Sn	0.0081	0.0081	ppb	149.94	#VALUE!	
121 Sb	0.0032	0.0032	ppb	148.20	#VALUE!	
123 Sb	0.0065	0.0065	ppb	32.17	1000.	
135 Ba	0.013	0.013	ppb	184.98	2000.	
137 Ba	0.0142	0.0142	ppb	33.22	#VALUE!	
182 W	-0.0009	-0.0009	ppb	560.16	1000.	
203 Tl	0.0031	0.0031	ppb	109.83	1000.	
205 Tl	-0.0011	-0.0011	ppb	326.02	#VALUE!	
208 Pb	0.0004	0.0004	ppb	63.67	2000.	
232 Th	0.0036	0.0036	ppb	36.24	1000.	
238 U	0.0018	0.0018	ppb	60.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3249148.30	1.37	3343964.50	97.2	69.5 - 120	
45 Sc	2785728.00	1.32	2753983.00	101.2	69.5 - 120	
72 Ge	513943.38	0.79	501751.53	102.4	69.5 - 120	
159 Tb	3323760.00	0.85	3226356.00	103.0	69.5 - 120	
209 Bi	1858471.30	0.45	1827412.60	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000324

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\024SMPL.D\024SMPL.D#
Date Acquired: Mar 22 2018 05:45 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	98.86	98.86	ppb	4.26	100.	
11 B	547.6	547.6	ppb	1.47	1000.	
23 Na	1.256	1.256	ppb	14.17	200000.	
25 Mg	1.157	1.157	ppb	4.49	200000.	
27 Al	1.467	1.467	ppb	3.86	200000.	
28 Si	-110.8	-110.8	ppb	24.33	#VALUE!	
29 Si	-216.4	-216.4	ppb	7.78	10000.	LOW
39 K	-16.31	-16.31	ppb	9.71	200000.	
43 Ca	1,519.	1,519.	ppb	4.57	#VALUE!	
44 Ca	280.4	280.4	ppb	5.66	200000.	
51 V	982.6	982.6	ppb	1.22	1000.	
52 Cr	1,943.	1,943.	ppb	1.10	2000.	
53 Cr	1,980.	1,980.	ppb	0.52	#VALUE!	
55 Mn	1,939.	1,939.	ppb	0.65	2000.	
56 Fe	-9.871	-9.871	ppb	1.99	#VALUE!	
57 Fe	-9.558	-9.558	ppb	31.25	100000.	
59 Co	968.9	968.9	ppb	1.39	1000.	
60 Ni	982.5	982.5	ppb	1.79	1000.	
63 Cu	1,933.	1,933.	ppb	0.92	#VALUE!	
65 Cu	1,941.	1,941.	ppb	0.41	2000.	
66 Zn	1,967.	1,967.	ppb	0.31	2000.	
68 Zn	1,983.	1,983.	ppb	0.64	#VALUE!	
75 As	995.	995.	ppb	1.02	1000.	
82 Se	1,014.	1,014.	ppb	1.06	1000.	>LDR
88 Sr	1,948.	1,948.	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	978.	978.	ppb	0.15	1000.	
107 Ag	102.9	102.9	ppb	0.90	100.	>LDR
109 Ag	102.8	102.8	ppb	0.68	#VALUE!	
111 Cd	1,024.	1,024.	ppb	1.03	#VALUE!	
114 Cd	1,014.	1,014.	ppb	1.46	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	971.8	971.8	ppb	1.05	1000.	
120 Sn	965.1	965.1	ppb	0.64	#VALUE!	
121 Sb	958.2	958.2	ppb	1.09	#VALUE!	
123 Sb	973.5	973.5	ppb	1.01	1000.	
135 Ba	2,012.	2,012.	ppb	0.75	2000.	>LDR
137 Ba	2,002.	2,002.	ppb	0.97	#VALUE!	
182 W	956.2	956.2	ppb	1.58	1000.	
203 Tl	963.3	963.3	ppb	0.88	1000.	
205 Tl	939.8	939.8	ppb	1.00	#VALUE!	
208 Pb	1,907.	1,907.	ppb	1.05	2000.	
232 Th	926.2	926.2	ppb	1.94	1000.	
238 U	917.2	917.2	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3402513.00	2.91	3343964.50	101.8	69.5 - 120	
45 Sc	2903268.50	0.46	2753983.00	105.4	69.5 - 120	
72 Ge	520641.06	0.26	501751.53	103.8	69.5 - 120	
159 Tb	3472384.80	0.70	3226356.00	107.6	69.5 - 120	
209 Bi	1958996.40	0.83	1827412.60	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000325

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 22 2018 05:49 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0084	0.0084	ppb	48.64	100.	
11 B	5.981	5.981	ppb	13.88	1000.	
23 Na	187,800.	187,800.	ppb	0.97	200000.	
25 Mg	184,800.	184,800.	ppb	1.81	200000.	
27 Al	190,800.	190,800.	ppb	1.31	200000.	
28 Si	10,810.	10,810.	ppb	1.84	#VALUE!	
29 Si	11,530.	11,530.	ppb	1.20	10000.	>LDR
39 K	192,300.	192,300.	ppb	0.46	200000.	
43 Ca	191,000.	191,000.	ppb	1.08	#VALUE!	
44 Ca	189,900.	189,900.	ppb	0.18	200000.	
51 V	0.1642	0.1642	ppb	37.35	1000.	
52 Cr	2.951	2.951	ppb	0.97	2000.	
53 Cr	1.029	1.029	ppb	14.04	#VALUE!	
55 Mn	7.886	7.886	ppb	1.31	2000.	
56 Fe	93,660.	93,660.	ppb	0.92	#VALUE!	
57 Fe	90,900.	90,900.	ppb	0.73	100000.	
59 Co	2.688	2.688	ppb	2.21	1000.	
60 Ni	3.486	3.486	ppb	1.87	1000.	
63 Cu	7.932	7.932	ppb	0.45	#VALUE!	
65 Cu	2.772	2.772	ppb	1.50	2000.	
66 Zn	6.083	6.083	ppb	1.46	2000.	
68 Zn	3.939	3.939	ppb	3.71	#VALUE!	
75 As	0.4809	0.4809	ppb	32.52	1000.	
82 Se	0.3711	0.3711	ppb	56.21	1000.	
88 Sr	6.541	6.541	ppb	0.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5455	0.5455	ppb	14.61	1000.	
107 Ag	0.33	0.33	ppb	5.12	100.	
109 Ag	0.3372	0.3372	ppb	1.24	#VALUE!	
111 Cd	-0.0998	-0.0998	ppb	15.74	#VALUE!	
114 Cd	0.0171	0.0171	ppb	19.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2013	0.2013	ppb	15.65	1000.	
120 Sn	0.2102	0.2102	ppb	3.24	#VALUE!	
121 Sb	0.1343	0.1343	ppb	9.64	#VALUE!	
123 Sb	0.1212	0.1212	ppb	11.91	1000.	
135 Ba	0.2673	0.2673	ppb	15.63	2000.	
137 Ba	0.2881	0.2881	ppb	11.81	#VALUE!	
182 W	0.3998	0.3998	ppb	4.76	1000.	
203 Tl	0.0517	0.0517	ppb	5.55	1000.	
205 Tl	0.0434	0.0434	ppb	15.77	#VALUE!	
208 Pb	0.6545	0.6545	ppb	2.97	2000.	
232 Th	0.2064	0.2064	ppb	24.49	1000.	
238 U	0.1264	0.1264	ppb	11.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3334861.30	2.28	3343964.50	99.7	69.5 - 120	
45 Sc	3021230.50	0.58	2753983.00	109.7	69.5 - 120	
72 Ge	529557.69	0.94	501751.53	105.5	69.5 - 120	
159 Tb	3302341.80	0.97	3226356.00	102.4	69.5 - 120	
209 Bi	1648745.40	0.18	1827412.60	90.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000326

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 22 2018 05:53 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	453.44	100.	
11 B	2.934	2.934	ppb	10.06	1000.	
23 Na	10.22	10.22	ppb	19.95	200000.	
25 Mg	2.841	2.841	ppb	20.87	200000.	
27 Al	2.371	2.371	ppb	19.19	200000.	
28 Si	-3.317	-3.317	ppb	983.42	#VALUE!	
29 Si	-115.3	-115.3	ppb	10.87	10000.	LOW
39 K	-5.693	-5.693	ppb	42.95	200000.	
43 Ca	6.273	6.273	ppb	61.55	#VALUE!	
44 Ca	5.707	5.707	ppb	30.82	200000.	
51 V	0.0034	0.0034	ppb	1868.60	1000.	
52 Cr	0.037	0.037	ppb	78.32	2000.	
53 Cr	1.763	1.763	ppb	6.32	#VALUE!	
55 Mn	-0.0087	-0.0087	ppb	204.49	2000.	
56 Fe	-0.6697	-0.6697	ppb	505.15	#VALUE!	
57 Fe	-2.736	-2.736	ppb	5.18	100000.	
59 Co	0.0026	0.0026	ppb	190.54	1000.	
60 Ni	0.0253	0.0253	ppb	31.30	1000.	
63 Cu	0.0755	0.0755	ppb	21.00	#VALUE!	
65 Cu	0.0493	0.0493	ppb	20.84	2000.	
66 Zn	0.0812	0.0812	ppb	31.02	2000.	
68 Zn	0.1249	0.1249	ppb	112.81	#VALUE!	
75 As	0.0779	0.0779	ppb	52.32	1000.	
82 Se	0.0946	0.0946	ppb	364.12	1000.	
88 Sr	0.0047	0.0047	ppb	27.13	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0786	0.0786	ppb	11.10	1000.	
107 Ag	-0.0021	-0.0021	ppb	36.60	100.	
109 Ag	0.0013	0.0013	ppb	140.33	#VALUE!	
111 Cd	-0.1625	-0.1625	ppb	12.33	#VALUE!	
114 Cd	0.0034	0.0034	ppb	103.46	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0263	0.0263	ppb	37.91	1000.	
120 Sn	0.0408	0.0408	ppb	14.75	#VALUE!	
121 Sb	0.0134	0.0134	ppb	41.59	#VALUE!	
123 Sb	0.0154	0.0154	ppb	13.92	1000.	
135 Ba	0.0147	0.0147	ppb	19.63	2000.	
137 Ba	0.0184	0.0184	ppb	20.60	#VALUE!	
182 W	0.0914	0.0914	ppb	20.48	1000.	
203 Tl	0.01	0.01	ppb	51.19	1000.	
205 Tl	0.0014	0.0014	ppb	127.46	#VALUE!	
208 Pb	0.0104	0.0104	ppb	6.86	2000.	
232 Th	0.0088	0.0088	ppb	15.20	1000.	
238 U	0.0099	0.0099	ppb	16.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3322981.50	0.19	3343964.50	99.4	69.5 - 120	
45 Sc	2827260.00	0.79	2753983.00	102.7	69.5 - 120	
72 Ge	520873.06	0.14	501751.53	103.8	69.5 - 120	
159 Tb	3307777.30	1.14	3226356.00	102.5	69.5 - 120	
209 Bi	1850604.80	0.49	1827412.60	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000327

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 22 2018 05:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0009	0.0009	ppb	108.37	100.	
11 B	2.095	2.095	ppb	7.26	1000.	
23 Na	4.216	4.216	ppb	17.21	200000.	
25 Mg	1.307	1.307	ppb	13.33	200000.	
27 Al	1.004	1.004	ppb	4.52	200000.	
28 Si	11.37	11.37	ppb	122.78	#VALUE!	
29 Si	-135.5	-135.5	ppb	0.48	10000.	LOW
39 K	-10.02	-10.02	ppb	19.55	200000.	
43 Ca	1.908	1.908	ppb	186.06	#VALUE!	
44 Ca	4.311	4.311	ppb	19.40	200000.	
51 V	0.0502	0.0502	ppb	91.39	1000.	
52 Cr	0.0133	0.0133	ppb	171.72	2000.	
53 Cr	1.738	1.738	ppb	11.59	#VALUE!	
55 Mn	-0.0127	-0.0127	ppb	42.78	2000.	
56 Fe	2.079	2.079	ppb	74.89	#VALUE!	
57 Fe	-1.385	-1.385	ppb	111.55	100000.	
59 Co	0.004	0.004	ppb	46.73	1000.	
60 Ni	0.0107	0.0107	ppb	50.49	1000.	
63 Cu	0.0561	0.0561	ppb	16.41	#VALUE!	
65 Cu	0.0538	0.0538	ppb	11.05	2000.	
66 Zn	0.1038	0.1038	ppb	24.15	2000.	
68 Zn	-0.0644	-0.0644	ppb	178.84	#VALUE!	
75 As	0.0609	0.0609	ppb	126.43	1000.	
82 Se	0.2686	0.2686	ppb	141.29	1000.	
88 Sr	0.0029	0.0029	ppb	177.80	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.052	0.052	ppb	15.42	1000.	
107 Ag	-0.001	-0.001	ppb	179.28	100.	
109 Ag	-0.0001	-0.0001	ppb	789.82	#VALUE!	
111 Cd	-0.1352	-0.1352	ppb	15.41	#VALUE!	
114 Cd	-0.0001	-0.0001	ppb	5292.60	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0224	0.0224	ppb	8.48	1000.	
120 Sn	0.0136	0.0136	ppb	165.22	#VALUE!	
121 Sb	0.0061	0.0061	ppb	51.68	#VALUE!	
123 Sb	0.0095	0.0095	ppb	6.53	1000.	
135 Ba	0.0007	0.0007	ppb	2803.80	2000.	
137 Ba	0.0289	0.0289	ppb	13.90	#VALUE!	
182 W	0.0463	0.0463	ppb	35.57	1000.	
203 Tl	0.0064	0.0064	ppb	27.07	1000.	
205 Tl	0.0021	0.0021	ppb	87.31	#VALUE!	
208 Pb	0.0114	0.0114	ppb	29.81	2000.	
232 Th	0.0051	0.0051	ppb	53.50	1000.	
238 U	0.0065	0.0065	ppb	2.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3298044.00	1.84	3343964.50	98.6	69.5 - 120	
45 Sc	2871301.50	1.45	2753983.00	104.3	69.5 - 120	
72 Ge	520191.66	0.06	501751.53	103.7	69.5 - 120	
159 Tb	3313383.80	0.69	3226356.00	102.7	69.5 - 120	
209 Bi	1868252.30	1.54	1827412.60	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000328

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\028_CCV.D\028_CCV.D#
Date Acquired: Mar 22 2018 06:01 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.86	ppb	1.45	25	103.44	
11 B	26.07	ppb	2.81	25	104.28	
23 Na	4,836.	ppb	2.09	5,000	96.72	
25 Mg	4,873.	ppb	2.57	5,000	97.46	
27 Al	493.4	ppb	1.42	500	98.68	
28 Si	432.4	ppb	9.94	500	86.48	
29 Si	302.6	ppb	4.92	500	60.52	Fail
39 K	4,939.	ppb	1.28	5,000	98.78	
43 Ca	5,032.	ppb	1.67	5,000	100.64	
44 Ca	5,013.	ppb	1.05	5,000	100.26	
51 V	24.81	ppb	0.44	25	99.24	
52 Cr	24.86	ppb	0.35	25	99.44	
53 Cr	25.45	ppb	1.21	25	101.8	
55 Mn	24.98	ppb	0.35	25	99.92	
56 Fe	4,951.	ppb	0.88	5,000	99.02	
57 Fe	5,019.	ppb	0.78	5,000	100.38	
59 Co	25.02	ppb	0.82	25	100.08	
60 Ni	24.92	ppb	1.07	25	99.68	
63 Cu	25.12	ppb	0.79	25	100.48	
65 Cu	25.2	ppb	1.05	25	100.8	
66 Zn	25.09	ppb	1.95	25	100.36	
68 Zn	24.2	ppb	0.80	25	96.8	
75 As	24.82	ppb	0.01	25	99.28	
82 Se	24.82	ppb	1.24	25	99.28	
88 Sr	25.01	ppb	1.85	25	100.04	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.6	ppb	1.07	25	98.4	
107 Ag	24.98	ppb	1.13	25	99.92	
109 Ag	25.18	ppb	0.67	25	100.72	
111 Cd	24.57	ppb	1.00	25	98.28	
114 Cd	25.02	ppb	0.49	25	100.08	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.89	ppb	0.22	25	99.56	
120 Sn	25.26	ppb	0.50	25	101.04	
121 Sb	25.02	ppb	0.33	25	100.08	
123 Sb	25.02	ppb	1.44	25	100.08	
135 Ba	25.14	ppb	0.95	25	100.56	
137 Ba	25.08	ppb	0.55	25	100.32	
182 W	24.62	ppb	1.15	25	98.48	
203 Tl	25.05	ppb	0.86	25	100.2	
205 Tl	24.86	ppb	2.27	25	99.44	
208 Pb	24.74	ppb	1.71	25	98.96	
232 Th	24.5	ppb	2.38	25	98	
238 U	24.26	ppb	1.56	25	97.04	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3606707.50	2.27	3343964.50	107.9	80 - 120.4	
45 Sc	3160003.50	0.79	2753983.00	114.7	80 - 120.4	
72 Ge	563842.88	1.66	501751.53	112.4	80 - 120.4	
159 Tb	3665964.50	0.65	3226356.00	113.6	80 - 120.4	
209 Bi	2039651.00	1.21	1827412.60	111.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000329

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\029_CCB.D\029_CCB.D#
Date Acquired: Mar 22 2018 06:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	439.80	1.00	
11 B	1.366	ppb	8.97	1.00	
23 Na	1.79	ppb	11.18	1.00	
25 Mg	0.5912	ppb	17.98	1.00	
27 Al	0.3196	ppb	11.40	1.00	
28 Si	-4.088	ppb	439.33	1.00	
29 Si	-117.7	ppb	3.97	1.00	
39 K	-10.59	ppb	7.03	1.00	
43 Ca	2.666	ppb	135.18	1.00	
44 Ca	3.051	ppb	34.22	1.00	
51 V	0.004	ppb	1253.00	1.00	
52 Cr	-0.018	ppb	70.99	1.00	
53 Cr	0.2072	ppb	40.72	1.00	
55 Mn	-0.0151	ppb	16.83	1.00	
56 Fe	-3.566	ppb	67.81	1.00	
57 Fe	-2.639	ppb	136.72	1.00	
59 Co	-0.001	ppb	75.48	1.00	
60 Ni	0.0094	ppb	49.80	1.00	
63 Cu	0.0082	ppb	33.97	1.00	
65 Cu	-0.0033	ppb	270.42	1.00	
66 Zn	0.0075	ppb	526.01	1.00	
68 Zn	-0.0705	ppb	170.33	1.00	
75 As	0.0946	ppb	131.92	1.00	
82 Se	0.2637	ppb	56.35	1.00	
88 Sr	0.0017	ppb	192.70	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0351	ppb	11.66	1.00	
107 Ag	-0.0021	ppb	34.68	1.00	
109 Ag	0.0001	ppb	587.88	1.00	
111 Cd	-0.1482	ppb	18.06	1.00	
114 Cd	0.0013	ppb	281.83	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0149	ppb	47.20	1.00	
120 Sn	0.0346	ppb	25.89	1.00	
121 Sb	0.0006	ppb	428.18	1.00	
123 Sb	0.0089	ppb	48.44	1.00	
135 Ba	-0.0037	ppb	165.64	1.00	
137 Ba	0.01	ppb	84.41	1.00	
182 W	0.0307	ppb	25.14	1.00	
203 Tl	0.0028	ppb	116.72	1.00	
205 Tl	0.005	ppb	65.23	1.00	
208 Pb	0.0056	ppb	59.18	1.00	
232 Th	0.0154	ppb	15.68	1.00	
238 U	0.0046	ppb	22.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3394242.30	0.96	3343964.50	101.5	79.5 - 120	
45 Sc	2863347.30	0.77	2753983.00	104.0	79.5 - 120	
72 Ge	524065.75	0.52	501751.53	104.4	79.5 - 120	
159 Tb	3342817.00	0.57	3226356.00	103.6	79.5 - 120	
209 Bi	1891146.00	0.96	1827412.60	103.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000330

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\030SMPL.D\030SMPL.D#
Date Acquired: Mar 22 2018 06:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-001
Misc Info: LC19IMS1
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.85	2.77	ppb	0.97	100.	
11 B	88.	17.6	ppb	4.66	1000.	
23 Na	34,660.	6,932.	ppb	1.72	200000.	
25 Mg	100,950.	20,190.	ppb	1.97	200000.	
27 Al	238,100.	47,620.	ppb	0.75	200000.	
28 Si	1,163.	232.6	ppb	19.33	#VALUE!	
29 Si	388.1	77.62	ppb	30.16	10000.	
39 K	62,400.	12,480.	ppb	1.45	200000.	
43 Ca	219,650.	43,930.	ppb	2.02	#VALUE!	
44 Ca	209,800.	41,960.	ppb	1.16	200000.	
51 V	415.15	83.03	ppb	0.31	1000.	
52 Cr	213.15	42.63	ppb	0.19	2000.	
53 Cr	246.3	49.26	ppb	0.43	#VALUE!	
55 Mn	1,734.5	346.9	ppb	0.61	2000.	
56 Fe	220,700.	44,140.	ppb	0.83	#VALUE!	
57 Fe	213,150.	42,630.	ppb	0.66	100000.	
59 Co	90.9	18.18	ppb	0.17	1000.	
60 Ni	239.55	47.91	ppb	0.76	1000.	
63 Cu	202.7	40.54	ppb	0.58	#VALUE!	
65 Cu	202.85	40.57	ppb	0.80	2000.	
66 Zn	704.	140.8	ppb	0.25	2000.	
68 Zn	797.5	159.5	ppb	0.57	#VALUE!	
75 As	110.95	22.19	ppb	0.99	1000.	
82 Se	5.155	1.031	ppb	7.76	1000.	
88 Sr	1,355.5	271.1	ppb	0.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.793	0.9586	ppb	3.37	1000.	
107 Ag	1.407	0.2814	ppb	2.86	100.	
109 Ag	1.2455	0.2491	ppb	4.11	#VALUE!	
111 Cd	2.583	0.5166	ppb	13.52	#VALUE!	
114 Cd	-0.1078	-0.0216	ppb	90.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.7	11.34	ppb	1.03	1000.	
120 Sn	56.55	11.31	ppb	1.22	#VALUE!	
121 Sb	2.0225	0.4045	ppb	2.79	#VALUE!	
123 Sb	2.133	0.4266	ppb	6.10	1000.	
135 Ba	3,190.	638.	ppb	1.43	2000.	
137 Ba	3,177.	635.4	ppb	0.91	#VALUE!	
182 W	0.75	0.15	ppb	9.94	1000.	
203 Tl	4.739	0.9478	ppb	4.22	1000.	
205 Tl	4.626	0.9252	ppb	2.02	#VALUE!	
208 Pb	187.	37.4	ppb	0.51	2000.	
232 Th	126.25	25.25	ppb	0.75	1000.	
238 U	21.74	4.348	ppb	1.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3859172.80	0.58	3343964.50	115.4	69.5 - 120	
45 Sc	3368690.00	2.03	2753983.00	122.3	69.5 - 120	IS Fai
72 Ge	597093.13	0.47	501751.53	119.0	69.5 - 120	
159 Tb	3756397.00	1.45	3226356.00	116.4	69.5 - 120	
209 Bi	1977862.90	0.59	1827412.60	108.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000331

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\031SMPL.D\031SMPL.D#
Date Acquired: Mar 22 2018 06:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.17	2.834	ppb	0.99	100.	
11 B	110.65	22.13	ppb	3.20	1000.	
23 Na	33,180.	6,636.	ppb	0.40	200000.	
25 Mg	87,950.	17,590.	ppb	1.07	200000.	
27 Al	240,400.	48,080.	ppb	0.32	200000.	
28 Si	2,002.5	400.5	ppb	8.83	#VALUE!	
29 Si	1,305.5	261.1	ppb	2.93	10000.	
39 K	68,200.	13,640.	ppb	0.56	200000.	
43 Ca	172,450.	34,490.	ppb	0.37	#VALUE!	
44 Ca	169,100.	33,820.	ppb	0.22	200000.	
51 V	545.	109.	ppb	2.25	1000.	
52 Cr	231.2	46.24	ppb	0.85	2000.	
53 Cr	272.55	54.51	ppb	0.65	#VALUE!	
55 Mn	1,860.	372.	ppb	0.99	2000.	
56 Fe	254,600.	50,920.	ppb	1.08	#VALUE!	
57 Fe	244,400.	48,880.	ppb	1.92	100000.	
59 Co	110.95	22.19	ppb	1.20	1000.	
60 Ni	284.2	56.84	ppb	0.59	1000.	
63 Cu	219.15	43.83	ppb	0.47	#VALUE!	
65 Cu	220.85	44.17	ppb	1.09	2000.	
66 Zn	746.	149.2	ppb	0.89	2000.	
68 Zn	793.	158.6	ppb	0.54	#VALUE!	
75 As	216.05	43.21	ppb	0.37	1000.	
82 Se	6.26	1.252	ppb	30.87	1000.	
88 Sr	953.5	190.7	ppb	1.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.73	1.946	ppb	0.75	1000.	
107 Ag	1.7915	0.3583	ppb	4.70	100.	
109 Ag	1.467	0.2934	ppb	1.27	#VALUE!	
111 Cd	2.6745	0.5349	ppb	11.70	#VALUE!	
114 Cd	-0.3541	-0.0708	ppb	48.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.65	10.73	ppb	0.91	1000.	
120 Sn	54.05	10.81	ppb	1.02	#VALUE!	
121 Sb	2.954	0.5908	ppb	1.09	#VALUE!	
123 Sb	2.9295	0.5859	ppb	1.85	1000.	
135 Ba	2,134.5	426.9	ppb	0.61	2000.	
137 Ba	2,163.	432.6	ppb	0.85	#VALUE!	
182 W	1.0555	0.2111	ppb	0.63	1000.	
203 Tl	4.4575	0.8915	ppb	5.76	1000.	
205 Tl	4.388	0.8776	ppb	1.10	#VALUE!	
208 Pb	206.5	41.3	ppb	1.24	2000.	
232 Th	124.9	24.98	ppb	1.27	1000.	
238 U	26.77	5.354	ppb	0.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3971664.00	0.41	3343964.50	118.8	69.5 - 120	
45 Sc	3451400.80	0.44	2753983.00	125.3	69.5 - 120	IS Fai
72 Ge	605932.44	0.71	501751.53	120.8	69.5 - 120	IS Fai
159 Tb	3791224.50	0.87	3226356.00	117.5	69.5 - 120	
209 Bi	1983659.80	1.06	1827412.60	108.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000332

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 22 2018 06:18 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.195	2.239	ppb	2.75	100.	
11 B	94.3	18.86	ppb	0.40	1000.	
23 Na	5,685.	1,137.	ppb	0.78	200000.	
25 Mg	81,450.	16,290.	ppb	1.50	200000.	
27 Al	203,300.	40,660.	ppb	0.34	200000.	
28 Si	2,537.	507.4	ppb	12.60	#VALUE!	
29 Si	1,817.5	363.5	ppb	12.54	10000.	
39 K	43,055.	8,611.	ppb	0.76	200000.	
43 Ca	108,450.	21,690.	ppb	2.20	#VALUE!	
44 Ca	104,850.	20,970.	ppb	0.79	200000.	
51 V	412.05	82.41	ppb	1.39	1000.	
52 Cr	232.2	46.44	ppb	0.73	2000.	
53 Cr	272.3	54.46	ppb	0.89	#VALUE!	
55 Mn	4,432.5	886.5	ppb	1.37	2000.	
56 Fe	244,700.	48,940.	ppb	1.27	#VALUE!	
57 Fe	237,050.	47,410.	ppb	1.10	100000.	
59 Co	64.75	12.95	ppb	1.86	1000.	
60 Ni	200.8	40.16	ppb	0.77	1000.	
63 Cu	189.3	37.86	ppb	1.19	#VALUE!	
65 Cu	192.95	38.59	ppb	1.44	2000.	
66 Zn	680.5	136.1	ppb	1.03	2000.	
68 Zn	797.5	159.5	ppb	0.67	#VALUE!	
75 As	78.35	15.67	ppb	1.29	1000.	
82 Se	6.29	1.258	ppb	19.48	1000.	
88 Sr	685.	137.	ppb	0.96	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.111	0.6222	ppb	1.76	1000.	
107 Ag	1.0235	0.2047	ppb	0.78	100.	
109 Ag	0.8305	0.1661	ppb	11.07	#VALUE!	
111 Cd	5.315	1.063	ppb	3.86	#VALUE!	
114 Cd	2.139	0.4278	ppb	4.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.5	10.3	ppb	2.64	1000.	
120 Sn	51.2	10.24	ppb	1.15	#VALUE!	
121 Sb	1.526	0.3052	ppb	5.62	#VALUE!	
123 Sb	1.6875	0.3375	ppb	5.98	1000.	
135 Ba	3,786.	757.2	ppb	1.35	2000.	
137 Ba	3,798.	759.6	ppb	2.15	#VALUE!	
182 W	0.747	0.1494	ppb	7.91	1000.	
203 Tl	3.8945	0.7789	ppb	3.37	1000.	
205 Tl	3.6675	0.7335	ppb	1.96	#VALUE!	
208 Pb	172.05	34.41	ppb	1.53	2000.	
232 Th	111.1	22.22	ppb	0.98	1000.	
238 U	11.905	2.381	ppb	0.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3989060.00	1.31	3343964.50	119.3	69.5 - 120	
45 Sc	3424989.30	0.67	2753983.00	124.4	69.5 - 120	IS Fai
72 Ge	614887.25	0.92	501751.53	122.5	69.5 - 120	IS Fai
159 Tb	3830615.00	1.14	3226356.00	118.7	69.5 - 120	
209 Bi	2017911.90	1.17	1827412.60	110.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000333

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 22 2018 06:22 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.62	2.724	ppb	0.70	100.	
11 B	113.7	22.74	ppb	1.27	1000.	
23 Na	1,954.5	390.9	ppb	1.01	200000.	
25 Mg	89,150.	17,830.	ppb	0.51	200000.	
27 Al	191,550.	38,310.	ppb	0.80	200000.	
28 Si	2,960.	592.	ppb	8.47	#VALUE!	
29 Si	2,173.	434.6	ppb	4.35	10000.	
39 K	45,800.	9,160.	ppb	1.76	200000.	
43 Ca	386,700.	77,340.	ppb	1.09	#VALUE!	
44 Ca	373,050.	74,610.	ppb	0.92	200000.	
51 V	923.	184.6	ppb	1.36	1000.	
52 Cr	215.2	43.04	ppb	0.14	2000.	
53 Cr	246.45	49.29	ppb	0.93	#VALUE!	
55 Mn	7,310.	1,462.	ppb	1.51	2000.	
56 Fe	446,750.	89,350.	ppb	1.15	#VALUE!	
57 Fe	435,900.	87,180.	ppb	1.22	100000.	
59 Co	97.7	19.54	ppb	0.41	1000.	
60 Ni	175.75	35.15	ppb	0.44	1000.	
63 Cu	306.7	61.34	ppb	0.66	#VALUE!	
65 Cu	308.6	61.72	ppb	0.59	2000.	
66 Zn	546.5	109.3	ppb	0.62	2000.	
68 Zn	695.5	139.1	ppb	0.99	#VALUE!	
75 As	569.5	113.9	ppb	0.58	1000.	
82 Se	7.875	1.575	ppb	1.96	1000.	
88 Sr	1,106.	221.2	ppb	2.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.045	4.609	ppb	1.94	1000.	
107 Ag	1.0475	0.2095	ppb	7.45	100.	
109 Ag	0.855	0.171	ppb	5.51	#VALUE!	
111 Cd	7.155	1.431	ppb	6.81	#VALUE!	
114 Cd	2.779	0.5558	ppb	6.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.8	10.36	ppb	1.73	1000.	
120 Sn	52.05	10.41	ppb	1.19	#VALUE!	
121 Sb	4.1355	0.8271	ppb	2.09	#VALUE!	
123 Sb	4.201	0.8402	ppb	4.44	1000.	
135 Ba	4,508.	901.6	ppb	0.76	2000.	
137 Ba	4,485.	897.	ppb	1.06	#VALUE!	
182 W	0.9445	0.1889	ppb	9.50	1000.	
203 Tl	3.8325	0.7665	ppb	4.80	1000.	
205 Tl	3.943	0.7886	ppb	2.59	#VALUE!	
208 Pb	239.35	47.87	ppb	0.51	2000.	
232 Th	94.95	18.99	ppb	0.90	1000.	
238 U	13.46	2.692	ppb	0.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3725826.50	1.10	3343964.50	111.4	69.5 - 120	
45 Sc	3301018.30	0.47	2753983.00	119.9	69.5 - 120	
72 Ge	603980.63	0.94	501751.53	120.4	69.5 - 120	
159 Tb	3709252.00	0.37	3226356.00	115.0	69.5 - 120	
209 Bi	1951581.40	0.84	1827412.60	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000334

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 22 2018 06:26 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-008
Misc Info: LC20IMS1
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	20.375	4.075	ppb	0.34	100.	
11 B	289.4	57.88	ppb	2.35	1000.	
23 Na	17,000.	3,400.	ppb	1.78	200000.	
25 Mg	185,750.	37,150.	ppb	0.62	200000.	
27 Al	435,500.	87,100.	ppb	2.19	200000.	
28 Si	4,219.	843.8	ppb	5.62	#VALUE!	
29 Si	3,725.	745.	ppb	6.71	10000.	
39 K	119,650.	23,930.	ppb	2.14	200000.	
43 Ca	1,007,500.	201,500.	ppb	1.04	#VALUE!	
44 Ca	1,001,500.	200,300.	ppb	1.37	200000.	>LDR
51 V	950.5	190.1	ppb	2.14	1000.	
52 Cr	395.5	79.1	ppb	1.60	2000.	
53 Cr	417.05	83.41	ppb	2.26	#VALUE!	
55 Mn	2,355.5	471.1	ppb	1.61	2000.	
56 Fe	362,950.	72,590.	ppb	1.37	#VALUE!	
57 Fe	354,450.	70,890.	ppb	2.17	100000.	
59 Co	108.55	21.71	ppb	1.44	1000.	
60 Ni	365.	73.	ppb	1.38	1000.	
63 Cu	241.35	48.27	ppb	0.91	#VALUE!	
65 Cu	246.7	49.34	ppb	0.69	2000.	
66 Zn	963.5	192.7	ppb	1.26	2000.	
68 Zn	1,154.5	230.9	ppb	0.69	#VALUE!	
75 As	185.05	37.01	ppb	0.32	1000.	
82 Se	8.405	1.681	ppb	17.66	1000.	
88 Sr	4,022.5	804.5	ppb	3.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.578	0.9156	ppb	2.37	1000.	
107 Ag	2.018	0.4036	ppb	5.30	100.	
109 Ag	1.375	0.275	ppb	4.27	#VALUE!	
111 Cd	7.935	1.587	ppb	5.96	#VALUE!	
114 Cd	-0.7165	-0.1433	ppb	12.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	62.65	12.53	ppb	1.64	1000.	
120 Sn	62.5	12.5	ppb	0.98	#VALUE!	
121 Sb	5.655	1.131	ppb	4.80	#VALUE!	
123 Sb	5.78	1.156	ppb	4.94	1000.	
135 Ba	6,375.	1,275.	ppb	2.30	2000.	
137 Ba	6,310.	1,262.	ppb	0.94	#VALUE!	
182 W	1.453	0.2906	ppb	6.79	1000.	
203 Tl	7.38	1.476	ppb	5.96	1000.	
205 Tl	7.29	1.458	ppb	1.31	#VALUE!	
208 Pb	263.1	52.62	ppb	0.94	2000.	
232 Th	183.55	36.71	ppb	1.04	1000.	
238 U	33.895	6.779	ppb	1.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3816987.50	0.19	3343964.50	114.1	69.5 - 120	
45 Sc	3395493.30	1.73	2753983.00	123.3	69.5 - 120	IS Fai
72 Ge	589976.81	1.45	501751.53	117.6	69.5 - 120	
159 Tb	3781593.80	1.07	3226356.00	117.2	69.5 - 120	
209 Bi	1917585.40	1.04	1827412.60	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000335

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 22 2018 06:30 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-009
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.49	2.498	ppb	2.71	100.	
11 B	141.95	28.39	ppb	4.03	1000.	
23 Na	9,545.	1,909.	ppb	1.87	200000.	
25 Mg	109,250.	21,850.	ppb	1.87	200000.	
27 Al	257,200.	51,440.	ppb	2.09	200000.	
28 Si	4,273.	854.6	ppb	11.52	#VALUE!	
29 Si	3,574.5	714.9	ppb	5.54	10000.	
39 K	55,050.	11,010.	ppb	0.25	200000.	
43 Ca	119,500.	23,900.	ppb	1.14	#VALUE!	
44 Ca	117,500.	23,500.	ppb	0.81	200000.	
51 V	495.4	99.08	ppb	1.35	1000.	
52 Cr	268.25	53.65	ppb	1.02	2000.	
53 Cr	306.7	61.34	ppb	1.47	#VALUE!	
55 Mn	4,385.5	877.1	ppb	1.13	2000.	
56 Fe	222,700.	44,540.	ppb	0.91	#VALUE!	
57 Fe	216,400.	43,280.	ppb	0.57	100000.	
59 Co	162.3	32.46	ppb	0.59	1000.	
60 Ni	227.3	45.46	ppb	0.51	1000.	
63 Cu	193.3	38.66	ppb	0.64	#VALUE!	
65 Cu	196.75	39.35	ppb	1.35	2000.	
66 Zn	720.	144.	ppb	0.76	2000.	
68 Zn	810.5	162.1	ppb	0.52	#VALUE!	
75 As	29.995	5.999	ppb	4.05	1000.	
82 Se	7.285	1.457	ppb	5.68	1000.	
88 Sr	767.5	153.5	ppb	2.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.765	3.353	ppb	1.92	1000.	
107 Ag	1.368	0.2736	ppb	7.61	100.	
109 Ag	1.0385	0.2077	ppb	6.47	#VALUE!	
111 Cd	5.42	1.084	ppb	4.70	#VALUE!	
114 Cd	1.74	0.348	ppb	4.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.55	10.91	ppb	0.77	1000.	
120 Sn	54.95	10.99	ppb	0.11	#VALUE!	
121 Sb	2.6035	0.5207	ppb	5.00	#VALUE!	
123 Sb	2.6545	0.5309	ppb	5.06	1000.	
135 Ba	3,163.5	632.7	ppb	0.42	2000.	
137 Ba	3,178.5	635.7	ppb	1.18	#VALUE!	
182 W	0.9475	0.1895	ppb	13.34	1000.	
203 Tl	4.418	0.8836	ppb	2.19	1000.	
205 Tl	4.5895	0.9179	ppb	1.32	#VALUE!	
208 Pb	174.05	34.81	ppb	1.32	2000.	
232 Th	129.55	25.91	ppb	1.20	1000.	
238 U	14.615	2.923	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3882568.30	6.86	3343964.50	116.1	69.5 - 120	
45 Sc	3387670.30	3.99	2753983.00	123.0	69.5 - 120	IS Fai
72 Ge	598382.19	4.05	501751.53	119.3	69.5 - 120	
159 Tb	3779297.80	2.66	3226356.00	117.1	69.5 - 120	
209 Bi	1977582.00	1.45	1827412.60	108.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000336

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 22 2018 06:34 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-012
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	17.175	3.435	ppb	2.45	100.	
11 B	205.2	41.04	ppb	2.44	1000.	
23 Na	3,011.	602.2	ppb	2.08	200000.	
25 Mg	117,650.	23,530.	ppb	1.10	200000.	
27 Al	342,050.	68,410.	ppb	0.87	200000.	
28 Si	4,633.5	926.7	ppb	4.47	#VALUE!	
29 Si	3,777.	755.4	ppb	4.38	10000.	
39 K	83,150.	16,630.	ppb	0.76	200000.	
43 Ca	314,650.	62,930.	ppb	0.44	#VALUE!	
44 Ca	302,250.	60,450.	ppb	0.21	200000.	
51 V	674.	134.8	ppb	1.17	1000.	
52 Cr	348.85	69.77	ppb	0.88	2000.	
53 Cr	379.4	75.88	ppb	0.47	#VALUE!	
55 Mn	4,904.5	980.9	ppb	0.57	2000.	
56 Fe	326,500.	65,300.	ppb	1.04	#VALUE!	
57 Fe	317,100.	63,420.	ppb	0.53	100000.	
59 Co	135.3	27.06	ppb	0.68	1000.	
60 Ni	394.95	78.99	ppb	0.65	1000.	
63 Cu	233.25	46.65	ppb	0.34	#VALUE!	
65 Cu	236.5	47.3	ppb	0.50	2000.	
66 Zn	937.5	187.5	ppb	0.64	2000.	
68 Zn	1,012.5	202.5	ppb	1.14	#VALUE!	
75 As	61.5	12.3	ppb	3.43	1000.	
82 Se	7.815	1.563	ppb	18.85	1000.	
88 Sr	1,664.5	332.9	ppb	1.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.295	1.459	ppb	7.44	1000.	
107 Ag	1.528	0.3056	ppb	2.38	100.	
109 Ag	1.17	0.234	ppb	7.24	#VALUE!	
111 Cd	4.7525	0.9505	ppb	4.74	#VALUE!	
114 Cd	0.1136	0.0227	ppb	90.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.6	11.32	ppb	0.39	1000.	
120 Sn	56.75	11.35	ppb	1.42	#VALUE!	
121 Sb	3.9025	0.7805	ppb	2.55	#VALUE!	
123 Sb	4.031	0.8062	ppb	0.98	1000.	
135 Ba	3,167.	633.4	ppb	1.55	2000.	
137 Ba	3,142.5	628.5	ppb	0.31	#VALUE!	
182 W	1.004	0.2008	ppb	6.07	1000.	
203 Tl	6.045	1.209	ppb	2.20	1000.	
205 Tl	5.87	1.174	ppb	1.48	#VALUE!	
208 Pb	201.8	40.36	ppb	0.48	2000.	
232 Th	159.	31.8	ppb	0.42	1000.	
238 U	18.965	3.793	ppb	0.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3547974.50	0.47	3343964.50	106.1	69.5 - 120	
45 Sc	3245210.80	1.88	2753983.00	117.8	69.5 - 120	
72 Ge	570665.00	1.20	501751.53	113.7	69.5 - 120	
159 Tb	3657653.80	0.82	3226356.00	113.4	69.5 - 120	
209 Bi	1922978.90	0.39	1827412.60	105.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000337

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 22 2018 06:38 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-013
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.46	2.092	ppb	0.73	100.	
11 B	119.9	23.98	ppb	1.21	1000.	
23 Na	1,875.5	375.1	ppb	1.17	200000.	
25 Mg	89,050.	17,810.	ppb	1.99	200000.	
27 Al	212,050.	42,410.	ppb	1.15	200000.	
28 Si	4,756.5	951.3	ppb	2.25	#VALUE!	
29 Si	3,924.	784.8	ppb	2.56	10000.	
39 K	46,960.	9,392.	ppb	0.81	200000.	
43 Ca	210,850.	42,170.	ppb	1.39	#VALUE!	
44 Ca	202,400.	40,480.	ppb	0.19	200000.	
51 V	403.85	80.77	ppb	1.71	1000.	
52 Cr	216.9	43.38	ppb	0.30	2000.	
53 Cr	248.95	49.79	ppb	0.79	#VALUE!	
55 Mn	1,926.5	385.3	ppb	0.92	2000.	
56 Fe	195,550.	39,110.	ppb	0.66	#VALUE!	
57 Fe	191,000.	38,200.	ppb	0.41	100000.	
59 Co	54.9	10.98	ppb	0.09	1000.	
60 Ni	141.6	28.32	ppb	0.38	1000.	
63 Cu	158.1	31.62	ppb	0.44	#VALUE!	
65 Cu	161.4	32.28	ppb	0.62	2000.	
66 Zn	570.5	114.1	ppb	0.48	2000.	
68 Zn	665.	133.	ppb	1.24	#VALUE!	
75 As	29.885	5.977	ppb	2.92	1000.	
82 Se	5.04	1.008	ppb	29.33	1000.	
88 Sr	733.5	146.7	ppb	0.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.7245	0.5449	ppb	1.04	1000.	
107 Ag	1.14	0.228	ppb	6.79	100.	
109 Ag	0.9225	0.1845	ppb	2.44	#VALUE!	
111 Cd	3.3215	0.6643	ppb	5.33	#VALUE!	
114 Cd	-0.0557	-0.0111	ppb	420.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.6	10.52	ppb	0.87	1000.	
120 Sn	52.6	10.52	ppb	0.96	#VALUE!	
121 Sb	2.0215	0.4043	ppb	3.76	#VALUE!	
123 Sb	1.967	0.3934	ppb	6.38	1000.	
135 Ba	3,193.	638.6	ppb	0.57	2000.	
137 Ba	3,165.5	633.1	ppb	0.81	#VALUE!	
182 W	0.6015	0.1203	ppb	6.58	1000.	
203 Tl	3.487	0.6974	ppb	6.77	1000.	
205 Tl	3.5225	0.7045	ppb	3.44	#VALUE!	
208 Pb	141.4	28.28	ppb	0.59	2000.	
232 Th	101.35	20.27	ppb	1.00	1000.	
238 U	11.41	2.282	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3537165.00	2.14	3343964.50	105.8	69.5 - 120	
45 Sc	3178762.80	0.66	2753983.00	115.4	69.5 - 120	
72 Ge	572652.31	0.88	501751.53	114.1	69.5 - 120	
159 Tb	3707415.80	0.75	3226356.00	114.9	69.5 - 120	
209 Bi	1961801.40	0.43	1827412.60	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000338

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 22 2018 06:42 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0028	0.0028	ppb	34.23	100.	
11 B	1.079	1.079	ppb	9.53	1000.	
23 Na	1.714	1.714	ppb	5.73	200000.	
25 Mg	1.061	1.061	ppb	52.71	200000.	
27 Al	1.876	1.876	ppb	49.05	200000.	
28 Si	65.52	65.52	ppb	35.73	#VALUE!	
29 Si	-83.04	-83.04	ppb	6.80	10000.	
39 K	-8.21	-8.21	ppb	17.88	200000.	
43 Ca	5.515	5.515	ppb	70.88	#VALUE!	
44 Ca	5.066	5.066	ppb	22.86	200000.	
51 V	-0.0025	-0.0025	ppb	1583.00	1000.	
52 Cr	0.0152	0.0152	ppb	59.53	2000.	
53 Cr	0.7248	0.7248	ppb	9.29	#VALUE!	
55 Mn	0.0086	0.0086	ppb	97.30	2000.	
56 Fe	3.824	3.824	ppb	35.98	#VALUE!	
57 Fe	1.858	1.858	ppb	53.41	100000.	
59 Co	-0.0008	-0.0008	ppb	128.97	1000.	
60 Ni	0.0006	0.0006	ppb	1236.90	1000.	
63 Cu	0.02	0.02	ppb	48.97	#VALUE!	
65 Cu	0.0059	0.0059	ppb	195.80	2000.	
66 Zn	0.0036	0.0036	ppb	1559.80	2000.	
68 Zn	-0.0178	-0.0178	ppb	543.61	#VALUE!	
75 As	-0.0647	-0.0647	ppb	120.98	1000.	
82 Se	0.1127	0.1127	ppb	309.67	1000.	
88 Sr	0.0078	0.0078	ppb	74.02	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0072	0.0072	ppb	49.82	1000.	
107 Ag	-0.0035	-0.0035	ppb	85.15	100.	
109 Ag	-0.0017	-0.0017	ppb	83.48	#VALUE!	
111 Cd	-0.1628	-0.1628	ppb	37.45	#VALUE!	
114 Cd	0.002	0.002	ppb	127.55	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0093	0.0093	ppb	113.12	1000.	
120 Sn	-0.0069	-0.0069	ppb	126.21	#VALUE!	
121 Sb	-0.0008	-0.0008	ppb	150.56	#VALUE!	
123 Sb	0.0012	0.0012	ppb	411.24	1000.	
135 Ba	0.0306	0.0306	ppb	30.15	2000.	
137 Ba	0.0303	0.0303	ppb	62.78	#VALUE!	
182 W	0.0005	0.0005	ppb	353.73	1000.	
203 Tl	0.0012	0.0012	ppb	504.15	1000.	
205 Tl	-0.0013	-0.0013	ppb	159.63	#VALUE!	
208 Pb	0.0012	0.0012	ppb	85.22	2000.	
232 Th	0.0022	0.0022	ppb	63.56	1000.	
238 U	0.0007	0.0007	ppb	84.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3161211.80	0.76	3343964.50	94.5	69.5 - 120	
45 Sc	2790289.00	0.70	2753983.00	101.3	69.5 - 120	
72 Ge	506455.56	0.30	501751.53	100.9	69.5 - 120	
159 Tb	3275953.30	0.81	3226356.00	101.5	69.5 - 120	
209 Bi	1833352.90	1.06	1827412.60	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000339

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 22 2018 06:46 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0013	-0.0013	ppb	260.81	100.	
11 B	0.7205	0.7205	ppb	10.05	1000.	
23 Na	0.3386	0.3386	ppb	84.85	200000.	
25 Mg	0.627	0.627	ppb	20.91	200000.	
27 Al	1.289	1.289	ppb	5.68	200000.	
28 Si	86.52	86.52	ppb	37.24	#VALUE!	
29 Si	-59.63	-59.63	ppb	77.73	10000.	
39 K	-7.172	-7.172	ppb	13.42	200000.	
43 Ca	4.239	4.239	ppb	134.21	#VALUE!	
44 Ca	6.367	6.367	ppb	18.44	200000.	
51 V	0.0464	0.0464	ppb	101.16	1000.	
52 Cr	0.0207	0.0207	ppb	174.19	2000.	
53 Cr	0.7249	0.7249	ppb	16.47	#VALUE!	
55 Mn	0.0148	0.0148	ppb	28.13	2000.	
56 Fe	4.616	4.616	ppb	49.81	#VALUE!	
57 Fe	0.2972	0.2972	ppb	1159.20	100000.	
59 Co	-0.0019	-0.0019	ppb	16.74	1000.	
60 Ni	0.0041	0.0041	ppb	109.35	1000.	
63 Cu	0.0303	0.0303	ppb	4.90	#VALUE!	
65 Cu	0.0189	0.0189	ppb	74.17	2000.	
66 Zn	0.1013	0.1013	ppb	52.84	2000.	
68 Zn	-0.0422	-0.0422	ppb	266.37	#VALUE!	
75 As	-0.0507	-0.0507	ppb	305.37	1000.	
82 Se	0.1939	0.1939	ppb	63.49	1000.	
88 Sr	0.0073	0.0073	ppb	84.58	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0061	0.0061	ppb	24.17	1000.	
107 Ag	-0.0013	-0.0013	ppb	212.62	100.	
109 Ag	0.0002	0.0002	ppb	613.70	#VALUE!	
111 Cd	-0.1903	-0.1903	ppb	9.72	#VALUE!	
114 Cd	0.002	0.002	ppb	199.12	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0056	0.0056	ppb	86.80	1000.	
120 Sn	-0.0047	-0.0047	ppb	191.63	#VALUE!	
121 Sb	-0.0033	-0.0033	ppb	183.90	#VALUE!	
123 Sb	0.0017	0.0017	ppb	355.74	1000.	
135 Ba	0.0267	0.0267	ppb	109.27	2000.	
137 Ba	0.0287	0.0287	ppb	35.11	#VALUE!	
182 W	0.0002	0.0002	ppb	2800.70	1000.	
203 Tl	0.0004	0.0004	ppb	367.83	1000.	
205 Tl	-0.0009	-0.0009	ppb	159.98	#VALUE!	
208 Pb	0.	0.	ppb	18805.00	2000.	
232 Th	-0.0006	-0.0006	ppb	276.26	1000.	
238 U	0.0008	0.0008	ppb	107.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3276919.30	0.91	3343964.50	98.0	69.5 - 120	
45 Sc	2802243.50	0.87	2753983.00	101.8	69.5 - 120	
72 Ge	509843.97	0.92	501751.53	101.6	69.5 - 120	
159 Tb	3261101.80	0.65	3226356.00	101.1	69.5 - 120	
209 Bi	1827878.50	0.32	1827412.60	100.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000340

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\040_CCV.D\040_CCV.D#
Date Acquired: Mar 22 2018 06:50 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.79	ppb	1.15	25	99.16	
11 B	25.07	ppb	3.59	25	100.28	
23 Na	4,751.	ppb	1.37	5,000	95.02	
25 Mg	4,847.	ppb	1.58	5,000	96.94	
27 Al	495.8	ppb	2.20	500	99.16	
28 Si	564.3	ppb	4.91	500	112.86	
29 Si	413.4	ppb	8.48	500	82.68	Fail
39 K	5,003.	ppb	1.45	5,000	100.06	
43 Ca	4,935.	ppb	1.23	5,000	98.7	
44 Ca	5,038.	ppb	0.22	5,000	100.76	
51 V	25.18	ppb	0.72	25	100.72	
52 Cr	25.06	ppb	0.29	25	100.24	
53 Cr	24.73	ppb	1.56	25	98.92	
55 Mn	25.13	ppb	0.43	25	100.52	
56 Fe	5,005.	ppb	1.47	5,000	100.1	
57 Fe	5,076.	ppb	1.10	5,000	101.52	
59 Co	24.97	ppb	1.81	25	99.88	
60 Ni	25.22	ppb	1.93	25	100.88	
63 Cu	25.41	ppb	0.75	25	101.64	
65 Cu	25.31	ppb	0.52	25	101.24	
66 Zn	25.33	ppb	1.07	25	101.32	
68 Zn	24.54	ppb	2.14	25	98.16	
75 As	25.05	ppb	0.81	25	100.2	
82 Se	25.25	ppb	0.54	25	101	
88 Sr	25.82	ppb	2.06	25	103.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.46	ppb	1.30	25	101.84	
107 Ag	25.54	ppb	1.34	25	102.16	
109 Ag	25.63	ppb	0.94	25	102.52	
111 Cd	25.13	ppb	1.79	25	100.52	
114 Cd	25.49	ppb	0.82	25	101.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.03	ppb	1.59	25	100.12	
120 Sn	25.13	ppb	2.42	25	100.52	
121 Sb	25.04	ppb	2.28	25	100.16	
123 Sb	25.05	ppb	0.69	25	100.2	
135 Ba	25.2	ppb	0.66	25	100.8	
137 Ba	25.32	ppb	2.33	25	101.28	
182 W	24.42	ppb	2.37	25	97.68	
203 Tl	24.77	ppb	1.07	25	99.08	
205 Tl	24.83	ppb	0.91	25	99.32	
208 Pb	24.87	ppb	0.94	25	99.48	
232 Th	24.73	ppb	0.60	25	98.92	
238 U	24.92	ppb	0.90	25	99.68	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3500927.50	1.07	3343964.50	104.7	80 - 120.4	
45 Sc	3007119.30	1.42	2753983.00	109.2	80 - 120.4	
72 Ge	540802.25	1.28	501751.53	107.8	80 - 120.4	
159 Tb	3546701.30	1.13	3226356.00	109.9	80 - 120.4	
209 Bi	1966289.80	0.48	1827412.60	107.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000341

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\041_CCB.D\041_CCB.D#
Date Acquired: Mar 22 2018 06:54 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0017	ppb	129.45	1.00	
11 B	0.7652	ppb	9.15	1.00	
23 Na	-0.2649	ppb	16.44	1.00	
25 Mg	0.5183	ppb	5.75	1.00	
27 Al	0.5368	ppb	8.38	1.00	
28 Si	82.99	ppb	36.81	1.00	
29 Si	-55.22	ppb	107.19	1.00	
39 K	-7.632	ppb	82.69	1.00	
43 Ca	3.188	ppb	75.19	1.00	
44 Ca	2.438	ppb	55.87	1.00	
51 V	0.0417	ppb	122.29	1.00	
52 Cr	-0.0206	ppb	145.41	1.00	
53 Cr	0.3732	ppb	38.00	1.00	
55 Mn	0.0045	ppb	241.44	1.00	
56 Fe	2.506	ppb	260.85	1.00	
57 Fe	-1.173	ppb	71.37	1.00	
59 Co	-0.0009	ppb	339.68	1.00	
60 Ni	0.0085	ppb	218.35	1.00	
63 Cu	-0.0029	ppb	281.44	1.00	
65 Cu	-0.0086	ppb	49.64	1.00	
66 Zn	0.0525	ppb	49.69	1.00	
68 Zn	0.0844	ppb	20.49	1.00	
75 As	-0.0903	ppb	247.48	1.00	
82 Se	0.0228	ppb	611.23	1.00	
88 Sr	-0.0002	ppb	2513.40	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0143	ppb	33.25	1.00	
107 Ag	-0.0022	ppb	29.58	1.00	
109 Ag	0.0023	ppb	56.12	1.00	
111 Cd	-0.1925	ppb	18.17	1.00	
114 Cd	-0.0004	ppb	1061.90	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0075	ppb	331.12	1.00	
120 Sn	0.0195	ppb	70.69	1.00	
121 Sb	0.0015	ppb	225.95	1.00	
123 Sb	0.0033	ppb	165.62	1.00	
135 Ba	0.0021	ppb	845.00	1.00	
137 Ba	0.0181	ppb	72.53	1.00	
182 W	0.0154	ppb	42.62	1.00	
203 Tl	0.0007	ppb	683.19	1.00	
205 Tl	-0.0005	ppb	649.76	1.00	
208 Pb	0.0028	ppb	159.44	1.00	
232 Th	0.0103	ppb	37.87	1.00	
238 U	0.0021	ppb	56.76	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3304855.50	5.17	3343964.50	98.8	79.5 - 120	
45 Sc	2813969.80	4.22	2753983.00	102.2	79.5 - 120	
72 Ge	511777.63	3.82	501751.53	102.0	79.5 - 120	
159 Tb	3280307.00	3.12	3226356.00	101.7	79.5 - 120	
209 Bi	1850621.40	2.87	1827412.60	101.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000342

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 03/26/2018

FILE NAME: JLC26B **METHOD: ICP-MS**

- ☑ 200.8
- ☑ 6020
- ☐ DOD

REVIEWED
JS 3.28.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by MD (initals) on 3/26/18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17623	03/21/2018	03/21/2019	0 ug/L
Standard 1	MW17625	03/21/2018	04/26/2018	Varies by Element
ICV	MW17628	03/21/2018	06/21/2018	Varies by Element
PQL	MW17629	03/21/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17634	03/26/2018	05/14/2018	Varies by Element
ICSA	MW17630	03/21/2018	03/27/2018	Varies by Element
ICSAB	MW17631	03/21/2018	03/27/2018	Varies by Element
CCV	MW17626	03/21/2018	04/26/2018	Varies by Element
Internal Standard	MW17633	03/26/2018	06/26/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Used Ge for Int. Std. due to instability of Y
- CCB analyzed @ 170a failed for Fe, accepted bracketed results that were 10x the blank concentration

JS 3.28.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

20x diln.: 0.5mL of sample (pipet M18) + 9.5mL of MW17623 (pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17623 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17623(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL ofMW17623(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC26B	3/26/2018	4:14:00 13:56	MD
200.8 TUNE	1	JLC26B	3/26/2018	4:14:00 13:59	MD
Cal Blank	1	JLC26B	3/26/2018	4:14:00 16:14	MD
Cal Std 6	1	JLC26B	3/26/2018	4:18:00 16:18	MD
ICV	1	JLC26B	3/26/2018	4:22:00 16:22	MD
ICB	1	JLC26B	3/26/2018	4:26:00 16:26	MD
PQL	1	JLC26B	3/26/2018	4:29:00 16:29	MD
RINSE	1	JLC26B	3/26/2018	4:33:00 16:33	MD
ICSA	1	JLC26B	3/26/2018	4:37:00 16:37	MD
ICSAB	1	JLC26B	3/26/2018	4:41:00 16:41	MD
RINSE	1	JLC26B	3/26/2018	4:46:00 16:46	MD
LRS1	1	JLC26B	3/26/2018	4:49:00 16:49	MD
LRS2	1	JLC26B	3/26/2018	4:53:00 16:53	MD
RINSE	1	JLC26B	3/26/2018	4:57:00 16:57	MD
RINSE	1	JLC26B	3/26/2018	5:01:00 17:01	MD
CCV	1	JLC26B	3/26/2018	5:05:00 17:05	MD
CCB	1	JLC26B	3/26/2018	5:09:00 17:09	MD
SL2287-001	1	JLC26B	3/26/2018	5:13:00 17:13	MD
SL2394-001	1	JLC26B	3/26/2018	5:17:00 17:17	MD
SL2395-001	1	JLC26B	3/26/2018	5:21:00 17:21	MD
SL2396-001	1	JLC26B	3/26/2018	5:25:00 17:25	MD
SL2412-001	1	JLC26B	3/26/2018	5:29:00 17:29	MD
SL2443-001	1	JLC26B	3/26/2018	5:33:00 17:33	MD
SL2465-001	1	JLC26B	3/26/2018	5:37:00 17:37	MD
SL2466-001	1	JLC26B	3/26/2018	5:41:00 17:41	MD
SL2079-002	5	JLC26B	3/26/2018	5:45:00 17:45	MD
SL2079-002	10	JLC26B	3/26/2018	5:49:00 17:49	MD
CCV	1	JLC26B	3/26/2018	5:53:00 17:53	MD
CCB	1	JLC26B	3/26/2018	5:57:00 17:57	MD
SL2079-002	20	JLC26B	3/26/2018	6:02:00 18:02	MD
SL2133-001	5	JLC26B	3/26/2018	6:06:00 18:06	MD
SL2133-001	10	JLC26B	3/26/2018	6:10:00 18:10	MD
SL2133-001	20	JLC26B	3/26/2018	6:14:00 18:14	MD
RINSE	1	JLC26B	3/26/2018	6:18:00 18:18	MD
PBWLC23IMW1	1	JLC26B	3/26/2018	6:22:00 18:22	MD
LCSWLC23IMW1	5	JLC26B	3/26/2018	6:26:00 18:26	MD
SL2210-1	1	JLC26B	3/26/2018	6:30:00 18:30	MD
SL2290-001	1	JLC26B	3/26/2018	6:34:00 18:34	MD
SL2308-001	1	JLC26B	3/26/2018	6:38:00 18:38	MD
CCV	1	JLC26B	3/26/2018	6:42:00 18:42	MD
CCB	1	JLC26B	3/26/2018	6:46:00 18:46	MD
SL2347-001	5	JLC26B	3/26/2018	6:50:00 18:50	MD
SL2348-001	1	JLC26B	3/26/2018	6:54:00 18:54	MD
RINSE	5	JLC26B	3/26/2018	6:58:00 18:58	MD

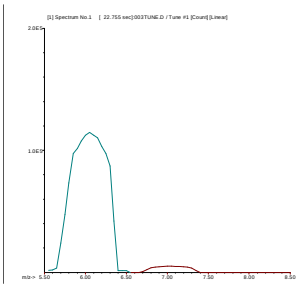
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
PBWLC23IMW2	5	JLC26B	3/26/2018	7:02:00 19:02	MD
LCSWLC23IMW2	5	JLC26B	3/26/2018	7:07:00 19:07	MD
SL2329-016	5	JLC26B	3/26/2018	7:11:00 19:11	MD
RINSE	1	JLC26B	3/26/2018	7:15:00 19:15	MD
PBWLC26IMW1	1	JLC26B	3/26/2018	7:19:00 19:19	MD
LCSWLC26IMW1	5	JLC26B	3/26/2018	7:23:00 19:23	MD
SL2416-001	1	JLC26B	3/26/2018	7:27:00 19:27	MD
CCV	1	JLC26B	3/26/2018	7:31:00 19:31	MD
CCB	1	JLC26B	3/26/2018	7:35:00 19:35	MD
SL2417-001	1	JLC26B	3/26/2018	7:40:00 19:40	MD
SL2438-001	1	JLC26B	3/26/2018	7:44:00 19:44	MD
SL2438-002	1	JLC26B	3/26/2018	7:48:00 19:48	MD
SL2446-001	1	JLC26B	3/26/2018	7:52:00 19:52	MD
SL2447-001	1	JLC26B	3/26/2018	7:56:00 19:56	MD
SL2449-001	1	JLC26B	3/26/2018	8:01:00 20:01	MD
SL2454-001	1	JLC26B	3/26/2018	8:05:00 20:05	MD
SL2464-001	1	JLC26B	3/26/2018	8:09:00 20:09	MD
SL2210-001	1	JLC26B	3/26/2018	8:13:00 20:13	MD
CCV	1	JLC26B	3/26/2018	8:17:00 20:17	MD
CCB	1	JLC26B	3/26/2018	8:21:00 20:21	MD
PQL	1	JLC26B	3/26/2018	8:26:00 20:26	MD
CCV	1	JLC26B	3/26/2018	8:30:00 20:30	MD
CCB	1	JLC26B	3/26/2018	8:34:00 20:34	MD

6020 QC Tune Report

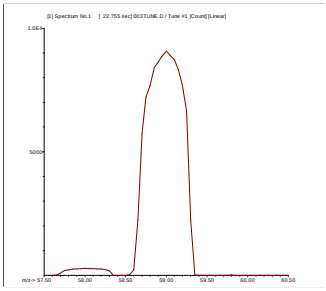
Data File: C:\ICPCHEM\1\DATA\JLC26A.B\003TUNE.D
Date Acquired: Mar 26 2018 01:56 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

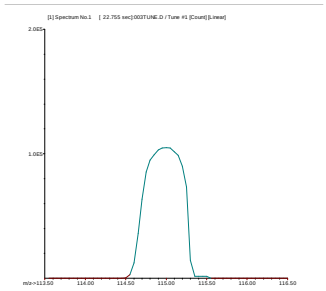
Element	Actual	Required	Flag
7 Li	1.71	5.00	
59 Co	1.52	5.00	
115 In	0.81	5.00	
205 Tl	1.99	5.00	



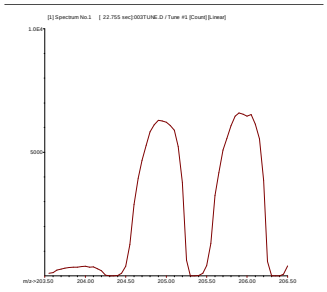
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



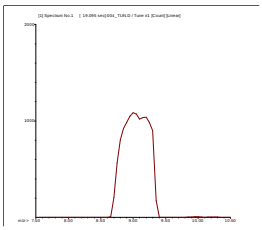
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

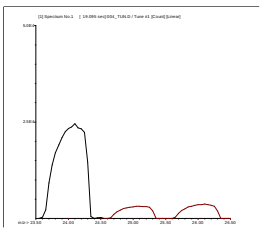
Data File: C:\ICPCHEM\1\DATA\JLC26A.B\004_TUN.D
Date Acquired: Mar 26 2018 01:59 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

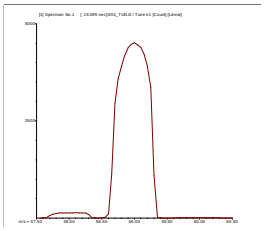
Element	Actual	Required	Flag
9 Be	2.98	5.00	
24 Mg	3.08	5.00	
59 Co	1.18	5.00	
115 In	0.95	5.00	
208 Pb	3.81	5.00	



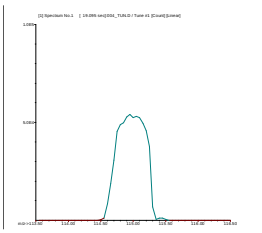
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



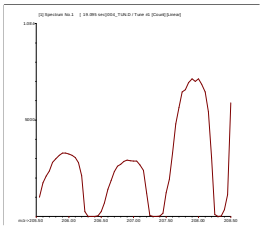
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000347

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.I
Date Acquired: Mar 26 2018 04:14 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 26 2018 04:16 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2473849.00	A	8959.00	0.36
9	Be	12.22	P	3.33	27.27
11	B	274.46	P	22.20	8.09
23	Na	51235.59	P	2246.00	4.38
25	Mg	471.15	P	85.99	18.25
27	Al	4235.25	P	416.60	9.84
28	Si	7539261.00	A	161400.00	2.14
29	Si	455305.59	P	3101.00	0.68
39	K	953015.00	A	12640.00	1.33
43	Ca	259.29	P	12.83	4.95
44	Ca	11045.52	P	105.90	0.96
45	Sc	2284758.00	A	15920.00	0.70
51	V	1403.03	P	453.20	32.30
52	Cr	5407.80	P	53.65	0.99
53	Cr	3722.81	P	119.80	3.22
55	Mn	1337.88	P	30.98	2.32
56	Fe	1274380.00	A	22310.00	1.75
57	Fe	12153.97	P	39.83	0.33
59	Co	100.01	P	29.06	29.06
60	Ni	70.04	P	13.48	19.25
63	Cu	182.23	P	42.21	23.16
65	Cu	92.22	P	5.09	5.52
66	Zn	627.81	P	57.39	9.14
68	Zn	2689.23	P	122.20	4.54
72	Ge	440097.91	P	5379.00	1.22
75	As	-164.01	P	109.60	66.83
82	Se	-18.04	P	15.11	83.77
88	Sr	85.20	P	12.83	15.06
89	Y	2975680.00	A	20190.00	0.68
98	Mo	63.01	P	3.35	5.31
107	Ag	30.00	P	5.77	19.25
109	Ag	18.89	P	12.62	66.81
111	Cd	677.96	P	48.55	7.16
114	Cd	-11.76	P	6.42	54.58
115	In	2691134.00	A	6773.00	0.25
118	Sn	341.13	P	13.88	4.07
120	Sn	584.48	P	65.01	11.12
121	Sb	30.00	P	11.55	38.50
123	Sb	27.78	P	10.71	38.55
135	Ba	20.00	P	12.02	60.10
137	Ba	28.89	P	12.62	43.68
159	Tb	3175870.00	A	30520.00	0.96
182	W	47.78	P	13.47	28.19
203	Tl	53.34	P	3.33	6.25
205	Tl	111.12	P	20.37	18.33
208	Pb	255.57	P	9.62	3.77
209	Bi	1777464.00	A	16340.00	0.92
232	Th	21.11	P	11.71	55.47
238	U	14.44	P	8.39	58.08

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\016CALI.D\016CALI.D#
Date Acquired: Mar 26 2018 04:18 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 26 2018 04:17 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2681788.00	A	905.40	0.03
9 Be	87096.46	P	360.90	0.41
11 B	47879.23	P	1871.00	3.91
23 Na	58302288.00	A	312200.00	0.54
25 Mg	5022105.00	A	66580.00	1.33
27 Al	4906729.00	A	37400.00	0.76
28 Si	10234750.00	A	212000.00	2.07
29 Si	599871.63	P	2526.00	0.42
39 K	66228248.00	A	388500.00	0.59
43 Ca	120387.50	P	1336.00	1.11
44 Ca	1972732.00	A	12090.00	0.61
45 Sc	2498219.00	A	42510.00	1.70
51 V	426029.50	P	6586.00	1.55
52 Cr	366109.59	P	3219.00	0.88
53 Cr	46366.25	P	616.30	1.33
55 Mn	458450.31	P	834.10	0.18
56 Fe	74326488.00	A	1260000.00	1.70
57 Fe	1813827.00	A	36220.00	2.00
59 Co	389735.50	P	4343.00	1.11
60 Ni	86330.28	P	1030.00	1.19
63 Cu	202205.91	P	1238.00	0.61
65 Cu	93872.69	P	1049.00	1.12
66 Zn	47959.70	P	389.70	0.81
68 Zn	36543.28	P	250.80	0.69
72 Ge	470476.50	P	4984.00	1.06
75 As	46968.64	P	411.20	0.88
82 Se	3194.78	P	33.48	1.05
88 Sr	476432.19	P	3865.00	0.81
89 Y	3267937.00	A	25690.00	0.79
98 Mo	153117.80	P	1136.00	0.74
107 Ag	230630.80	P	1793.00	0.78
109 Ag	220132.59	P	1855.00	0.84
111 Cd	45095.26	P	532.40	1.18
114 Cd	97116.70	P	608.00	0.63
115 In	2931492.00	A	32490.00	1.11
118 Sn	132452.70	P	1300.00	0.98
120 Sn	181898.09	P	1175.00	0.65
121 Sb	169528.30	P	1281.00	0.76
123 Sb	128567.80	P	1153.00	0.90
135 Ba	38160.71	P	365.30	0.96
137 Ba	65532.24	P	232.00	0.35
159 Tb	3502280.00	A	55670.00	1.59
182 W	139840.41	P	655.60	0.47
203 Tl	124072.30	P	941.20	0.76
205 Tl	297058.00	P	1317.00	0.44
208 Pb	407122.91	P	2023.00	0.50
209 Bi	1897230.00	A	31040.00	1.64
232 Th	455860.50	P	416.90	0.09
238 U	422354.31	P	4275.00	1.01

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2681787.80	0.03	2473849.30	108.4	79.5 - 120.4	
45 Sc	2498219.30	1.70	2284758.30	109.3	79.5 - 120.4	
72 Ge	470476.47	1.06	440097.94	106.9	79.5 - 120.4	
159 Tb	3502279.50	1.59	3175870.30	110.3	79.5 - 120.4	
209 Bi	1897230.10	1.64	1777464.10	106.7	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000349

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\017_ICV.D\017_ICV.D#
Date Acquired: Mar 26 2018 04:22 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.12	ppb	1.59	20	95.6	
11 B	20.84	ppb	4.10	20	104.2	
23 Na	3,930.	ppb	1.08	4,000	98.25	
25 Mg	4,012.	ppb	0.60	4,000	100.3	
27 Al	403.	ppb	1.31	400	100.75	
28 Si	166.8	ppb	103.30	400	41.7	
29 Si	155.1	ppb	77.37	400	38.775	Fail
39 K	3,930.	ppb	1.19	4,000	98.25	
43 Ca	3,924.	ppb	1.56	4,000	98.1	
44 Ca	4,003.	ppb	1.63	4,000	100.075	
51 V	19.4	ppb	0.66	20	97	
52 Cr	19.4	ppb	1.66	20	97	
53 Cr	18.79	ppb	2.39	20	93.95	
55 Mn	19.46	ppb	1.14	20	97.3	
56 Fe	3,925.	ppb	1.68	4,000	98.125	
57 Fe	3,993.	ppb	1.31	4,000	99.825	
59 Co	19.52	ppb	1.16	20	97.6	
60 Ni	19.67	ppb	1.31	20	98.35	
63 Cu	19.42	ppb	1.06	20	97.1	
65 Cu	19.59	ppb	0.57	20	97.95	
66 Zn	20.16	ppb	1.13	20	100.8	
68 Zn	19.58	ppb	1.34	20	97.9	
75 As	19.53	ppb	2.40	20	97.65	
82 Se	19.96	ppb	2.73	20	99.8	
88 Sr	19.15	ppb	2.21	20	95.75	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.12	ppb	1.50	40	95.3	
107 Ag	19.61	ppb	0.53	20	98.05	
109 Ag	19.47	ppb	0.19	20	97.35	
111 Cd	19.8	ppb	0.78	20	99	
114 Cd	19.96	ppb	0.86	20	99.8	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.97	ppb	1.31	20	99.85	
120 Sn	19.63	ppb	0.96	20	98.15	
121 Sb	19.73	ppb	1.03	20	98.65	
123 Sb	19.47	ppb	0.77	20	97.35	
135 Ba	19.67	ppb	3.10	20	98.35	
137 Ba	19.75	ppb	1.83	20	98.75	
182 W	19.76	ppb	1.02	20	98.8	
203 Tl	20.08	ppb	1.08	20	100.4	
205 Tl	19.96	ppb	0.87	20	99.8	
208 Pb	19.59	ppb	0.85	20	97.95	
232 Th	19.49	ppb	0.97	20	97.45	
238 U	19.45	ppb	1.59	20	97.25	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2713370.50	1.36	2473849.30	109.7	80 - 120.4	
45 Sc	2469661.00	1.36	2284758.30	108.1	80 - 120.4	
72 Ge	469300.03	1.68	440097.94	106.6	80 - 120.4	
159 Tb	3439755.80	1.60	3175870.30	108.3	80 - 120.4	
209 Bi	1908344.10	0.77	1777464.10	107.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000350

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\018_ICB.D\018_ICB.D#
Date Acquired: Mar 26 2018 04:26 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	14.73	1.00	
11 B	0.7993	ppb	14.24	1.00	
23 Na	-0.3832	ppb	103.68	1.00	
25 Mg	-0.4978	ppb	13.63	1.00	
27 Al	-0.6092	ppb	12.45	1.00	
28 Si	-55.5	ppb	126.22	1.00	
29 Si	-5.027	ppb	810.22	1.00	
39 K	-0.1783	ppb	660.12	1.00	
43 Ca	2.034	ppb	222.07	1.00	
44 Ca	-1.685	ppb	198.99	1.00	
51 V	-0.055	ppb	119.00	1.00	
52 Cr	-0.0058	ppb	503.13	1.00	
53 Cr	-0.2759	ppb	74.56	1.00	
55 Mn	-0.0091	ppb	123.50	1.00	
56 Fe	-5.857	ppb	40.98	1.00	
57 Fe	0.8475	ppb	269.14	1.00	
59 Co	0.0035	ppb	50.10	1.00	
60 Ni	-0.0038	ppb	324.37	1.00	
63 Cu	0.01	ppb	43.13	1.00	
65 Cu	-0.0061	ppb	78.44	1.00	
66 Zn	0.0404	ppb	195.19	1.00	
68 Zn	-0.2269	ppb	111.02	1.00	
75 As	-0.0421	ppb	51.96	1.00	
82 Se	0.0742	ppb	404.29	1.00	
88 Sr	0.0034	ppb	108.51	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0123	ppb	48.65	1.00	
107 Ag	-0.0005	ppb	1059.00	1.00	
109 Ag	-0.0008	ppb	311.97	1.00	
111 Cd	-0.0161	ppb	65.26	1.00	
114 Cd	0.0056	ppb	41.41	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0364	ppb	50.49	1.00	
120 Sn	0.0031	ppb	246.46	1.00	
121 Sb	0.0033	ppb	95.90	1.00	
123 Sb	-0.0009	ppb	496.28	1.00	
135 Ba	-0.0144	ppb	89.19	1.00	
137 Ba	-0.0027	ppb	67.06	1.00	
182 W	0.0213	ppb	12.18	1.00	
203 Tl	0.003	ppb	209.22	1.00	
205 Tl	0.0036	ppb	61.33	1.00	
208 Pb	-0.0041	ppb	56.27	1.00	
232 Th	0.0069	ppb	19.69	1.00	
238 U	0.0028	ppb	30.48	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2468161.00	2.33	2473849.30	99.8	79.5 - 120	
45 Sc	2280775.30	1.48	2284758.30	99.8	79.5 - 120	
72 Ge	437485.88	1.00	440097.94	99.4	79.5 - 120	
159 Tb	3153444.80	0.78	3175870.30	99.3	79.5 - 120	
209 Bi	1766749.10	0.55	1777464.10	99.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000351

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\019_PQL.D\019_PQL.D#
Date Acquired: Mar 26 2018 04:29 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1959	ppb	9.60	0.20	97.95	
11 B	4.723	ppb	2.61	4.00	118.075	
23 Na	210.1	ppb	1.58	200.00	105.05	
25 Mg	20.22	ppb	2.14	20.00	101.1	
27 Al	19.04	ppb	0.73	20.00	95.2	
28 Si	199.1	ppb	87.85	100.00	199.1	
29 Si	172.1	ppb	61.77	100.00	172.1	Fail
39 K	201.3	ppb	0.92	200.00	100.65	
43 Ca	18.38	ppb	32.99	20.00	91.9	
44 Ca	19.97	ppb	12.54	20.00	99.85	
51 V	0.9747	ppb	1.82	1.00	97.47	
52 Cr	1.019	ppb	4.12	1.00	101.9	
53 Cr	0.6684	ppb	10.00	---	#VALUE!	
55 Mn	0.3965	ppb	0.99	0.40	99.125	
56 Fe	16.76	ppb	22.28	20.00	83.8	
57 Fe	17.4	ppb	8.30	20.00	87	
59 Co	0.2156	ppb	3.90	0.20	107.8	
60 Ni	0.3874	ppb	11.92	0.40	96.85	
63 Cu	0.615	ppb	3.08	0.60	102.5	
65 Cu	0.6415	ppb	6.39	0.60	106.917	
66 Zn	2.06	ppb	4.17	2.00	103	
68 Zn	1.805	ppb	3.99	2.00	90.25	
75 As	1.04	ppb	11.72	1.00	104	
82 Se	1.19	ppb	2.06	1.00	119	
88 Sr	0.9476	ppb	3.76	1.00	94.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9518	ppb	3.69	1.00	95.18	
107 Ag	0.1958	ppb	9.57	0.20	97.9	
109 Ag	0.1999	ppb	1.99	0.20	99.95	
111 Cd	0.1721	ppb	23.14	0.20	86.05	
114 Cd	0.1857	ppb	2.09	0.20	92.85	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.075	ppb	4.80	1.00	107.5	
120 Sn	1.044	ppb	0.89	1.00	104.4	
121 Sb	0.1983	ppb	9.35	0.20	99.15	
123 Sb	0.196	ppb	5.71	0.20	98	
135 Ba	0.3942	ppb	8.21	0.40	98.55	
137 Ba	0.4109	ppb	8.77	0.40	102.725	
182 W	1.022	ppb	4.82	1.00	102.2	
203 Tl	0.1736	ppb	8.38	0.20	86.8	
205 Tl	0.1854	ppb	2.52	0.20	92.7	
208 Pb	0.1996	ppb	10.00	0.20	99.8	
232 Th	0.2021	ppb	2.98	0.20	101.05	
238 U	0.2146	ppb	2.25	0.20	107.3	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2496821.30	0.70	2473849.30	100.9	80 - 120.4	
45 Sc	2258857.80	0.87	2284758.30	98.9	80 - 120.4	
72 Ge	434237.97	1.66	440097.94	98.7	80 - 120.4	
159 Tb	3143283.30	1.99	3175870.30	99.0	80 - 120.4	
209 Bi	1764185.80	1.06	1777464.10	99.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000352

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\020SMPL.D\020SMPL.D#
Date Acquired: Mar 26 2018 04:33 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0053	0.0053	ppb	43.85	100.	
11 B	0.4797	0.4797	ppb	9.34	1000.	
23 Na	-0.6155	-0.6155	ppb	35.19	200000.	
25 Mg	-0.6643	-0.6643	ppb	7.25	200000.	
27 Al	-0.5831	-0.5831	ppb	3.49	200000.	
28 Si	-40.43	-40.43	ppb	289.39	#VALUE!	
29 Si	1.692	1.692	ppb	3881.20	10000.	
39 K	-1.344	-1.344	ppb	97.69	200000.	
43 Ca	-6.053	-6.053	ppb	57.94	#VALUE!	
44 Ca	0.0607	0.0607	ppb	2587.30	200000.	
51 V	-0.0301	-0.0301	ppb	161.71	1000.	
52 Cr	0.003	0.003	ppb	728.59	2000.	
53 Cr	-0.198	-0.198	ppb	5.14	#VALUE!	
55 Mn	0.0036	0.0036	ppb	76.43	2000.	
56 Fe	-4.712	-4.712	ppb	51.72	#VALUE!	
57 Fe	-2.842	-2.842	ppb	134.13	100000.	
59 Co	0.0021	0.0021	ppb	97.67	1000.	
60 Ni	0.0007	0.0007	ppb	1512.60	1000.	
63 Cu	0.0056	0.0056	ppb	134.38	#VALUE!	
65 Cu	-0.0028	-0.0028	ppb	174.31	2000.	
66 Zn	0.0631	0.0631	ppb	116.90	2000.	
68 Zn	0.0924	0.0924	ppb	70.29	#VALUE!	
75 As	0.0901	0.0901	ppb	248.11	1000.	
82 Se	0.0426	0.0426	ppb	1596.10	1000.	
88 Sr	0.0033	0.0033	ppb	82.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0059	-0.0059	ppb	24.13	1000.	
107 Ag	0.0013	0.0013	ppb	253.06	100.	
109 Ag	-0.0009	-0.0009	ppb	293.89	#VALUE!	
111 Cd	0.0189	0.0189	ppb	72.94	#VALUE!	
114 Cd	0.0034	0.0034	ppb	197.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0365	0.0365	ppb	19.43	1000.	
120 Sn	0.0056	0.0056	ppb	412.53	#VALUE!	
121 Sb	-0.0007	-0.0007	ppb	544.63	#VALUE!	
123 Sb	-0.0014	-0.0014	ppb	115.23	1000.	
135 Ba	-0.0081	-0.0081	ppb	123.58	2000.	
137 Ba	-0.0075	-0.0075	ppb	38.41	#VALUE!	
182 W	0.0014	0.0014	ppb	220.63	1000.	
203 Tl	-0.0014	-0.0014	ppb	301.90	1000.	
205 Tl	0.0008	0.0008	ppb	319.72	#VALUE!	
208 Pb	0.	0.	ppb	23323.00	2000.	
232 Th	0.0013	0.0013	ppb	74.07	1000.	
238 U	-0.0001	-0.0001	ppb	620.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2517944.50	0.69	2473849.30	101.8	69.5 - 120	
45 Sc	2287181.80	1.34	2284758.30	100.1	69.5 - 120	
72 Ge	441612.97	1.40	440097.94	100.3	69.5 - 120	
159 Tb	3168971.00	0.34	3175870.30	99.8	69.5 - 120	
209 Bi	1775954.80	0.95	1777464.10	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000353

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\021ICSA.D\021ICSA.D#
Date Acquired: Mar 26 2018 04:37 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0031	ppb	64.45		
11 B	0.7686	ppb	6.29		
23 Na	96,140.	ppb	1.53		
25 Mg	95,140.	ppb	0.23		
27 Al	95,400.	ppb	0.55		
28 Si	-382.9	ppb	17.00		
29 Si	-644.2	ppb	4.30		Fail
39 K	96,960.	ppb	0.40		
43 Ca	101,200.	ppb	1.43		
44 Ca	94,520.	ppb	0.82		
51 V	0.2016	ppb	18.44		
52 Cr	0.7437	ppb	4.02		
53 Cr	-0.3622	ppb	26.22		
55 Mn	0.2949	ppb	6.44		
56 Fe	92,080.	ppb	0.46		
57 Fe	89,940.	ppb	0.50		
59 Co	0.0875	ppb	6.57		
60 Ni	-0.1092	ppb	46.88		
63 Cu	2.983	ppb	1.71		
65 Cu	0.8759	ppb	10.23		
66 Zn	2.262	ppb	4.96		
68 Zn	-0.2107	ppb	52.30		
75 As	0.3822	ppb	34.38		
82 Se	0.1772	ppb	294.24		
88 Sr	0.8633	ppb	4.06		
89 Y	--------	---	--------		
98 Mo	1,802.	ppb	1.16		
107 Ag	0.0224	ppb	21.47		
109 Ag	0.024	ppb	28.64		
111 Cd	0.0217	ppb	203.04		
114 Cd	0.0768	ppb	34.68		
115 In	--------	---	--------		
118 Sn	0.0735	ppb	31.22		
120 Sn	0.0411	ppb	24.40		
121 Sb	0.0519	ppb	17.21		
123 Sb	0.0512	ppb	21.45		
135 Ba	0.0965	ppb	22.20		
137 Ba	0.0632	ppb	13.09		
182 W	0.2354	ppb	2.73		
203 Tl	0.0024	ppb	307.22		
205 Tl	0.0032	ppb	65.56		
208 Pb	0.0878	ppb	5.11		
232 Th	0.0076	ppb	73.32		
238 U	0.0018	ppb	60.24		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2669873.00	0.73	2473849.30	107.9	69.5 - 120.4	
45 Sc	2560636.50	0.83	2284758.30	112.1	69.5 - 120.4	
72 Ge	501293.03	0.57	440097.94	113.9	69.5 - 120.4	
159 Tb	3497923.30	0.60	3175870.30	110.1	69.5 - 120.4	
209 Bi	1808060.60	0.87	1777464.10	101.7	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000354

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\022ICSB.D\022ICSB.D#
Date Acquired: Mar 26 2018 04:41 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.92	ppb	0.87	20.00	79.5 - 120	
11 B	20.1	ppb	2.89	20.00	79.5 - 120	
23 Na	96,010.	ppb	0.71	#########	79.5 - 120	
25 Mg	95,310.	ppb	0.44	#########	79.5 - 120	
27 Al	96,870.	ppb	1.57	#########	79.5 - 120	
28 Si	352.8	ppb	28.32	---	##### - #####	
29 Si	66.41	ppb	85.89	---	##### - #####	
39 K	98,350.	ppb	1.13	#########	79.5 - 120	
43 Ca	101,300.	ppb	1.65	#########	79.5 - 120	
44 Ca	96,200.	ppb	1.76	#########	79.5 - 120	
51 V	19.84	ppb	0.74	20.00	79.5 - 120	
52 Cr	20.08	ppb	0.97	20.00	79.5 - 120	
53 Cr	19.53	ppb	0.80	---	##### - #####	
55 Mn	19.49	ppb	0.54	20.00	79.5 - 120	
56 Fe	92,920.	ppb	1.41	#########	79.5 - 120	
57 Fe	89,700.	ppb	1.34	#########	79.5 - 120	
59 Co	19.01	ppb	0.99	20.00	79.5 - 120	
60 Ni	18.54	ppb	1.21	20.00	79.5 - 120	
63 Cu	21.11	ppb	0.68	20.00	79.5 - 120	
65 Cu	19.1	ppb	0.27	20.00	79.5 - 120	
66 Zn	20.51	ppb	0.93	20.00	79.5 - 120	
68 Zn	18.22	ppb	1.56	20.00	79.5 - 120	
75 As	19.72	ppb	1.47	20.00	79.5 - 120	
82 Se	19.21	ppb	2.08	20.00	79.5 - 120	
88 Sr	20.47	ppb	0.28	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,839.	ppb	0.56	2000.00	79.5 - 120	
107 Ag	18.49	ppb	0.94	20.00	79.5 - 120	
109 Ag	18.28	ppb	1.41	20.00	79.5 - 120	
111 Cd	18.62	ppb	0.75	20.00	79.5 - 120	
114 Cd	18.64	ppb	0.69	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.08	ppb	0.95	20.00	79.5 - 120	
120 Sn	20.12	ppb	1.52	20.00	79.5 - 120	
121 Sb	20.3	ppb	0.73	20.00	79.5 - 120	
123 Sb	20.2	ppb	0.67	20.00	79.5 - 120	
135 Ba	20.38	ppb	0.72	20.00	79.5 - 120	
137 Ba	20.67	ppb	1.08	20.00	79.5 - 120	
182 W	20.75	ppb	0.84	20.00	79.5 - 120	
203 Tl	21.31	ppb	0.48	20.00	79.5 - 120	
205 Tl	21.03	ppb	0.30	20.00	79.5 - 120	
208 Pb	21.25	ppb	0.30	20.00	79.5 - 120	
232 Th	21.98	ppb	0.51	20.00	79.5 - 120	
238 U	21.75	ppb	0.18	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2621262.50	0.59	2473849.30	106.0	69.5 - 120	
45 Sc	2526395.30	0.84	2284758.30	110.6	69.5 - 120	
72 Ge	494145.91	0.35	440097.94	112.3	69.5 - 120	
159 Tb	3545330.00	0.50	3175870.30	111.6	69.5 - 120	
209 Bi	1806664.50	0.51	1777464.10	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000355

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\023SMPL.D\023SMPL.D#
Date Acquired: Mar 26 2018 04:46 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0016	0.0016	ppb	187.13	100.	
11 B	0.479	0.479	ppb	25.05	1000.	
23 Na	1.928	1.928	ppb	21.19	200000.	
25 Mg	0.5367	0.5367	ppb	44.44	200000.	
27 Al	0.1678	0.1678	ppb	95.05	200000.	
28 Si	-5.102	-5.102	ppb	2093.30	#VALUE!	
29 Si	-190.4	-190.4	ppb	41.89	10000.	LOW
39 K	-5.378	-5.378	ppb	21.92	200000.	
43 Ca	-5.666	-5.666	ppb	21.96	#VALUE!	
44 Ca	1.788	1.788	ppb	130.03	200000.	
51 V	-0.0279	-0.0279	ppb	18.45	1000.	
52 Cr	0.	0.	ppb	53598.00	2000.	
53 Cr	0.0062	0.0062	ppb	2136.30	#VALUE!	
55 Mn	-0.0087	-0.0087	ppb	106.08	2000.	
56 Fe	-1.779	-1.779	ppb	253.18	#VALUE!	
57 Fe	-3.99	-3.99	ppb	54.71	100000.	
59 Co	-0.0029	-0.0029	ppb	61.19	1000.	
60 Ni	0.0026	0.0026	ppb	351.05	1000.	
63 Cu	0.0236	0.0236	ppb	33.32	#VALUE!	
65 Cu	0.0045	0.0045	ppb	119.13	2000.	
66 Zn	0.0927	0.0927	ppb	43.12	2000.	
68 Zn	-0.2335	-0.2335	ppb	27.61	#VALUE!	
75 As	0.1617	0.1617	ppb	116.51	1000.	
82 Se	0.0775	0.0775	ppb	894.45	1000.	
88 Sr	0.0009	0.0009	ppb	396.94	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3326	0.3326	ppb	27.08	1000.	
107 Ag	0.0001	0.0001	ppb	5031.40	100.	
109 Ag	-0.0005	-0.0005	ppb	163.96	#VALUE!	
111 Cd	-0.048	-0.048	ppb	31.92	#VALUE!	
114 Cd	0.0047	0.0047	ppb	111.59	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0183	0.0183	ppb	110.14	1000.	
120 Sn	-0.0123	-0.0123	ppb	73.52	#VALUE!	
121 Sb	0.0041	0.0041	ppb	135.08	#VALUE!	
123 Sb	0.0049	0.0049	ppb	131.62	1000.	
135 Ba	-0.0116	-0.0116	ppb	85.47	2000.	
137 Ba	-0.0114	-0.0114	ppb	109.75	#VALUE!	
182 W	-0.0038	-0.0038	ppb	196.71	1000.	
203 Tl	-0.0005	-0.0005	ppb	418.01	1000.	
205 Tl	0.0074	0.0074	ppb	20.47	#VALUE!	
208 Pb	0.0003	0.0003	ppb	1170.20	2000.	
232 Th	0.0039	0.0039	ppb	13.91	1000.	
238 U	0.001	0.001	ppb	108.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2362184.30	0.26	2473849.30	95.5	69.5 - 120	
45 Sc	2234187.50	0.54	2284758.30	97.8	69.5 - 120	
72 Ge	434373.56	1.62	440097.94	98.7	69.5 - 120	
159 Tb	3231878.00	0.91	3175870.30	101.8	69.5 - 120	
209 Bi	1778775.60	0.84	1777464.10	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000356

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\024SMPL.D\024SMPL.D#
Date Acquired: Mar 26 2018 04:49 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	102.8	102.8	ppb	1.96	100.	>LDR
11 B	526.7	526.7	ppb	6.29	1000.	
23 Na	1.138	1.138	ppb	21.23	200000.	
25 Mg	0.6745	0.6745	ppb	18.50	200000.	
27 Al	0.6478	0.6478	ppb	29.30	200000.	
28 Si	-459.9	-459.9	ppb	7.32	#VALUE!	
29 Si	-543.	-543.	ppb	6.36	10000.	LOW
39 K	-16.09	-16.09	ppb	16.50	200000.	
43 Ca	1,497.	1,497.	ppb	1.56	#VALUE!	
44 Ca	112.1	112.1	ppb	15.89	200000.	
51 V	1,016.	1,016.	ppb	1.16	1000.	>LDR
52 Cr	2,034.	2,034.	ppb	1.22	2000.	>LDR
53 Cr	2,107.	2,107.	ppb	0.84	#VALUE!	
55 Mn	2,035.	2,035.	ppb	1.60	2000.	>LDR
56 Fe	-12.66	-12.66	ppb	20.32	#VALUE!	
57 Fe	-8.398	-8.398	ppb	5.04	100000.	
59 Co	1,017.	1,017.	ppb	1.09	1000.	>LDR
60 Ni	1,036.	1,036.	ppb	0.91	1000.	>LDR
63 Cu	2,032.	2,032.	ppb	0.91	#VALUE!	
65 Cu	2,044.	2,044.	ppb	1.40	2000.	>LDR
66 Zn	2,095.	2,095.	ppb	1.47	2000.	>LDR
68 Zn	2,111.	2,111.	ppb	1.24	#VALUE!	
75 As	1,048.	1,048.	ppb	1.99	1000.	>LDR
82 Se	1,065.	1,065.	ppb	0.68	1000.	>LDR
88 Sr	2,026.	2,026.	ppb	2.05	2000.	>LDR
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,027.	1,027.	ppb	2.26	1000.	>LDR
107 Ag	107.6	107.6	ppb	1.17	100.	>LDR
109 Ag	106.9	106.9	ppb	0.50	#VALUE!	
111 Cd	1,074.	1,074.	ppb	2.15	#VALUE!	
114 Cd	1,063.	1,063.	ppb	1.48	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,046.	1,046.	ppb	0.50	1000.	>LDR
120 Sn	1,026.	1,026.	ppb	0.30	#VALUE!	
121 Sb	1,025.	1,025.	ppb	0.70	#VALUE!	
123 Sb	1,035.	1,035.	ppb	1.13	1000.	>LDR
135 Ba	2,126.	2,126.	ppb	0.69	2000.	>LDR
137 Ba	2,091.	2,091.	ppb	0.69	#VALUE!	
182 W	1,036.	1,036.	ppb	0.65	1000.	>LDR
203 Tl	1,014.	1,014.	ppb	0.54	1000.	>LDR
205 Tl	982.8	982.8	ppb	0.41	#VALUE!	
208 Pb	2,023.	2,023.	ppb	0.77	2000.	>LDR
232 Th	988.2	988.2	ppb	1.13	1000.	
238 U	1,001.	1,001.	ppb	1.20	1000.	>LDR

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2571521.00	2.06	2473849.30	103.9	69.5 - 120	
45 Sc	2391839.80	0.90	2284758.30	104.7	69.5 - 120	
72 Ge	457407.63	1.52	440097.94	103.9	69.5 - 120	
159 Tb	3424780.00	0.35	3175870.30	107.8	69.5 - 120	
209 Bi	1900717.00	0.54	1777464.10	106.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

21 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000357

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 26 2018 04:53 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0142	0.0142	ppb	27.53	100.	
11 B	6.977	6.977	ppb	14.63	1000.	
23 Na	191,200.	191,200.	ppb	0.36	200000.	
25 Mg	183,800.	183,800.	ppb	0.61	200000.	
27 Al	188,800.	188,800.	ppb	0.63	200000.	
28 Si	13,350.	13,350.	ppb	0.96	#VALUE!	
29 Si	14,840.	14,840.	ppb	1.48	10000.	>LDR
39 K	193,900.	193,900.	ppb	1.02	200000.	
43 Ca	193,700.	193,700.	ppb	0.80	#VALUE!	
44 Ca	186,800.	186,800.	ppb	0.72	200000.	
51 V	0.1345	0.1345	ppb	52.11	1000.	
52 Cr	2.857	2.857	ppb	2.27	2000.	
53 Cr	1.549	1.549	ppb	12.95	#VALUE!	
55 Mn	7.292	7.292	ppb	1.13	2000.	
56 Fe	94,260.	94,260.	ppb	0.98	#VALUE!	
57 Fe	91,650.	91,650.	ppb	0.71	100000.	
59 Co	2.651	2.651	ppb	1.10	1000.	
60 Ni	3.196	3.196	ppb	3.14	1000.	
63 Cu	7.663	7.663	ppb	1.18	#VALUE!	
65 Cu	2.664	2.664	ppb	3.05	2000.	
66 Zn	2.669	2.669	ppb	1.65	2000.	
68 Zn	0.4436	0.4436	ppb	30.79	#VALUE!	
75 As	0.5415	0.5415	ppb	5.42	1000.	
82 Se	0.3635	0.3635	ppb	82.94	1000.	
88 Sr	6.37	6.37	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5504	0.5504	ppb	13.31	1000.	
107 Ag	0.3462	0.3462	ppb	3.95	100.	
109 Ag	0.3291	0.3291	ppb	8.72	#VALUE!	
111 Cd	-0.0357	-0.0357	ppb	60.68	#VALUE!	
114 Cd	-0.0035	-0.0035	ppb	122.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2518	0.2518	ppb	9.13	1000.	
120 Sn	0.2359	0.2359	ppb	5.06	#VALUE!	
121 Sb	0.1127	0.1127	ppb	14.74	#VALUE!	
123 Sb	0.1184	0.1184	ppb	8.47	1000.	
135 Ba	0.2501	0.2501	ppb	10.33	2000.	
137 Ba	0.2128	0.2128	ppb	4.69	#VALUE!	
182 W	0.4259	0.4259	ppb	11.64	1000.	
203 Tl	0.0585	0.0585	ppb	5.00	1000.	
205 Tl	0.0535	0.0535	ppb	1.56	#VALUE!	
208 Pb	0.4652	0.4652	ppb	2.76	2000.	
232 Th	0.2262	0.2262	ppb	17.72	1000.	
238 U	0.1371	0.1371	ppb	15.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2620866.00	1.63	2473849.30	105.9	69.5 - 120	
45 Sc	2562419.30	2.86	2284758.30	112.2	69.5 - 120	
72 Ge	480073.59	1.19	440097.94	109.1	69.5 - 120	
159 Tb	3344739.30	0.49	3175870.30	105.3	69.5 - 120	
209 Bi	1648656.00	1.12	1777464.10	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000358

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 26 2018 04:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0024	0.0024	ppb	89.16	100.	
11 B	3.709	3.709	ppb	5.04	1000.	
23 Na	9.534	9.534	ppb	29.29	200000.	
25 Mg	3.806	3.806	ppb	48.84	200000.	
27 Al	3.381	3.381	ppb	62.20	200000.	
28 Si	-80.34	-80.34	ppb	151.73	#VALUE!	
29 Si	-221.1	-221.1	ppb	53.55	10000.	LOW
39 K	-1.88	-1.88	ppb	87.82	200000.	
43 Ca	1.125	1.125	ppb	672.80	#VALUE!	
44 Ca	3.041	3.041	ppb	62.38	200000.	
51 V	0.0058	0.0058	ppb	281.15	1000.	
52 Cr	0.006	0.006	ppb	393.61	2000.	
53 Cr	0.5273	0.5273	ppb	20.14	#VALUE!	
55 Mn	0.001	0.001	ppb	1591.60	2000.	
56 Fe	-3.83	-3.83	ppb	25.04	#VALUE!	
57 Fe	-1.472	-1.472	ppb	7.23	100000.	
59 Co	0.0062	0.0062	ppb	84.25	1000.	
60 Ni	0.0151	0.0151	ppb	150.26	1000.	
63 Cu	0.0314	0.0314	ppb	35.05	#VALUE!	
65 Cu	0.0327	0.0327	ppb	80.83	2000.	
66 Zn	0.067	0.067	ppb	95.24	2000.	
68 Zn	-0.0672	-0.0672	ppb	34.17	#VALUE!	
75 As	0.132	0.132	ppb	22.56	1000.	
82 Se	0.1452	0.1452	ppb	226.65	1000.	
88 Sr	0.0067	0.0067	ppb	20.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0691	0.0691	ppb	38.87	1000.	
107 Ag	-0.0017	-0.0017	ppb	122.71	100.	
109 Ag	0.0007	0.0007	ppb	420.05	#VALUE!	
111 Cd	-0.0374	-0.0374	ppb	38.87	#VALUE!	
114 Cd	0.0025	0.0025	ppb	166.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0689	0.0689	ppb	7.40	1000.	
120 Sn	0.0354	0.0354	ppb	35.59	#VALUE!	
121 Sb	0.0158	0.0158	ppb	19.88	#VALUE!	
123 Sb	0.0152	0.0152	ppb	15.35	1000.	
135 Ba	0.0214	0.0214	ppb	30.83	2000.	
137 Ba	0.0077	0.0077	ppb	128.08	#VALUE!	
182 W	0.0856	0.0856	ppb	31.49	1000.	
203 Tl	0.0061	0.0061	ppb	184.15	1000.	
205 Tl	0.0014	0.0014	ppb	350.28	#VALUE!	
208 Pb	0.0133	0.0133	ppb	52.00	2000.	
232 Th	0.0094	0.0094	ppb	14.90	1000.	
238 U	0.0135	0.0135	ppb	21.75	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2501744.30	0.54	2473849.30	101.1	69.5 - 120	
45 Sc	2333975.50	0.60	2284758.30	102.2	69.5 - 120	
72 Ge	450031.59	0.94	440097.94	102.3	69.5 - 120	
159 Tb	3233799.00	1.48	3175870.30	101.8	69.5 - 120	
209 Bi	1810722.50	0.32	1777464.10	101.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000359

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 26 2018 05:01 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0058	0.0058	ppb	97.53	100.	
11 B	2.436	2.436	ppb	7.04	1000.	
23 Na	3.005	3.005	ppb	13.38	200000.	
25 Mg	0.2549	0.2549	ppb	14.62	200000.	
27 Al	-0.2384	-0.2384	ppb	20.45	200000.	
28 Si	7.905	7.905	ppb	1329.50	#VALUE!	
29 Si	-100.9	-100.9	ppb	96.89	10000.	LOW
39 K	-3.049	-3.049	ppb	36.14	200000.	
43 Ca	-1.953	-1.953	ppb	152.07	#VALUE!	
44 Ca	-0.879	-0.879	ppb	286.46	200000.	
51 V	-0.0266	-0.0266	ppb	159.89	1000.	
52 Cr	-0.0042	-0.0042	ppb	294.26	2000.	
53 Cr	0.4	0.4	ppb	55.38	#VALUE!	
55 Mn	-0.0038	-0.0038	ppb	179.86	2000.	
56 Fe	-3.425	-3.425	ppb	84.12	#VALUE!	
57 Fe	-3.228	-3.228	ppb	92.35	100000.	
59 Co	0.0028	0.0028	ppb	123.59	1000.	
60 Ni	0.0076	0.0076	ppb	135.10	1000.	
63 Cu	0.0266	0.0266	ppb	26.18	#VALUE!	
65 Cu	0.007	0.007	ppb	93.81	2000.	
66 Zn	0.0605	0.0605	ppb	29.90	2000.	
68 Zn	-0.16	-0.16	ppb	105.50	#VALUE!	
75 As	0.0188	0.0188	ppb	961.68	1000.	
82 Se	0.179	0.179	ppb	455.98	1000.	
88 Sr	0.0034	0.0034	ppb	151.70	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0268	0.0268	ppb	58.13	1000.	
107 Ag	-0.0021	-0.0021	ppb	175.28	100.	
109 Ag	-0.0003	-0.0003	ppb	667.11	#VALUE!	
111 Cd	-0.0301	-0.0301	ppb	67.08	#VALUE!	
114 Cd	0.004	0.004	ppb	73.39	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.059	0.059	ppb	17.00	1000.	
120 Sn	0.0174	0.0174	ppb	52.39	#VALUE!	
121 Sb	0.0096	0.0096	ppb	28.79	#VALUE!	
123 Sb	0.0051	0.0051	ppb	101.44	1000.	
135 Ba	0.0013	0.0013	ppb	833.84	2000.	
137 Ba	0.0017	0.0017	ppb	580.54	#VALUE!	
182 W	0.0417	0.0417	ppb	15.05	1000.	
203 Tl	0.0018	0.0018	ppb	43.35	1000.	
205 Tl	0.0027	0.0027	ppb	111.04	#VALUE!	
208 Pb	0.0049	0.0049	ppb	67.97	2000.	
232 Th	0.0057	0.0057	ppb	41.96	1000.	
238 U	0.0036	0.0036	ppb	52.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2464335.50	1.37	2473849.30	99.6	69.5 - 120	
45 Sc	2278116.50	1.16	2284758.30	99.7	69.5 - 120	
72 Ge	439439.00	1.14	440097.94	99.9	69.5 - 120	
159 Tb	3196002.80	0.52	3175870.30	100.6	69.5 - 120	
209 Bi	1785365.10	0.23	1777464.10	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000360

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\028_CCV.D\028_CCV.D#
Date Acquired: Mar 26 2018 05:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.65	ppb	2.28	25	98.6	
11 B	26.56	ppb	3.65	25	106.24	
23 Na	5,011.	ppb	1.22	5,000	100.22	
25 Mg	5,127.	ppb	1.46	5,000	102.54	
27 Al	510.1	ppb	1.92	500	102.02	
28 Si	391.2	ppb	28.12	500	78.24	
29 Si	271.	ppb	29.10	500	54.2	Fail
39 K	5,053.	ppb	0.15	5,000	101.06	
43 Ca	5,040.	ppb	2.03	5,000	100.8	
44 Ca	5,134.	ppb	1.13	5,000	102.68	
51 V	24.8	ppb	1.74	25	99.2	
52 Cr	25.17	ppb	0.93	25	100.68	
53 Cr	25.39	ppb	1.18	25	101.56	
55 Mn	25.18	ppb	1.89	25	100.72	
56 Fe	4,978.	ppb	1.28	5,000	99.56	
57 Fe	5,116.	ppb	1.03	5,000	102.32	
59 Co	25.09	ppb	1.11	25	100.36	
60 Ni	25.33	ppb	1.91	25	101.32	
63 Cu	25.15	ppb	0.19	25	100.6	
65 Cu	25.34	ppb	1.30	25	101.36	
66 Zn	25.62	ppb	0.40	25	102.48	
68 Zn	25.1	ppb	0.86	25	100.4	
75 As	25.14	ppb	1.32	25	100.56	
82 Se	25.5	ppb	1.90	25	102	
88 Sr	25.2	ppb	2.03	25	100.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.97	ppb	1.83	25	99.88	
107 Ag	25.53	ppb	0.59	25	102.12	
109 Ag	25.79	ppb	0.91	25	103.16	
111 Cd	25.35	ppb	1.06	25	101.4	
114 Cd	25.64	ppb	1.43	25	102.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.48	ppb	1.06	25	101.92	
120 Sn	25.72	ppb	0.57	25	102.88	
121 Sb	25.49	ppb	1.33	25	101.96	
123 Sb	25.75	ppb	1.26	25	103	
135 Ba	25.35	ppb	1.72	25	101.4	
137 Ba	25.75	ppb	1.52	25	103	
182 W	25.69	ppb	1.43	25	102.76	
203 Tl	25.03	ppb	0.42	25	100.12	
205 Tl	25.13	ppb	1.01	25	100.52	
208 Pb	25.27	ppb	0.89	25	101.08	
232 Th	25.02	ppb	0.71	25	100.08	
238 U	24.81	ppb	0.61	25	99.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2702401.00	1.16	2473849.30	109.2	80 - 120.4	
45 Sc	2461381.80	0.39	2284758.30	107.7	80 - 120.4	
72 Ge	468578.88	0.87	440097.94	106.5	80 - 120.4	
159 Tb	3467931.00	0.41	3175870.30	109.2	80 - 120.4	
209 Bi	1918468.90	0.54	1777464.10	107.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000361

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\029_CCB.D\029_CCB.D#
Date Acquired: Mar 26 2018 05:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0197	ppb	151.60	1.00	
11 B	1.925	ppb	4.16	1.00	
23 Na	55.32	ppb	166.74	1.00	
25 Mg	67.07	ppb	173.70	1.00	Fail
27 Al	49.71	ppb	174.93	1.00	Fail
28 Si	-23.8	ppb	650.84	1.00	
29 Si	-39.17	ppb	226.40	1.00	
39 K	48.81	ppb	181.03	1.00	
43 Ca	49.34	ppb	169.74	1.00	
44 Ca	44.9	ppb	174.86	1.00	Fail
51 V	0.0976	ppb	248.87	1.00	
52 Cr	0.2006	ppb	185.39	1.00	
53 Cr	0.2379	ppb	155.74	1.00	
55 Mn	0.1996	ppb	177.81	1.00	
56 Fe	29.13	ppb	195.54	1.00	
57 Fe	27.73	ppb	208.80	1.00	Fail
59 Co	0.1098	ppb	171.58	1.00	
60 Ni	0.1217	ppb	161.22	1.00	
63 Cu	0.2051	ppb	158.46	1.00	
65 Cu	0.1882	ppb	160.84	1.00	
66 Zn	0.4299	ppb	70.88	1.00	
68 Zn	0.2149	ppb	184.88	1.00	
75 As	0.3504	ppb	88.30	1.00	
82 Se	0.4603	ppb	128.66	1.00	
88 Sr	0.1793	ppb	176.97	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.3604	ppb	165.73	1.00	
107 Ag	0.0154	ppb	168.27	1.00	
109 Ag	0.0147	ppb	169.83	1.00	
111 Cd	0.1135	ppb	128.46	1.00	
114 Cd	0.1049	ppb	167.97	1.00	
115 In	--------	---	--------	---	
118 Sn	0.1572	ppb	119.27	1.00	
120 Sn	0.1304	ppb	162.35	1.00	
121 Sb	0.1236	ppb	158.90	1.00	
123 Sb	0.1166	ppb	162.26	1.00	
135 Ba	0.2553	ppb	168.43	1.00	
137 Ba	0.2426	ppb	171.68	1.00	
182 W	0.1346	ppb	130.09	1.00	
203 Tl	0.1123	ppb	166.16	1.00	
205 Tl	0.1166	ppb	163.98	1.00	
208 Pb	0.2244	ppb	167.56	1.00	Fail
232 Th	0.1326	ppb	155.81	1.00	
238 U	0.1176	ppb	169.13	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2459057.50	1.90	2473849.30	99.4	79.5 - 120	
45 Sc	2245753.50	1.34	2284758.30	98.3	79.5 - 120	
72 Ge	434446.72	1.94	440097.94	98.7	79.5 - 120	
159 Tb	3189679.50	1.32	3175870.30	100.4	79.5 - 120	
209 Bi	1789456.60	1.47	1777464.10	100.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000362

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\030SMPL.D\030SMPL.D#
Date Acquired: Mar 26 2018 05:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2287-001
Misc Info: DW
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0161	0.0161	ppb	23.96	100.	
11 B	4.321	4.321	ppb	0.78	1000.	
23 Na	9,331.	9,331.	ppb	0.60	200000.	
25 Mg	565.5	565.5	ppb	1.97	200000.	
27 Al	54.79	54.79	ppb	1.38	200000.	
28 Si	4,439.	4,439.	ppb	1.65	#VALUE!	
29 Si	5,898.	5,898.	ppb	1.72	10000.	
39 K	593.8	593.8	ppb	1.20	200000.	
43 Ca	5,094.	5,094.	ppb	1.50	#VALUE!	
44 Ca	5,160.	5,160.	ppb	0.27	200000.	
51 V	0.2154	0.2154	ppb	13.03	1000.	
52 Cr	0.0926	0.0926	ppb	22.25	2000.	
53 Cr	-0.5909	-0.5909	ppb	16.06	#VALUE!	
55 Mn	8.525	8.525	ppb	1.26	2000.	
56 Fe	2.407	2.407	ppb	52.64	#VALUE!	
57 Fe	13.77	13.77	ppb	7.27	100000.	
59 Co	0.0497	0.0497	ppb	27.27	1000.	
60 Ni	0.2254	0.2254	ppb	12.76	1000.	
63 Cu	44.29	44.29	ppb	0.28	#VALUE!	
65 Cu	44.09	44.09	ppb	0.75	2000.	
66 Zn	65.39	65.39	ppb	0.75	2000.	
68 Zn	62.87	62.87	ppb	0.49	#VALUE!	
75 As	0.2161	0.2161	ppb	75.24	1000.	
82 Se	0.1878	0.1878	ppb	165.97	1000.	
88 Sr	23.51	23.51	ppb	0.97	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1534	0.1534	ppb	7.80	1000.	
107 Ag	0.0057	0.0057	ppb	32.93	100.	
109 Ag	0.0043	0.0043	ppb	11.53	#VALUE!	
111 Cd	0.0075	0.0075	ppb	343.15	#VALUE!	
114 Cd	0.0083	0.0083	ppb	102.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0449	0.0449	ppb	10.38	1000.	
120 Sn	-0.003	-0.003	ppb	146.21	#VALUE!	
121 Sb	0.0227	0.0227	ppb	6.36	#VALUE!	
123 Sb	0.023	0.023	ppb	9.64	1000.	
135 Ba	3.289	3.289	ppb	3.19	2000.	
137 Ba	3.348	3.348	ppb	4.16	#VALUE!	
182 W	0.0238	0.0238	ppb	14.57	1000.	
203 Tl	0.0034	0.0034	ppb	320.01	1000.	
205 Tl	0.0104	0.0104	ppb	49.75	#VALUE!	
208 Pb	0.31	0.31	ppb	2.76	2000.	
232 Th	0.044	0.044	ppb	22.88	1000.	
238 U	0.0187	0.0187	ppb	13.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2602214.80	1.07	2473849.30	105.2	69.5 - 120	
45 Sc	2414874.00	0.73	2284758.30	105.7	69.5 - 120	
72 Ge	464997.03	0.70	440097.94	105.7	69.5 - 120	
159 Tb	3428656.50	0.92	3175870.30	108.0	69.5 - 120	
209 Bi	1904753.80	0.84	1777464.10	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000363

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\031SMPL.D\031SMPL.D#
Date Acquired: Mar 26 2018 05:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2394-001
Misc Info: DW
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.003	0.003	ppb	81.60	100.	
11 B	10.71	10.71	ppb	1.96	1000.	
23 Na	9,923.	9,923.	ppb	1.44	200000.	
25 Mg	4,345.	4,345.	ppb	1.80	200000.	
27 Al	7.71	7.71	ppb	5.16	200000.	
28 Si	6,685.	6,685.	ppb	2.14	#VALUE!	
29 Si	8,286.	8,286.	ppb	1.96	10000.	
39 K	3,545.	3,545.	ppb	0.95	200000.	
43 Ca	22,540.	22,540.	ppb	0.53	#VALUE!	
44 Ca	21,690.	21,690.	ppb	0.96	200000.	
51 V	0.8285	0.8285	ppb	3.42	1000.	
52 Cr	0.9171	0.9171	ppb	2.12	2000.	
53 Cr	-0.4577	-0.4577	ppb	40.35	#VALUE!	
55 Mn	0.3049	0.3049	ppb	2.37	2000.	
56 Fe	-4.927	-4.927	ppb	29.35	#VALUE!	
57 Fe	27.91	27.91	ppb	4.26	100000.	
59 Co	0.0348	0.0348	ppb	14.51	1000.	
60 Ni	0.0185	0.0185	ppb	165.69	1000.	
63 Cu	3.426	3.426	ppb	0.35	#VALUE!	
65 Cu	3.176	3.176	ppb	2.48	2000.	
66 Zn	2.546	2.546	ppb	6.81	2000.	
68 Zn	2.201	2.201	ppb	7.49	#VALUE!	
75 As	43.08	43.08	ppb	0.74	1000.	
82 Se	0.6266	0.6266	ppb	48.93	1000.	
88 Sr	85.21	85.21	ppb	0.37	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.593	1.593	ppb	3.05	1000.	
107 Ag	0.0388	0.0388	ppb	12.26	100.	
109 Ag	0.0386	0.0386	ppb	18.08	#VALUE!	
111 Cd	0.0071	0.0071	ppb	454.11	#VALUE!	
114 Cd	0.0035	0.0035	ppb	14.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0467	0.0467	ppb	20.93	1000.	
120 Sn	0.0227	0.0227	ppb	48.88	#VALUE!	
121 Sb	0.1899	0.1899	ppb	4.20	#VALUE!	
123 Sb	0.1984	0.1984	ppb	7.63	1000.	
135 Ba	1.59	1.59	ppb	3.46	2000.	
137 Ba	1.646	1.646	ppb	3.18	#VALUE!	
182 W	0.2525	0.2525	ppb	10.63	1000.	
203 Tl	0.0081	0.0081	ppb	13.77	1000.	
205 Tl	0.0029	0.0029	ppb	150.55	#VALUE!	
208 Pb	0.1489	0.1489	ppb	5.22	2000.	
232 Th	0.0049	0.0049	ppb	22.16	1000.	
238 U	2.192	2.192	ppb	2.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2674336.50	1.24	2473849.30	108.1	69.5 - 120	
45 Sc	2475513.30	1.82	2284758.30	108.3	69.5 - 120	
72 Ge	475847.53	1.03	440097.94	108.1	69.5 - 120	
159 Tb	3512392.50	0.42	3175870.30	110.6	69.5 - 120	
209 Bi	1942766.40	1.28	1777464.10	109.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000364

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 26 2018 05:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2395-001
Misc Info: DW
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.014	0.014	ppb	40.67	100.	
11 B	18.5	18.5	ppb	4.46	1000.	
23 Na	61,310.	61,310.	ppb	2.33	200000.	
25 Mg	9,534.	9,534.	ppb	1.45	200000.	
27 Al	0.5784	0.5784	ppb	11.11	200000.	
28 Si	8,091.	8,091.	ppb	1.87	#VALUE!	
29 Si	10,220.	10,220.	ppb	1.14	10000.	>LDR
39 K	2,042.	2,042.	ppb	0.41	200000.	
43 Ca	60,710.	60,710.	ppb	0.73	#VALUE!	
44 Ca	57,050.	57,050.	ppb	0.80	200000.	
51 V	1.029	1.029	ppb	2.80	1000.	
52 Cr	3.528	3.528	ppb	4.22	2000.	
53 Cr	-0.622	-0.622	ppb	4.34	#VALUE!	
55 Mn	33.44	33.44	ppb	0.97	2000.	
56 Fe	49.92	49.92	ppb	7.02	#VALUE!	
57 Fe	123.1	123.1	ppb	4.60	100000.	
59 Co	0.0557	0.0557	ppb	10.69	1000.	
60 Ni	-0.0118	-0.0118	ppb	163.82	1000.	
63 Cu	3.146	3.146	ppb	1.36	#VALUE!	
65 Cu	1.528	1.528	ppb	2.33	2000.	
66 Zn	2.5	2.5	ppb	4.20	2000.	
68 Zn	2.059	2.059	ppb	3.33	#VALUE!	
75 As	5.459	5.459	ppb	2.71	1000.	
82 Se	0.2015	0.2015	ppb	133.35	1000.	
88 Sr	359.8	359.8	ppb	1.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2583	0.2583	ppb	3.44	1000.	
107 Ag	0.0297	0.0297	ppb	2.70	100.	
109 Ag	0.0325	0.0325	ppb	3.25	#VALUE!	
111 Cd	-0.0247	-0.0247	ppb	129.08	#VALUE!	
114 Cd	-0.0658	-0.0658	ppb	97.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	68.47	68.47	ppb	3.09	1000.	
120 Sn	68.19	68.19	ppb	3.14	#VALUE!	
121 Sb	0.0334	0.0334	ppb	11.08	#VALUE!	
123 Sb	0.0372	0.0372	ppb	25.69	1000.	
135 Ba	9.488	9.488	ppb	3.36	2000.	
137 Ba	9.309	9.309	ppb	0.16	#VALUE!	
182 W	0.6731	0.6731	ppb	5.56	1000.	
203 Tl	0.0008	0.0008	ppb	586.77	1000.	
205 Tl	0.004	0.004	ppb	107.53	#VALUE!	
208 Pb	0.0559	0.0559	ppb	6.08	2000.	
232 Th	0.003	0.003	ppb	43.99	1000.	
238 U	0.4005	0.4005	ppb	1.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2642236.80	0.79	2473849.30	106.8	69.5 - 120	
45 Sc	2518081.50	0.96	2284758.30	110.2	69.5 - 120	
72 Ge	479568.69	0.86	440097.94	109.0	69.5 - 120	
159 Tb	3539972.50	0.64	3175870.30	111.5	69.5 - 120	
209 Bi	1895555.60	0.23	1777464.10	106.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000365

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 26 2018 05:25 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2396-001
Misc Info: DW
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0097	0.0097	ppb	127.40	100.	
11 B	9.306	9.306	ppb	5.44	1000.	
23 Na	14,460.	14,460.	ppb	0.59	200000.	
25 Mg	4,591.	4,591.	ppb	0.68	200000.	
27 Al	11.81	11.81	ppb	161.30	200000.	
28 Si	7,077.	7,077.	ppb	1.67	#VALUE!	
29 Si	8,711.	8,711.	ppb	1.40	10000.	
39 K	3,587.	3,587.	ppb	0.55	200000.	
43 Ca	24,910.	24,910.	ppb	0.38	#VALUE!	
44 Ca	24,130.	24,130.	ppb	0.42	200000.	
51 V	0.2305	0.2305	ppb	17.82	1000.	
52 Cr	0.7164	0.7164	ppb	11.29	2000.	
53 Cr	-0.4716	-0.4716	ppb	25.51	#VALUE!	
55 Mn	117.3	117.3	ppb	0.80	2000.	
56 Fe	32.32	32.32	ppb	44.96	#VALUE!	
57 Fe	65.43	65.43	ppb	14.89	100000.	
59 Co	0.0571	0.0571	ppb	55.15	1000.	
60 Ni	0.1708	0.1708	ppb	35.90	1000.	
63 Cu	1.24	1.24	ppb	6.90	#VALUE!	
65 Cu	0.8993	0.8993	ppb	4.77	2000.	
66 Zn	4.787	4.787	ppb	1.63	2000.	
68 Zn	4.63	4.63	ppb	2.54	#VALUE!	
75 As	42.86	42.86	ppb	0.38	1000.	
82 Se	0.2295	0.2295	ppb	59.39	1000.	
88 Sr	82.61	82.61	ppb	1.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.615	5.615	ppb	2.50	1000.	
107 Ag	0.0079	0.0079	ppb	134.38	100.	
109 Ag	0.0102	0.0102	ppb	115.88	#VALUE!	
111 Cd	0.0531	0.0531	ppb	122.67	#VALUE!	
114 Cd	0.0367	0.0367	ppb	113.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2821	0.2821	ppb	39.92	1000.	
120 Sn	0.2571	0.2571	ppb	30.19	#VALUE!	
121 Sb	0.0583	0.0583	ppb	104.48	#VALUE!	
123 Sb	0.0734	0.0734	ppb	73.44	1000.	
135 Ba	8.275	8.275	ppb	1.72	2000.	
137 Ba	8.366	8.366	ppb	1.78	#VALUE!	
182 W	0.8269	0.8269	ppb	9.11	1000.	
203 Tl	0.0374	0.0374	ppb	113.06	1000.	
205 Tl	0.0345	0.0345	ppb	152.97	#VALUE!	
208 Pb	0.0967	0.0967	ppb	91.40	2000.	
232 Th	0.0289	0.0289	ppb	150.05	1000.	
238 U	0.4698	0.4698	ppb	9.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2673300.30	0.81	2473849.30	108.1	69.5 - 120	
45 Sc	2455836.30	1.18	2284758.30	107.5	69.5 - 120	
72 Ge	474954.78	0.89	440097.94	107.9	69.5 - 120	
159 Tb	3462206.50	0.76	3175870.30	109.0	69.5 - 120	
209 Bi	1894575.60	0.80	1777464.10	106.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000366

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 26 2018 05:29 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2412-001
Misc Info: DW
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0047	0.0047	ppb	73.47	100.	
11 B	106.1	106.1	ppb	4.07	1000.	
23 Na	67,710.	67,710.	ppb	0.38	200000.	
25 Mg	3.955	3.955	ppb	5.09	200000.	
27 Al	4.252	4.252	ppb	8.97	200000.	
28 Si	6,026.	6,026.	ppb	2.01	#VALUE!	
29 Si	7,523.	7,523.	ppb	2.23	10000.	
39 K	233.	233.	ppb	1.50	200000.	
43 Ca	8.008	8.008	ppb	24.20	#VALUE!	
44 Ca	24.22	24.22	ppb	11.38	200000.	
51 V	0.0601	0.0601	ppb	18.30	1000.	
52 Cr	0.206	0.206	ppb	9.39	2000.	
53 Cr	-0.4365	-0.4365	ppb	22.44	#VALUE!	
55 Mn	0.7879	0.7879	ppb	2.20	2000.	
56 Fe	-4.292	-4.292	ppb	18.61	#VALUE!	
57 Fe	4.053	4.053	ppb	25.69	100000.	
59 Co	0.0094	0.0094	ppb	40.81	1000.	
60 Ni	0.1775	0.1775	ppb	13.73	1000.	
63 Cu	16.33	16.33	ppb	1.24	#VALUE!	
65 Cu	14.63	14.63	ppb	0.44	2000.	
66 Zn	1.643	1.643	ppb	5.91	2000.	
68 Zn	1.339	1.339	ppb	32.73	#VALUE!	
75 As	15.91	15.91	ppb	0.87	1000.	
82 Se	0.0842	0.0842	ppb	415.47	1000.	
88 Sr	0.0808	0.0808	ppb	17.57	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0049	0.0049	ppb	121.82	1000.	
107 Ag	0.0007	0.0007	ppb	377.49	100.	
109 Ag	0.0019	0.0019	ppb	219.13	#VALUE!	
111 Cd	0.0023	0.0023	ppb	406.70	#VALUE!	
114 Cd	0.0012	0.0012	ppb	395.21	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.317	4.317	ppb	5.83	1000.	
120 Sn	4.376	4.376	ppb	2.34	#VALUE!	
121 Sb	0.0254	0.0254	ppb	31.47	#VALUE!	
123 Sb	0.0169	0.0169	ppb	60.37	1000.	
135 Ba	0.0447	0.0447	ppb	33.32	2000.	
137 Ba	0.0125	0.0125	ppb	63.72	#VALUE!	
182 W	0.0218	0.0218	ppb	9.39	1000.	
203 Tl	0.0052	0.0052	ppb	117.97	1000.	
205 Tl	0.0055	0.0055	ppb	99.87	#VALUE!	
208 Pb	0.1625	0.1625	ppb	11.93	2000.	
232 Th	0.0094	0.0094	ppb	10.77	1000.	
238 U	0.0004	0.0004	ppb	53.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2645308.30	0.54	2473849.30	106.9	69.5 - 120	
45 Sc	2510307.80	0.43	2284758.30	109.9	69.5 - 120	
72 Ge	475494.91	0.42	440097.94	108.0	69.5 - 120	
159 Tb	3464369.50	1.41	3175870.30	109.1	69.5 - 120	
209 Bi	1870315.00	0.58	1777464.10	105.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000367

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 26 2018 05:33 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2443-001
Misc Info: DW
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1025	0.1025	ppb	12.07	100.	
11 B	4.417	4.417	ppb	5.33	1000.	
23 Na	3,475.	3,475.	ppb	1.26	200000.	
25 Mg	1,152.	1,152.	ppb	1.79	200000.	
27 Al	10.87	10.87	ppb	2.13	200000.	
28 Si	7,271.	7,271.	ppb	3.31	#VALUE!	
29 Si	9,011.	9,011.	ppb	3.74	10000.	
39 K	362.	362.	ppb	2.56	200000.	
43 Ca	5,200.	5,200.	ppb	1.11	#VALUE!	
44 Ca	5,176.	5,176.	ppb	1.62	200000.	
51 V	0.3016	0.3016	ppb	9.91	1000.	
52 Cr	0.7937	0.7937	ppb	1.22	2000.	
53 Cr	0.3362	0.3362	ppb	13.93	#VALUE!	
55 Mn	2.561	2.561	ppb	0.75	2000.	
56 Fe	-8.041	-8.041	ppb	42.18	#VALUE!	
57 Fe	3.507	3.507	ppb	3.33	100000.	
59 Co	0.0219	0.0219	ppb	42.21	1000.	
60 Ni	0.0528	0.0528	ppb	9.98	1000.	
63 Cu	10.43	10.43	ppb	0.95	#VALUE!	
65 Cu	10.39	10.39	ppb	0.28	2000.	
66 Zn	6.473	6.473	ppb	1.19	2000.	
68 Zn	6.451	6.451	ppb	5.73	#VALUE!	
75 As	0.0908	0.0908	ppb	82.10	1000.	
82 Se	0.0404	0.0404	ppb	613.90	1000.	
88 Sr	31.04	31.04	ppb	1.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.426	2.426	ppb	0.23	1000.	
107 Ag	0.0063	0.0063	ppb	67.36	100.	
109 Ag	0.009	0.009	ppb	27.61	#VALUE!	
111 Cd	0.023	0.023	ppb	68.74	#VALUE!	
114 Cd	0.0143	0.0143	ppb	21.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5454	0.5454	ppb	6.69	1000.	
120 Sn	0.5189	0.5189	ppb	11.57	#VALUE!	
121 Sb	0.0067	0.0067	ppb	63.97	#VALUE!	
123 Sb	0.0086	0.0086	ppb	42.64	1000.	
135 Ba	1.616	1.616	ppb	2.86	2000.	
137 Ba	1.607	1.607	ppb	1.04	#VALUE!	
182 W	0.0028	0.0028	ppb	185.25	1000.	
203 Tl	0.0049	0.0049	ppb	276.44	1000.	
205 Tl	0.0102	0.0102	ppb	22.06	#VALUE!	
208 Pb	0.2531	0.2531	ppb	5.66	2000.	
232 Th	0.0014	0.0014	ppb	106.30	1000.	
238 U	25.11	25.11	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2590441.00	0.36	2473849.30	104.7	69.5 - 120	
45 Sc	2417849.30	1.25	2284758.30	105.8	69.5 - 120	
72 Ge	462881.19	1.18	440097.94	105.2	69.5 - 120	
159 Tb	3403810.50	1.69	3175870.30	107.2	69.5 - 120	
209 Bi	1897836.40	0.69	1777464.10	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000368

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 26 2018 05:37 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2465-001
Misc Info: DW
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0043	0.0043	ppb	70.84	100.	
11 B	93.3	93.3	ppb	4.65	1000.	
23 Na	3,238.	3,238.	ppb	2.02	200000.	
25 Mg	10.41	10.41	ppb	117.39	200000.	
27 Al	44.26	44.26	ppb	17.64	200000.	
28 Si	447.5	447.5	ppb	42.91	#VALUE!	
29 Si	474.6	474.6	ppb	19.81	10000.	
39 K	168.5	168.5	ppb	4.44	200000.	
43 Ca	26.58	26.58	ppb	97.93	#VALUE!	
44 Ca	25.39	25.39	ppb	101.65	200000.	
51 V	0.1775	0.1775	ppb	33.18	1000.	
52 Cr	0.1141	0.1141	ppb	23.01	2000.	
53 Cr	0.3779	0.3779	ppb	6.78	#VALUE!	
55 Mn	0.1115	0.1115	ppb	66.17	2000.	
56 Fe	11.45	11.45	ppb	59.92	#VALUE!	
57 Fe	12.88	12.88	ppb	51.94	100000.	
59 Co	0.0095	0.0095	ppb	198.38	1000.	
60 Ni	0.0848	0.0848	ppb	14.28	1000.	
63 Cu	0.3281	0.3281	ppb	14.72	#VALUE!	
65 Cu	0.2558	0.2558	ppb	22.14	2000.	
66 Zn	1.231	1.231	ppb	10.22	2000.	
68 Zn	0.9358	0.9358	ppb	14.37	#VALUE!	
75 As	0.0843	0.0843	ppb	225.28	1000.	
82 Se	0.0708	0.0708	ppb	616.45	1000.	
88 Sr	0.4829	0.4829	ppb	35.95	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0552	0.0552	ppb	127.01	1000.	
107 Ag	0.005	0.005	ppb	86.47	100.	
109 Ag	0.0061	0.0061	ppb	108.76	#VALUE!	
111 Cd	0.0546	0.0546	ppb	118.91	#VALUE!	
114 Cd	0.0134	0.0134	ppb	149.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0353	0.0353	ppb	75.40	1000.	
120 Sn	0.0113	0.0113	ppb	318.85	#VALUE!	
121 Sb	0.0203	0.0203	ppb	126.88	#VALUE!	
123 Sb	0.0227	0.0227	ppb	85.39	1000.	
135 Ba	0.2475	0.2475	ppb	22.25	2000.	
137 Ba	0.2797	0.2797	ppb	36.68	#VALUE!	
182 W	0.0367	0.0367	ppb	76.23	1000.	
203 Tl	0.0169	0.0169	ppb	155.47	1000.	
205 Tl	0.0223	0.0223	ppb	123.41	#VALUE!	
208 Pb	0.0568	0.0568	ppb	61.66	2000.	
232 Th	0.0126	0.0126	ppb	155.00	1000.	
238 U	0.0189	0.0189	ppb	154.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2573777.30	2.51	2473849.30	104.0	69.5 - 120	
45 Sc	2353255.80	1.79	2284758.30	103.0	69.5 - 120	
72 Ge	452993.97	1.56	440097.94	102.9	69.5 - 120	
159 Tb	3282668.80	0.41	3175870.30	103.4	69.5 - 120	
209 Bi	1826808.50	0.82	1777464.10	102.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000369

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 26 2018 05:41 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2466-001
Misc Info: DW
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0022	0.0022	ppb	86.38	100.	
11 B	67.58	67.58	ppb	2.31	1000.	
23 Na	50,420.	50,420.	ppb	0.80	200000.	
25 Mg	678.7	678.7	ppb	1.47	200000.	
27 Al	9.315	9.315	ppb	3.73	200000.	
28 Si	5,611.	5,611.	ppb	0.76	#VALUE!	
29 Si	7,468.	7,468.	ppb	1.08	10000.	
39 K	2,840.	2,840.	ppb	0.37	200000.	
43 Ca	2,720.	2,720.	ppb	0.78	#VALUE!	
44 Ca	2,729.	2,729.	ppb	2.07	200000.	
51 V	0.6883	0.6883	ppb	8.49	1000.	
52 Cr	1.746	1.746	ppb	7.22	2000.	
53 Cr	0.1213	0.1213	ppb	135.37	#VALUE!	
55 Mn	13.06	13.06	ppb	1.13	2000.	
56 Fe	-17.85	-17.85	ppb	22.70	#VALUE!	
57 Fe	-3.736	-3.736	ppb	52.14	100000.	
59 Co	0.0233	0.0233	ppb	42.79	1000.	
60 Ni	0.1232	0.1232	ppb	16.14	1000.	
63 Cu	3.671	3.671	ppb	2.43	#VALUE!	
65 Cu	2.34	2.34	ppb	4.84	2000.	
66 Zn	0.7545	0.7545	ppb	9.59	2000.	
68 Zn	0.4158	0.4158	ppb	2.92	#VALUE!	
75 As	212.2	212.2	ppb	1.41	1000.	
82 Se	0.2074	0.2074	ppb	111.67	1000.	
88 Sr	19.11	19.11	ppb	2.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.038	1.038	ppb	1.91	1000.	
107 Ag	0.0228	0.0228	ppb	31.58	100.	
109 Ag	0.0251	0.0251	ppb	30.15	#VALUE!	
111 Cd	0.0165	0.0165	ppb	83.42	#VALUE!	
114 Cd	0.0035	0.0035	ppb	54.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0427	0.0427	ppb	34.84	1000.	
120 Sn	0.0138	0.0138	ppb	87.27	#VALUE!	
121 Sb	0.1336	0.1336	ppb	1.98	#VALUE!	
123 Sb	0.1472	0.1472	ppb	10.18	1000.	
135 Ba	2.28	2.28	ppb	3.79	2000.	
137 Ba	2.126	2.126	ppb	2.69	#VALUE!	
182 W	4.484	4.484	ppb	2.59	1000.	
203 Tl	0.0039	0.0039	ppb	137.49	1000.	
205 Tl	0.0007	0.0007	ppb	686.70	#VALUE!	
208 Pb	0.2705	0.2705	ppb	5.74	2000.	
232 Th	0.0045	0.0045	ppb	38.63	1000.	
238 U	1.389	1.389	ppb	3.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2842592.30	3.43	2473849.30	114.9	69.5 - 120	
45 Sc	2617613.00	2.19	2284758.30	114.6	69.5 - 120	
72 Ge	499409.22	1.64	440097.94	113.5	69.5 - 120	
159 Tb	3579852.50	1.85	3175870.30	112.7	69.5 - 120	
209 Bi	1936577.30	1.92	1777464.10	109.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000370

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 26 2018 05:45 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.445	2.689	ppb	1.34	100.	
11 B	115.1	23.02	ppb	3.59	1000.	
23 Na	32,475.	6,495.	ppb	0.31	200000.	
25 Mg	86,750.	17,350.	ppb	0.86	200000.	
27 Al	233,650.	46,730.	ppb	0.33	200000.	
28 Si	121.05	24.21	ppb	406.40	#VALUE!	
29 Si	-772.	-154.4	ppb	25.75	10000.	LOW
39 K	66,150.	13,230.	ppb	0.23	200000.	
43 Ca	168,200.	33,640.	ppb	1.45	#VALUE!	
44 Ca	161,900.	32,380.	ppb	0.50	200000.	
51 V	524.	104.8	ppb	1.54	1000.	
52 Cr	222.9	44.58	ppb	0.25	2000.	
53 Cr	246.95	49.39	ppb	2.42	#VALUE!	
55 Mn	1,823.	364.6	ppb	0.31	2000.	
56 Fe	245,600.	49,120.	ppb	1.05	#VALUE!	
57 Fe	239,300.	47,860.	ppb	1.43	100000.	
59 Co	107.55	21.51	ppb	0.22	1000.	
60 Ni	274.2	54.84	ppb	0.52	1000.	
63 Cu	210.2	42.04	ppb	0.76	#VALUE!	
65 Cu	211.65	42.33	ppb	0.71	2000.	
66 Zn	738.	147.6	ppb	0.87	2000.	
68 Zn	778.5	155.7	ppb	0.99	#VALUE!	
75 As	209.75	41.95	ppb	0.17	1000.	
82 Se	5.425	1.085	ppb	13.05	1000.	
88 Sr	953.	190.6	ppb	1.82	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.92	1.984	ppb	0.30	1000.	
107 Ag	1.6705	0.3341	ppb	1.79	100.	
109 Ag	1.555	0.311	ppb	7.47	#VALUE!	
111 Cd	3.2185	0.6437	ppb	3.12	#VALUE!	
114 Cd	-0.2036	-0.0407	ppb	36.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.9	10.38	ppb	0.88	1000.	
120 Sn	52.3	10.46	ppb	0.55	#VALUE!	
121 Sb	2.853	0.5706	ppb	5.25	#VALUE!	
123 Sb	2.8955	0.5791	ppb	4.90	1000.	
135 Ba	2,059.5	411.9	ppb	0.41	2000.	
137 Ba	2,074.	414.8	ppb	1.00	#VALUE!	
182 W	1.0355	0.2071	ppb	12.17	1000.	
203 Tl	4.0695	0.8139	ppb	2.76	1000.	
205 Tl	4.0925	0.8185	ppb	1.66	#VALUE!	
208 Pb	199.95	39.99	ppb	0.36	2000.	
232 Th	119.55	23.91	ppb	0.45	1000.	
238 U	25.17	5.034	ppb	0.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2748004.50	0.81	2473849.30	111.1	69.5 - 120	
45 Sc	2619827.80	0.95	2284758.30	114.7	69.5 - 120	
72 Ge	495184.97	1.10	440097.94	112.5	69.5 - 120	
159 Tb	3677223.30	0.36	3175870.30	115.8	69.5 - 120	
209 Bi	1926307.60	0.33	1777464.10	108.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000371

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 26 2018 05:49 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.	1.5	ppb	1.69	100.	
11 B	129.6	12.96	ppb	3.22	1000.	
23 Na	36,020.	3,602.	ppb	1.76	200000.	
25 Mg	96,270.	9,627.	ppb	0.72	200000.	
27 Al	260,400.	26,040.	ppb	0.32	200000.	
28 Si	-448.5	-44.85	ppb	140.00	#VALUE!	
29 Si	-3,219.	-321.9	ppb	14.65	10000.	LOW
39 K	72,930.	7,293.	ppb	0.80	200000.	
43 Ca	186,700.	18,670.	ppb	0.80	#VALUE!	
44 Ca	180,600.	18,060.	ppb	1.14	200000.	
51 V	571.4	57.14	ppb	0.05	1000.	
52 Cr	248.1	24.81	ppb	0.51	2000.	
53 Cr	265.	26.5	ppb	1.10	#VALUE!	
55 Mn	2,054.	205.4	ppb	0.56	2000.	
56 Fe	272,300.	27,230.	ppb	0.22	#VALUE!	
57 Fe	265,000.	26,500.	ppb	0.19	100000.	
59 Co	120.9	12.09	ppb	1.22	1000.	
60 Ni	306.7	30.67	ppb	0.40	1000.	
63 Cu	234.1	23.41	ppb	0.95	#VALUE!	
65 Cu	237.1	23.71	ppb	1.13	2000.	
66 Zn	829.9	82.99	ppb	0.20	2000.	
68 Zn	868.9	86.89	ppb	1.04	#VALUE!	
75 As	235.5	23.55	ppb	1.91	1000.	
82 Se	8.811	0.8811	ppb	53.01	1000.	
88 Sr	1,070.	107.	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.71	1.071	ppb	1.73	1000.	
107 Ag	1.937	0.1937	ppb	7.03	100.	
109 Ag	1.731	0.1731	ppb	12.15	#VALUE!	
111 Cd	2.728	0.2728	ppb	14.78	#VALUE!	
114 Cd	-0.373	-0.0373	ppb	44.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.88	5.788	ppb	1.68	1000.	
120 Sn	58.31	5.831	ppb	0.80	#VALUE!	
121 Sb	2.978	0.2978	ppb	6.47	#VALUE!	
123 Sb	3.095	0.3095	ppb	7.91	1000.	
135 Ba	2,252.	225.2	ppb	0.62	2000.	
137 Ba	2,275.	227.5	ppb	0.45	#VALUE!	
182 W	1.153	0.1153	ppb	15.77	1000.	
203 Tl	4.545	0.4545	ppb	6.03	1000.	
205 Tl	4.441	0.4441	ppb	1.74	#VALUE!	
208 Pb	213.8	21.38	ppb	0.75	2000.	
232 Th	126.3	12.63	ppb	1.12	1000.	
238 U	26.77	2.677	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2683479.00	0.72	2473849.30	108.5	69.5 - 120	
45 Sc	2552411.50	0.81	2284758.30	111.7	69.5 - 120	
72 Ge	484060.19	0.95	440097.94	110.0	69.5 - 120	
159 Tb	3601572.00	0.40	3175870.30	113.4	69.5 - 120	
209 Bi	1938564.10	0.54	1777464.10	109.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000372

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\040_CCV.D\040_CCV.D#
Date Acquired: Mar 26 2018 05:53 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.73	ppb	1.54	25	98.92	
11 B	26.06	ppb	3.14	25	104.24	
23 Na	4,974.	ppb	0.75	5,000	99.48	
25 Mg	5,057.	ppb	1.06	5,000	101.14	
27 Al	518.1	ppb	5.27	500	103.62	
28 Si	425.5	ppb	27.29	500	85.1	
29 Si	226.1	ppb	38.15	500	45.22	Fail
39 K	5,014.	ppb	0.38	5,000	100.28	
43 Ca	5,096.	ppb	0.77	5,000	101.92	
44 Ca	5,144.	ppb	0.78	5,000	102.88	
51 V	24.93	ppb	1.70	25	99.72	
52 Cr	25.14	ppb	1.64	25	100.56	
53 Cr	25.06	ppb	2.04	25	100.24	
55 Mn	25.38	ppb	0.46	25	101.52	
56 Fe	5,026.	ppb	0.41	5,000	100.52	
57 Fe	5,142.	ppb	0.76	5,000	102.84	
59 Co	25.12	ppb	0.78	25	100.48	
60 Ni	25.29	ppb	1.09	25	101.16	
63 Cu	25.16	ppb	1.29	25	100.64	
65 Cu	25.39	ppb	0.29	25	101.56	
66 Zn	25.79	ppb	0.92	25	103.16	
68 Zn	25.25	ppb	0.59	25	101	
75 As	25.5	ppb	0.49	25	102	
82 Se	25.57	ppb	0.84	25	102.28	
88 Sr	25.39	ppb	0.31	25	101.56	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.05	ppb	0.83	25	100.2	
107 Ag	25.7	ppb	0.95	25	102.8	
109 Ag	25.4	ppb	0.78	25	101.6	
111 Cd	25.29	ppb	0.15	25	101.16	
114 Cd	25.38	ppb	0.84	25	101.52	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.17	ppb	0.13	25	100.68	
120 Sn	25.43	ppb	1.73	25	101.72	
121 Sb	25.38	ppb	1.60	25	101.52	
123 Sb	25.41	ppb	0.73	25	101.64	
135 Ba	25.71	ppb	0.70	25	102.84	
137 Ba	25.61	ppb	0.66	25	102.44	
182 W	25.03	ppb	1.74	25	100.12	
203 Tl	24.99	ppb	1.60	25	99.96	
205 Tl	24.89	ppb	1.23	25	99.56	
208 Pb	24.97	ppb	1.39	25	99.88	
232 Th	24.54	ppb	2.17	25	98.16	
238 U	23.97	ppb	2.03	25	95.88	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2653831.50	0.60	2473849.30	107.3	80 - 120.4	
45 Sc	2458954.50	1.06	2284758.30	107.6	80 - 120.4	
72 Ge	468456.09	1.29	440097.94	106.4	80 - 120.4	
159 Tb	3471402.50	0.58	3175870.30	109.3	80 - 120.4	
209 Bi	1912669.40	0.50	1777464.10	107.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000373

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\041_CCB.D\041_CCB.D#
Date Acquired: Mar 26 2018 05:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.001	ppb	295.56	1.00	
11 B	1.417	ppb	1.51	1.00	
23 Na	1.079	ppb	20.54	1.00	
25 Mg	-0.5471	ppb	2.47	1.00	
27 Al	-0.5125	ppb	16.55	1.00	
28 Si	-100.1	ppb	170.43	1.00	
29 Si	-143.	ppb	54.05	1.00	
39 K	-4.951	ppb	24.32	1.00	
43 Ca	-3.906	ppb	179.37	1.00	
44 Ca	-1.967	ppb	107.07	1.00	
51 V	0.0311	ppb	160.77	1.00	
52 Cr	-0.0142	ppb	153.73	1.00	
53 Cr	-0.1794	ppb	72.13	1.00	
55 Mn	0.0021	ppb	500.24	1.00	
56 Fe	-3.546	ppb	86.94	1.00	
57 Fe	0.7701	ppb	238.15	1.00	
59 Co	0.0039	ppb	72.60	1.00	
60 Ni	0.0054	ppb	137.46	1.00	
63 Cu	0.015	ppb	44.66	1.00	
65 Cu	-0.0072	ppb	228.53	1.00	
66 Zn	0.2388	ppb	28.64	1.00	
68 Zn	0.2048	ppb	117.48	1.00	
75 As	-0.0155	ppb	1199.10	1.00	
82 Se	0.0387	ppb	1521.80	1.00	
88 Sr	0.	ppb	2997.70	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0022	ppb	112.85	1.00	
107 Ag	0.0007	ppb	456.14	1.00	
109 Ag	0.0013	ppb	160.68	1.00	
111 Cd	0.0094	ppb	272.59	1.00	
114 Cd	0.0023	ppb	129.65	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0357	ppb	42.46	1.00	
120 Sn	-0.0105	ppb	200.10	1.00	
121 Sb	0.0012	ppb	51.98	1.00	
123 Sb	-0.0012	ppb	376.76	1.00	
135 Ba	-0.0007	ppb	2332.70	1.00	
137 Ba	0.0123	ppb	90.75	1.00	
182 W	0.0168	ppb	64.05	1.00	
203 Tl	0.0069	ppb	41.28	1.00	
205 Tl	0.007	ppb	31.75	1.00	
208 Pb	-0.0021	ppb	121.96	1.00	
232 Th	0.0133	ppb	4.42	1.00	
238 U	0.0042	ppb	30.58	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2465997.80	0.56	2473849.30	99.7	79.5 - 120	
45 Sc	2306372.50	0.84	2284758.30	100.9	79.5 - 120	
72 Ge	441874.81	1.44	440097.94	100.4	79.5 - 120	
159 Tb	3242415.80	0.40	3175870.30	102.1	79.5 - 120	
209 Bi	1790471.60	0.86	1777464.10	100.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000374

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 03/27/2018

REVIEWED

FILE NAME: JLC27A

METHOD: ICP-MS
- ☑ 200.8
- ☑ 6020
- ☑ DOD

JS 3.28.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by MD (initals) on 3/27/18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17623	03/21/2018	03/21/2019	0 ug/L
Standard 1	MW17625	03/21/2018	04/26/2018	Varies by Element
ICV	MW17628	03/21/2018	06/21/2018	Varies by Element
PQL	MW17629	03/21/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17634	03/26/2018	05/14/2018	Varies by Element
ICSA	MW17630	03/21/2018	03/27/2018	Varies by Element
ICSAB	MW17631	03/21/2018	03/27/2018	Varies by Element
CCV	MW17626	03/21/2018	04/26/2018	Varies by Element
Internal Standard	MW17633	03/26/2018	06/26/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Ge was used as internal standard due to instability of Y
- Autosampler error occured @ 21:40, no samples were accepted after the CCB analyzed @ 21:35

JS 3.28.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17623 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17623(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL ofMW17623(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC27A	3/27/2018	2:06:00 13:17	MD
200.8 TUNE	1	JLC27A	3/27/2018	2:06:00 13:20	MD
Cal Blank	1	JLC27A	3/27/2018	2:06:00 14:06	MD
Cal Std 6	1	JLC27A	3/27/2018	2:10:00 14:10	MD
ICV	1	JLC27A	3/27/2018	2:13:00 14:13	MD
ICB	1	JLC27A	3/27/2018	2:17:00 14:17	MD
PQL	1	JLC27A	3/27/2018	2:21:00 14:21	MD
RINSE	1	JLC27A	3/27/2018	2:24:00 14:24	MD
ICSA	1	JLC27A	3/27/2018	2:28:00 14:28	MD
ICSAB	1	JLC27A	3/27/2018	2:32:00 14:32	MD
RINSE	1	JLC27A	3/27/2018	2:36:00 14:36	MD
LRS1	1	JLC27A	3/27/2018	2:39:00 14:39	MD
LRS2	1	JLC27A	3/27/2018	2:43:00 14:43	MD
RINSE	1	JLC27A	3/27/2018	2:46:00 14:46	MD
RINSE	1	JLC27A	3/27/2018	2:50:00 14:50	MD
CCV	1	JLC27A	3/27/2018	2:54:00 14:54	MD
CCB	1	JLC27A	3/27/2018	2:58:00 14:58	MD
SL2287-001	1	JLC27A	3/27/2018	3:01:00 15:01	MD
SL2394-001	1	JLC27A	3/27/2018	3:05:00 15:05	MD
SL2395-001	1	JLC27A	3/27/2018	3:09:00 15:09	MD
SL2396-001	1	JLC27A	3/27/2018	3:13:00 15:13	MD
SL2443-001	1	JLC27A	3/27/2018	3:16:00 15:16	MD
SL2465-001	1	JLC27A	3/27/2018	3:20:00 15:20	MD
SL2466-001	1	JLC27A	3/27/2018	3:24:00 15:24	MD
SL2482-001	1	JLC27A	3/27/2018	3:28:00 15:28	MD
SL2079-002	5	JLC27A	3/27/2018	3:32:00 15:32	MD
SL2079-002	10	JLC27A	3/27/2018	3:36:00 15:36	MD
CCV	1	JLC27A	3/27/2018	3:40:00 15:40	MD
CCB	1	JLC27A	3/27/2018	3:43:00 15:43	MD
PBSLC27IMS1	5	JLC27A	3/27/2018	3:47:00 15:47	MD
LCSOLC27IMS1	5	JLC27A	3/27/2018	3:51:00 15:51	MD
SL2500-001	5	JLC27A	3/27/2018	3:55:00 15:55	MD
SL2500-002	5	JLC27A	3/27/2018	3:59:00 15:59	MD
SL2500-003	5	JLC27A	3/27/2018	4:03:00 16:03	MD
SL2500-004	5	JLC27A	3/27/2018	4:07:00 16:07	MD
SL2500-005	5	JLC27A	3/27/2018	4:11:00 16:11	MD
SL2500-006	5	JLC27A	3/27/2018	4:15:00 16:15	MD
SL2500-007	5	JLC27A	3/27/2018	4:19:00 16:19	MD
RINSE	1	JLC27A	3/27/2018	4:23:00 16:23	MD
CCV	1	JLC27A	3/27/2018	4:27:00 16:27	MD
CCB	1	JLC27A	3/27/2018	4:31:00 16:31	MD
SL2500-007L	25	JLC27A	3/27/2018	4:35:00 16:35	MD
SL2500-007A	5	JLC27A	3/27/2018	4:39:00 16:39	MD
SL2500-007S	5	JLC27A	3/27/2018	4:43:00 16:43	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2500-007P	5	JLC27A	3/27/2018	4:47:00 16:47	MD
SL2500-008	5	JLC27A	3/27/2018	4:51:00 16:51	MD
SL2500-009	5	JLC27A	3/27/2018	4:55:00 16:55	MD
SL2500-010	5	JLC27A	3/27/2018	4:59:00 16:59	MD
SL2500-011	5	JLC27A	3/27/2018	5:04:00 17:04	MD
SL2500-012	5	JLC27A	3/27/2018	5:08:00 17:08	MD
RINSE	1	JLC27A	3/27/2018	5:12:00 17:12	MD
CCV	1	JLC27A	3/27/2018	5:16:00 17:16	MD
CCB	1	JLC27A	3/27/2018	5:20:00 17:20	MD
SL2500-013	5	JLC27A	3/27/2018	5:24:00 17:24	MD
SL2500-014	5	JLC27A	3/27/2018	5:28:00 17:28	MD
SL2500-015	5	JLC27A	3/27/2018	5:32:00 17:32	MD
SL2500-016	5	JLC27A	3/27/2018	5:36:00 17:36	MD
SL2500-017	5	JLC27A	3/27/2018	5:40:00 17:40	MD
RINSE	1	JLC27A	3/27/2018	5:45:00 17:45	MD
PBSLC27IMS2	5	JLC27A	3/27/2018	5:49:00 17:49	MD
LCSOLC27IMS2	5	JLC27A	3/27/2018	5:53:00 17:53	MD
SL2500-018	5	JLC27A	3/27/2018	5:57:00 17:57	MD
RINSE	1	JLC27A	3/27/2018	6:01:00 18:01	MD
CCV	1	JLC27A	3/27/2018	6:05:00 18:05	MD
CCB	1	JLC27A	3/27/2018	6:09:00 18:09	MD
SL2500-021	5	JLC27A	3/27/2018	6:13:00 18:13	MD
SL2500-022	5	JLC27A	3/27/2018	6:18:00 18:18	MD
SL2500-023	5	JLC27A	3/27/2018	6:22:00 18:22	MD
SL2500-024	5	JLC27A	3/27/2018	6:26:00 18:26	MD
SL2500-024L	25	JLC27A	3/27/2018	6:31:00 18:31	MD
SL2500-024A	5	JLC27A	3/27/2018	6:35:00 18:35	MD
SL2500-024S	5	JLC27A	3/27/2018	6:39:00 18:39	MD
SL2500-024P	5	JLC27A	3/27/2018	6:44:00 18:44	MD
SL2500-025	5	JLC27A	3/27/2018	6:48:00 18:48	MD
RINSE	1	JLC27A	3/27/2018	6:52:00 18:52	MD
CCV	1	JLC27A	3/27/2018	6:57:00 18:57	MD
CCB	1	JLC27A	3/27/2018	7:01:00 19:01	MD
SL2500-026	5	JLC27A	3/27/2018	7:05:00 19:05	MD
SL2500-027	5	JLC27A	3/27/2018	7:09:00 19:09	MD
SL2500-028	5	JLC27A	3/27/2018	7:14:00 19:14	MD
SL2500-029	5	JLC27A	3/27/2018	7:18:00 19:18	MD
SL2500-030	5	JLC27A	3/27/2018	7:22:00 19:22	MD
SL2500-031	5	JLC27A	3/27/2018	7:27:00 19:27	MD
SL2500-032	5	JLC27A	3/27/2018	7:31:00 19:31	MD
SL2500-033	5	JLC27A	3/27/2018	7:35:00 19:35	MD
SL2500-034	5	JLC27A	3/27/2018	7:40:00 19:40	MD
RINSE	1	JLC27A	3/27/2018	7:44:00 19:44	MD
CCV	1	JLC27A	3/27/2018	7:48:00 19:48	MD
CCB	1	JLC27A	3/27/2018	7:52:00 19:52	MD
SL2500-035	5	JLC27A	3/27/2018	7:57:00 19:57	MD
SL2500-036	5	JLC27A	3/27/2018	8:01:00 20:01	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2500-037	5	JLC27A	3/27/2018	8:05:00 20:05	MD
SL2500-038	5	JLC27A	3/27/2018	8:10:00 20:10	MD
SL2500-039	5	JLC27A	3/27/2018	8:14:00 20:14	MD
RINSE	1	JLC27A	3/27/2018	8:18:00 20:18	MD
PBSLC27IMS3	5	JLC27A	3/27/2018	8:22:00 20:22	MD
LCSOLC27IMS3	5	JLC27A	3/27/2018	8:27:00 20:27	MD
SL2444-001	5	JLC27A	3/27/2018	8:31:00 20:31	MD
RINSE	1	JLC27A	3/27/2018	8:35:00 20:35	MD
CCV	1	JLC27A	3/27/2018	8:40:00 20:40	MD
CCB	1	JLC27A	3/27/2018	8:44:00 20:44	MD
SL2500-040	5	JLC27A	3/27/2018	8:48:00 20:48	MD
SL2500-041	5	JLC27A	3/27/2018	8:52:00 20:52	MD
SL2500-042	5	JLC27A	3/27/2018	8:57:00 20:57	MD
SL2500-042L	25	JLC27A	3/27/2018	9:01:00 21:01	MD
SL2500-042A	5	JLC27A	3/27/2018	9:05:00 21:05	MD
SL2500-042S	5	JLC27A	3/27/2018	9:10:00 21:10	MD
SL2500-042P	5	JLC27A	3/27/2018	9:14:00 21:14	MD
SL2500-043	5	JLC27A	3/27/2018	9:18:00 21:18	MD
SL2500-044	5	JLC27A	3/27/2018	9:22:00 21:22	MD
RINSE	1	JLC27A	3/27/2018	9:27:00 21:27	MD
CCV	1	JLC27A	3/27/2018	9:31:00 21:31	MD
CCB	1	JLC27A	3/27/2018	9:35:00 21:35	MD
SL2500-045	5	JLC27A	3/27/2018	9:40:00 21:40	MD
SL2500-046	5	JLC27A	3/27/2018	9:44:00 21:44	MD
SL2500-047	5	JLC27A	3/27/2018	9:48:00 21:48	MD
SL2500-048	5	JLC27A	3/27/2018	9:52:00 21:52	MD
SL2500-049	5	JLC27A	3/27/2018	9:56:00 21:56	MD
SL2500-050	5	JLC27A	3/27/2018	10:01:0 22:01	MD
SL2500-051	5	JLC27A	3/27/2018	10:05:0 22:05	MD
RINSE	1	JLC27A	3/27/2018	10:09:0 22:09	MD
RINSE	1	JLC27A	3/27/2018	10:13:0 22:13	MD
CCV	1	JLC27A	3/27/2018	10:18:0 22:18	MD
CCB	1	JLC27A	3/27/2018	10:22:0 22:22	MD
PQL	1	JLC27A	3/27/2018	10:26:0 22:26	MD
CCV	1	JLC27A	3/27/2018	10:31:0 22:31	MD
CCB	1	JLC27A	3/27/2018	10:35:0 22:35	MD

ICV ✓ ICB ✓ PQL Sewn(1-29) ICSA ✓ ICSAB ✓ LRS1 ✓ LRS2 ✓ CCV ✓ CCB ✓

C:\ICPCHEM\1\SEQUENCE\JLC27A.S - SMPL 3/27/2018 12:47 PM

	Method	Type	Vial	Sample	Comment	Dil/Lvl	Action on Failure	Skip	LC/GC Vial
1	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2101	SL2287-001	DW	1.000	NextSmpl		
2	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2102	SL2394-001	DW	1.000	NextSmpl		
3	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2103	SL2395-001	DW	1.000	NextSmpl		
4	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2104	SL2396-001	DW	1.000	NextSmpl		
5	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2105	SL2443-001	DW	1.000	NextSmpl		
6	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2106	SL2465-001	DW	1.000	NextSmpl		
7	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2107	SL2466-001	DW	1.000	NextSmpl		
8	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2108	SL2482-001	DW	1.000	NextSmpl		
9	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2109	SL2079-002		5.000	NextSmpl		
10	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2110	SL2079-002	don't need Li,SC↑	10.00	NextSmpl		
11	C:\ICPCHEM\1\METHODS\1PTCALGe.M	6-CCV	1206	CCV ✓		1.000	NextSmpl		
12	C:\ICPCHEM\1\METHODS\1PTCALGe.M	6-CCB	1207	CCB ✓		1.000	NextSmpl		
13	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2111	PBSLC27IMS1		5.000	NextSmpl		
14	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2112	LCSOLC27IMS1		5.000	NextSmpl		
15	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2201	SL2500-001		5.000	NextSmpl		
16	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2202	SL2500-002		5.000	NextSmpl		
17	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2203	SL2500-003	Li↑	5.000	NextSmpl		
18	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2204	SL2500-004		5.000	NextSmpl		
19	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2205	SL2500-005		5.000	NextSmpl		
20	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2206	SL2500-006		5.000	NextSmpl		
21	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2207	SL2500-007	Li↑	5.000	NextSmpl		
22	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2208	RINSE		1.000	NextSmpl		
23	C:\ICPCHEM\1\METHODS\1PTCALGe.M	6-CCV	1206	CCV ✓		1.000	NextSmpl		
24	C:\ICPCHEM\1\METHODS\1PTCALGe.M	6-CCB	1207	CCB ✓		1.000	NextSmpl		
25	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2209	SL2500-007L		25.00	NextSmpl		
26	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2210	SL2500-007A	Li↑	5.000	NextSmpl		
27	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2211	SL2500-007S		5.000	NextSmpl		
28	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2212	SL2500-007P	SC↑	5.000	NextSmpl		
29	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2301	SL2500-008	Li,SC,GC↑	5.000	NextSmpl		
30	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2302	SL2500-009		5.000	NextSmpl		
31	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2303	SL2500-010		5.000	NextSmpl		
32	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2304	SL2500-011		5.000	NextSmpl		
33	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2305	SL2500-012		5.000	NextSmpl		
34	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2306	RINSE		1.000	NextSmpl		
35	C:\ICPCHEM\1\METHODS\1PTCALGe.M	6-CCV	1206	CCV ✓		1.000	NextSmpl		
36	C:\ICPCHEM\1\METHODS\1PTCALGe.M	6-CCB	1207	CCB ✓		1.000	NextSmpl		
37	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2307	SL2500-013		5.000	NextSmpl		
38	C:\ICPCHEM\1\METHODS\1PTCALGe.M	Sample	2308	SL2500-014		5.000	NextSmpl		

6020 1317
200.8 1320

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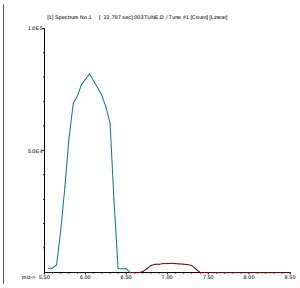
6020 QC Tune Report

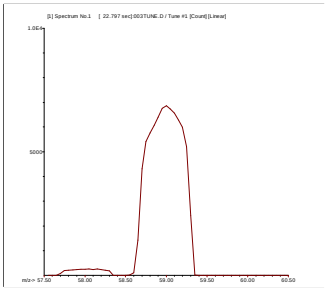
Data File: C:\ICPCHEM\1\DATA\JLC27A.B\003TUNE.D
Date Acquired: Mar 27 2018 01:17 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

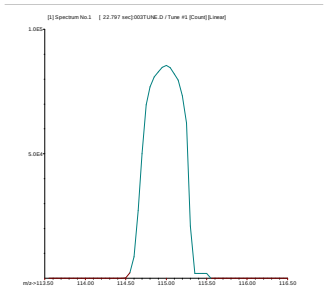
Element	Actual	Required	Flag
7 Li	2.60	5.00	
59 Co	1.01	5.00	
115 In	0.93	5.00	
205 Tl	1.03	5.00	



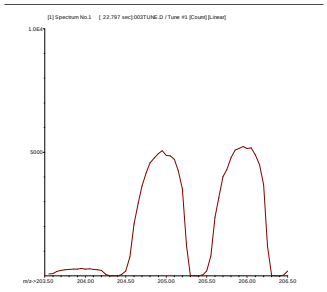
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



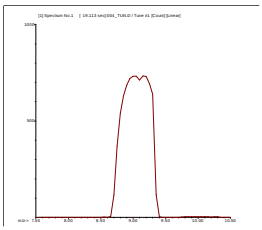
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

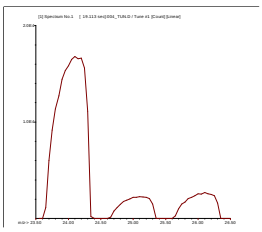
Data File: C:\ICPCHEM\1\DATA\JLC27A.B\004_TUN.D
Date Acquired: Mar 27 2018 01:20 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

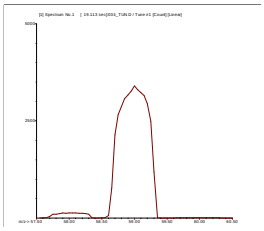
Element	Actual	Required	Flag
9 Be	2.84	5.00	
24 Mg	0.67	5.00	
59 Co	1.75	5.00	
115 In	1.85	5.00	
208 Pb	1.83	5.00	



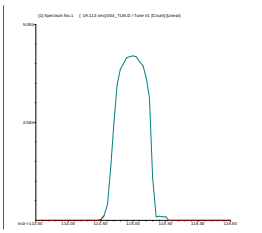
9 Be
Mass Calib.
Actual: 9.10
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



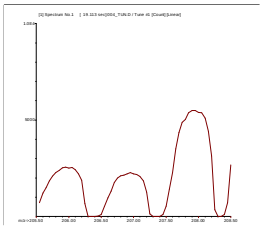
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000381

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.I
Date Acquired: Mar 27 2018 02:06 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 27 2018 02:08 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2503575.00	A	43180.00	1.72
9	Be	17.78	P	11.60	65.25
11	B	308.90	P	49.48	16.02
23	Na	106570.10	M	92140.00	86.46
25	Mg	965.63	P	1004.00	103.97
27	Al	5579.23	P	5621.00	100.75
28	Si	5264590.00	A	103700.00	1.97
29	Si	318040.09	P	4113.00	1.29
39	K	961725.31	A	19330.00	2.01
43	Ca	222.25	P	86.80	39.06
44	Ca	9535.17	P	966.10	10.13
45	Sc	2335221.00	A	13350.00	0.57
51	V	1337.74	P	288.50	21.57
52	Cr	5407.84	P	108.80	2.01
53	Cr	3890.64	P	113.40	2.91
55	Mn	1644.79	P	516.90	31.43
56	Fe	1292730.00	A	13000.00	1.01
57	Fe	13104.22	P	206.80	1.58
59	Co	228.93	P	165.70	72.38
60	Ni	80.17	P	14.96	18.66
63	Cu	366.69	P	76.24	20.79
65	Cu	151.11	P	38.63	25.57
66	Zn	621.14	P	50.04	8.06
68	Zn	2232.46	P	101.30	4.54
72	Ge	440447.09	P	5298.00	1.20
75	As	-75.72	P	50.34	66.48
82	Se	-22.20	P	2.51	11.29
88	Sr	407.66	P	485.00	118.97
89	Y	2948264.00	A	53400.00	1.81
98	Mo	46.81	P	37.44	79.99
107	Ag	34.45	P	20.37	59.14
109	Ag	21.11	P	13.88	65.75
111	Cd	729.31	P	36.96	5.07
114	Cd	3.61	P	16.58	459.47
115	In	2664092.00	A	50190.00	1.88
118	Sn	378.91	P	10.72	2.83
120	Sn	564.48	P	8.39	1.49
121	Sb	60.00	P	46.19	76.98
123	Sb	71.12	P	63.11	88.74
135	Ba	23.33	P	14.53	62.27
137	Ba	44.45	P	39.49	88.85
159	Tb	3080666.00	A	21750.00	0.71
182	W	50.00	P	12.02	24.04
203	Tl	81.12	P	43.51	53.64
205	Tl	177.80	P	75.62	42.53
208	Pb	424.49	P	256.80	60.50
209	Bi	1728094.00	A	1710.00	0.10
232	Th	36.67	P	34.81	94.93
238	U	112.27	P	168.70	150.27

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\018CALI.D\018CALI.D#
Date Acquired: Mar 27 2018 02:10 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 27 2018 02:09 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2740788.00	A	44930.00	1.64
9 Be	90351.83	P	963.40	1.07
11 B	49154.89	P	2979.00	6.06
23 Na	60563072.00	A	652300.00	1.08
25 Mg	5137738.00	A	55670.00	1.08
27 Al	4961519.00	A	40190.00	0.81
28 Si	8040106.00	A	41180.00	0.51
29 Si	467816.31	P	1588.00	0.34
39 K	68778240.00	A	820800.00	1.19
43 Ca	122925.40	P	1617.00	1.32
44 Ca	2012072.00	A	20910.00	1.04
45 Sc	2543297.00	A	27080.00	1.06
51 V	429782.69	P	2530.00	0.59
52 Cr	370014.81	P	4883.00	1.32
53 Cr	46942.42	P	286.20	0.61
55 Mn	462120.81	P	2436.00	0.53
56 Fe	75042680.00	A	463400.00	0.62
57 Fe	1826602.00	A	4395.00	0.24
59 Co	393567.91	P	6644.00	1.69
60 Ni	87015.93	P	1513.00	1.74
63 Cu	201912.50	P	1136.00	0.56
65 Cu	94566.40	P	1683.00	1.78
66 Zn	48357.52	P	786.10	1.63
68 Zn	35252.22	P	72.34	0.21
72 Ge	471021.00	P	3564.00	0.76
75 As	46320.31	P	499.70	1.08
82 Se	3140.65	P	29.29	0.93
88 Sr	465537.59	P	8409.00	1.81
89 Y	3206636.00	A	8305.00	0.26
98 Mo	147386.30	P	1558.00	1.06
107 Ag	226236.00	P	2402.00	1.06
109 Ag	214391.50	P	2186.00	1.02
111 Cd	44039.17	P	516.00	1.17
114 Cd	94591.64	P	1193.00	1.26
115 In	2885975.00	A	51920.00	1.80
118 Sn	129959.00	P	1278.00	0.98
120 Sn	178435.50	P	2135.00	1.20
121 Sb	165479.70	P	2624.00	1.59
123 Sb	123853.00	P	1224.00	0.99
135 Ba	37347.54	P	739.40	1.98
137 Ba	64646.98	P	1248.00	1.93
159 Tb	3375266.00	A	42180.00	1.25
182 W	133914.59	P	1298.00	0.97
203 Tl	118952.20	P	1833.00	1.54
205 Tl	283116.69	P	1631.00	0.58
208 Pb	389896.69	P	1698.00	0.44
209 Bi	1839990.00	A	13530.00	0.74
232 Th	460536.00	P	5656.00	1.23
238 U	446075.59	P	4353.00	0.98

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2740788.30	1.64	2503575.30	109.5	79.5 - 120.4	
45 Sc	2543297.00	1.06	2335220.50	108.9	79.5 - 120.4	
72 Ge	471020.97	0.76	440447.13	106.9	79.5 - 120.4	
159 Tb	3375266.50	1.25	3080665.80	109.6	79.5 - 120.4	
209 Bi	1839990.10	0.74	1728094.30	106.5	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000383

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\019_ICV.D\019_ICV.D#
Date Acquired: Mar 27 2018 02:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.68	ppb	0.63	20	98.4	
11 B	20.34	ppb	1.99	20	101.7	
23 Na	3,844.	ppb	0.95	4,000	96.1	
25 Mg	3,980.	ppb	1.53	4,000	99.5	
27 Al	404.	ppb	1.95	400	101	
28 Si	267.8	ppb	32.34	400	66.95	
29 Si	274.5	ppb	23.46	400	68.625	Fail
39 K	3,887.	ppb	2.36	4,000	97.175	
43 Ca	3,972.	ppb	3.08	4,000	99.3	
44 Ca	4,023.	ppb	0.62	4,000	100.575	
51 V	19.29	ppb	0.58	20	96.45	
52 Cr	19.34	ppb	1.04	20	96.7	
53 Cr	18.89	ppb	2.98	20	94.45	
55 Mn	19.47	ppb	0.68	20	97.35	
56 Fe	3,914.	ppb	0.72	4,000	97.85	
57 Fe	3,991.	ppb	2.29	4,000	99.775	
59 Co	19.42	ppb	0.70	20	97.1	
60 Ni	19.47	ppb	0.51	20	97.35	
63 Cu	19.59	ppb	0.48	20	97.95	
65 Cu	19.74	ppb	1.26	20	98.7	
66 Zn	19.81	ppb	0.95	20	99.05	
68 Zn	20.01	ppb	3.52	20	100.05	
75 As	19.85	ppb	1.48	20	99.25	
82 Se	20.1	ppb	1.08	20	100.5	
88 Sr	19.28	ppb	0.33	20	96.4	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.36	ppb	0.65	40	95.9	
107 Ag	19.55	ppb	1.19	20	97.75	
109 Ag	19.76	ppb	1.43	20	98.8	
111 Cd	19.87	ppb	1.39	20	99.35	
114 Cd	19.91	ppb	0.26	20	99.55	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.63	ppb	0.16	20	98.15	
120 Sn	19.57	ppb	1.18	20	97.85	
121 Sb	19.56	ppb	1.12	20	97.8	
123 Sb	19.72	ppb	0.68	20	98.6	
135 Ba	19.56	ppb	2.25	20	97.8	
137 Ba	19.43	ppb	1.21	20	97.15	
182 W	19.69	ppb	0.75	20	98.45	
203 Tl	20.17	ppb	1.88	20	100.85	
205 Tl	20.08	ppb	2.81	20	100.4	
208 Pb	19.71	ppb	1.26	20	98.55	
232 Th	19.37	ppb	1.25	20	96.85	
238 U	19.55	ppb	2.31	20	97.75	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2697918.00	0.61	2503575.30	107.8	80 - 120.4	
45 Sc	2533700.50	1.78	2335220.50	108.5	80 - 120.4	
72 Ge	469129.47	0.81	440447.13	106.5	80 - 120.4	
159 Tb	3306649.50	0.99	3080665.80	107.3	80 - 120.4	
209 Bi	1840242.30	0.81	1728094.30	106.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000384

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\020_ICB.D\020_ICB.D#
Date Acquired: Mar 27 2018 02:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0031	ppb	117.84	1.00	
11 B	0.8304	ppb	17.51	1.00	
23 Na	-9.854	ppb	3.48	1.00	
25 Mg	-1.312	ppb	4.18	1.00	
27 Al	-0.7242	ppb	2.04	1.00	
28 Si	63.11	ppb	182.54	1.00	
29 Si	28.24	ppb	119.76	1.00	
39 K	-0.1745	ppb	951.86	1.00	
43 Ca	-2.176	ppb	189.43	1.00	
44 Ca	-2.668	ppb	15.97	1.00	
51 V	0.0184	ppb	222.17	1.00	
52 Cr	0.0037	ppb	641.77	1.00	
53 Cr	-0.425	ppb	11.13	1.00	
55 Mn	-0.0198	ppb	64.95	1.00	
56 Fe	-1.434	ppb	129.99	1.00	
57 Fe	-0.6141	ppb	87.84	1.00	
59 Co	-0.0115	ppb	22.26	1.00	
60 Ni	-0.0057	ppb	230.88	1.00	
63 Cu	-0.02	ppb	47.88	1.00	
65 Cu	-0.0046	ppb	209.74	1.00	
66 Zn	-0.0304	ppb	60.52	1.00	
68 Zn	-0.1997	ppb	60.34	1.00	
75 As	0.1449	ppb	121.67	1.00	
82 Se	0.347	ppb	24.50	1.00	
88 Sr	-0.0306	ppb	15.85	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0219	ppb	33.61	1.00	
107 Ag	-0.0018	ppb	153.39	1.00	
109 Ag	-0.0025	ppb	17.79	1.00	
111 Cd	-0.0068	ppb	301.43	1.00	
114 Cd	-0.0035	ppb	139.45	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0452	ppb	31.95	1.00	
120 Sn	0.0228	ppb	30.78	1.00	
121 Sb	-0.0094	ppb	18.43	1.00	
123 Sb	-0.0145	ppb	17.03	1.00	
135 Ba	-0.0112	ppb	64.51	1.00	
137 Ba	-0.0175	ppb	50.29	1.00	
182 W	0.0218	ppb	53.84	1.00	
203 Tl	-0.0066	ppb	73.79	1.00	
205 Tl	-0.0049	ppb	5.22	1.00	
208 Pb	-0.0252	ppb	6.60	1.00	
232 Th	0.0093	ppb	24.42	1.00	
238 U	-0.008	ppb	13.14	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2444167.00	0.43	2503575.30	97.6	79.5 - 120	
45 Sc	2323999.00	0.72	2335220.50	99.5	79.5 - 120	
72 Ge	436189.75	1.59	440447.13	99.0	79.5 - 120	
159 Tb	3059532.80	1.73	3080665.80	99.3	79.5 - 120	
209 Bi	1707705.60	1.40	1728094.30	98.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000385

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\021_PQL.D\021_PQL.D#
Date Acquired: Mar 27 2018 02:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2183	ppb	3.12	0.20	109.15	
11 B	4.689	ppb	5.46	4.00	117.225	
23 Na	203.7	ppb	5.79	200.00	101.85	
25 Mg	20.14	ppb	7.42	20.00	100.7	
27 Al	19.44	ppb	2.99	20.00	97.2	
28 Si	28.01	ppb	469.48	100.00	28.01	
29 Si	67.26	ppb	86.01	100.00	67.26	Fail
39 K	194.4	ppb	2.39	200.00	97.2	
43 Ca	18.1	ppb	35.37	20.00	90.5	
44 Ca	18.99	ppb	20.85	20.00	94.95	
51 V	1.003	ppb	2.94	1.00	100.3	
52 Cr	0.9639	ppb	1.16	1.00	96.39	
53 Cr	0.7434	ppb	9.13	---	#VALUE!	
55 Mn	0.4072	ppb	8.96	0.40	101.8	
56 Fe	13.9	ppb	35.55	20.00	69.5	
57 Fe	19.97	ppb	9.20	20.00	99.85	
59 Co	0.2046	ppb	12.13	0.20	102.3	
60 Ni	0.407	ppb	8.30	0.40	101.75	
63 Cu	0.6193	ppb	2.80	0.60	103.217	
65 Cu	0.6191	ppb	5.56	0.60	103.183	
66 Zn	2.215	ppb	3.12	2.00	110.75	
68 Zn	1.909	ppb	12.14	2.00	95.45	
75 As	0.8403	ppb	37.08	1.00	84.03	
82 Se	1.29	ppb	18.84	1.00	129	Fail-DoD
88 Sr	0.9176	ppb	1.80	1.00	91.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9785	ppb	5.17	1.00	97.85	
107 Ag	0.1934	ppb	9.68	0.20	96.7	
109 Ag	0.1988	ppb	2.23	0.20	99.4	
111 Cd	0.1847	ppb	23.55	0.20	92.35	
114 Cd	0.195	ppb	5.43	0.20	97.5	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.049	ppb	0.12	1.00	104.9	
120 Sn	1.046	ppb	1.10	1.00	104.6	
121 Sb	0.1913	ppb	4.30	0.20	95.65	
123 Sb	0.191	ppb	30.91	0.20	95.5	
135 Ba	0.3721	ppb	15.29	0.40	93.025	
137 Ba	0.391	ppb	2.51	0.40	97.75	
182 W	1.008	ppb	3.23	1.00	100.8	
203 Tl	0.2103	ppb	6.43	0.20	105.15	
205 Tl	0.1924	ppb	16.29	0.20	96.2	
208 Pb	0.1912	ppb	10.95	0.20	95.6	
232 Th	0.2033	ppb	2.88	0.20	101.65	
238 U	0.2017	ppb	7.44	0.20	100.85	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2602650.50	2.90	2503575.30	104.0	80 - 120.4	
45 Sc	2418052.30	2.03	2335220.50	103.5	80 - 120.4	
72 Ge	451175.81	2.05	440447.13	102.4	80 - 120.4	
159 Tb	3122497.80	2.44	3080665.80	101.4	80 - 120.4	
209 Bi	1746850.00	1.48	1728094.30	101.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000386

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\022SMPL.D\022SMPL.D#
Date Acquired: Mar 27 2018 02:24 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0032	0.0032	ppb	104.38	100.	
11 B	0.4684	0.4684	ppb	10.82	1000.	
23 Na	-3.079	-3.079	ppb	373.50	200000.	
25 Mg	-0.3135	-0.3135	ppb	511.32	200000.	
27 Al	-0.1884	-0.1884	ppb	466.45	200000.	
28 Si	91.62	91.62	ppb	112.31	#VALUE!	
29 Si	90.11	90.11	ppb	74.29	10000.	
39 K	3.044	3.044	ppb	100.03	200000.	
43 Ca	-1.593	-1.593	ppb	207.72	#VALUE!	
44 Ca	2.408	2.408	ppb	196.68	200000.	
51 V	0.0608	0.0608	ppb	61.67	1000.	
52 Cr	-0.006	-0.006	ppb	380.71	2000.	
53 Cr	-0.3391	-0.3391	ppb	46.30	#VALUE!	
55 Mn	-0.0027	-0.0027	ppb	1229.10	2000.	
56 Fe	0.7904	0.7904	ppb	417.64	#VALUE!	
57 Fe	-2.628	-2.628	ppb	111.99	100000.	
59 Co	0.	0.	ppb	40818.00	1000.	
60 Ni	0.0008	0.0008	ppb	1261.60	1000.	
63 Cu	-0.0083	-0.0083	ppb	148.25	#VALUE!	
65 Cu	0.002	0.002	ppb	650.66	2000.	
66 Zn	0.0032	0.0032	ppb	2633.90	2000.	
68 Zn	0.014	0.014	ppb	1204.00	#VALUE!	
75 As	0.0238	0.0238	ppb	502.10	1000.	
82 Se	0.2522	0.2522	ppb	54.32	1000.	
88 Sr	-0.021	-0.021	ppb	115.55	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	-0.0016	-0.0016	ppb	256.07	1000.	
107 Ag	-0.0017	-0.0017	ppb	162.97	100.	
109 Ag	-0.0007	-0.0007	ppb	293.27	#VALUE!	
111 Cd	-0.0357	-0.0357	ppb	159.94	#VALUE!	
114 Cd	0.002	0.002	ppb	239.97	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0455	0.0455	ppb	65.01	1000.	
120 Sn	0.0298	0.0298	ppb	39.45	#VALUE!	
121 Sb	-0.0013	-0.0013	ppb	1146.50	#VALUE!	
123 Sb	-0.0097	-0.0097	ppb	160.72	1000.	
135 Ba	-0.0041	-0.0041	ppb	256.62	2000.	
137 Ba	-0.0162	-0.0162	ppb	137.04	#VALUE!	
182 W	-0.002	-0.002	ppb	256.13	1000.	
203 Tl	-0.0058	-0.0058	ppb	347.25	1000.	
205 Tl	-0.0016	-0.0016	ppb	757.87	#VALUE!	
208 Pb	-0.0126	-0.0126	ppb	178.64	2000.	
232 Th	0.0037	0.0037	ppb	84.15	1000.	
238 U	-0.0045	-0.0045	ppb	285.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2458490.30	0.51	2503575.30	98.2	69.5 - 120	
45 Sc	2286094.00	1.20	2335220.50	97.9	69.5 - 120	
72 Ge	433897.84	1.55	440447.13	98.5	69.5 - 120	
159 Tb	3026586.50	2.75	3080665.80	98.2	69.5 - 120	
209 Bi	1701058.60	1.59	1728094.30	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000387

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\023ICSA.D\023ICSA.D#
Date Acquired: Mar 27 2018 02:28 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0015	ppb	225.66		
11 B	0.6746	ppb	8.85		
23 Na	95,720.	ppb	2.41		
25 Mg	94,440.	ppb	1.39		
27 Al	96,500.	ppb	1.75		
28 Si	-200.2	ppb	30.82		
29 Si	-266.6	ppb	6.97		
39 K	98,410.	ppb	0.99		
43 Ca	101,800.	ppb	0.71		
44 Ca	96,750.	ppb	0.74		
51 V	0.2016	ppb	29.43		
52 Cr	0.8191	ppb	4.66		
53 Cr	-0.2267	ppb	29.88		
55 Mn	0.2873	ppb	7.43		
56 Fe	93,310.	ppb	0.48		
57 Fe	90,520.	ppb	0.77		
59 Co	0.0833	ppb	10.68		
60 Ni	-0.1476	ppb	56.29		
63 Cu	3.069	ppb	0.97		
65 Cu	0.935	ppb	4.16		
66 Zn	2.269	ppb	5.69		
68 Zn	-0.0427	ppb	335.75		
75 As	0.4209	ppb	38.06		
82 Se	0.2249	ppb	14.33		
88 Sr	0.8764	ppb	2.56		
89 Y	--------	---	--------		
98 Mo	1,863.	ppb	1.20		
107 Ag	0.0234	ppb	14.53		
109 Ag	0.028	ppb	16.82		
111 Cd	0.0323	ppb	112.16		
114 Cd	0.0598	ppb	81.36		
115 In	--------	---	--------		
118 Sn	0.0723	ppb	10.99		
120 Sn	0.062	ppb	45.11		
121 Sb	0.0501	ppb	9.70		
123 Sb	0.0349	ppb	27.54		
135 Ba	0.0818	ppb	3.21		
137 Ba	0.0659	ppb	13.94		
182 W	0.2328	ppb	4.86		
203 Tl	-0.0131	ppb	49.80		
205 Tl	-0.0125	ppb	30.16		
208 Pb	0.0683	ppb	17.14		
232 Th	0.0083	ppb	70.56		
238 U	-0.0101	ppb	19.82		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2579114.30	0.49	2503575.30	103.0	69.5 - 120.4	
45 Sc	2547641.30	0.83	2335220.50	109.1	69.5 - 120.4	
72 Ge	484524.19	0.72	440447.13	110.0	69.5 - 120.4	
159 Tb	3336466.50	1.30	3080665.80	108.3	69.5 - 120.4	
209 Bi	1705088.90	1.24	1728094.30	98.7	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000388

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\024ICSB.D\024ICSB.D#
Date Acquired: Mar 27 2018 02:32 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	21.79	ppb	0.50	20.00	79.5 - 120	
11 B	22.5	ppb	1.38	20.00	79.5 - 120	
23 Na	100,000.	ppb	1.62	#########	79.5 - 120	
25 Mg	99,060.	ppb	0.76	#########	79.5 - 120	
27 Al	100,500.	ppb	0.86	#########	79.5 - 120	
28 Si	434.2	ppb	5.26	---	##### - #####	
29 Si	311.6	ppb	2.31	---	##### - #####	
39 K	101,500.	ppb	0.75	#########	79.5 - 120	
43 Ca	106,000.	ppb	0.55	#########	79.5 - 120	
44 Ca	99,630.	ppb	0.87	#########	79.5 - 120	
51 V	20.7	ppb	0.67	20.00	79.5 - 120	
52 Cr	20.94	ppb	0.78	20.00	79.5 - 120	
53 Cr	20.87	ppb	2.75	---	##### - #####	
55 Mn	20.44	ppb	0.50	20.00	79.5 - 120	
56 Fe	97,440.	ppb	1.08	#########	79.5 - 120	
57 Fe	95,340.	ppb	1.04	#########	79.5 - 120	
59 Co	19.92	ppb	0.30	20.00	79.5 - 120	
60 Ni	19.14	ppb	0.31	20.00	79.5 - 120	
63 Cu	22.43	ppb	0.61	20.00	79.5 - 120	
65 Cu	20.06	ppb	0.78	20.00	79.5 - 120	
66 Zn	21.45	ppb	0.26	20.00	79.5 - 120	
68 Zn	19.66	ppb	2.42	20.00	79.5 - 120	
75 As	20.78	ppb	0.87	20.00	79.5 - 120	
82 Se	20.54	ppb	1.59	20.00	79.5 - 120	
88 Sr	21.41	ppb	1.62	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,964.	ppb	2.48	2000.00	79.5 - 120	
107 Ag	19.12	ppb	1.01	20.00	79.5 - 120	
109 Ag	19.37	ppb	1.97	20.00	79.5 - 120	
111 Cd	19.44	ppb	0.56	20.00	79.5 - 120	
114 Cd	19.56	ppb	0.88	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	21.07	ppb	1.40	20.00	79.5 - 120	
120 Sn	20.73	ppb	0.63	20.00	79.5 - 120	
121 Sb	20.91	ppb	0.32	20.00	79.5 - 120	
123 Sb	21.02	ppb	0.72	20.00	79.5 - 120	
135 Ba	21.43	ppb	1.80	20.00	79.5 - 120	
137 Ba	21.25	ppb	1.25	20.00	79.5 - 120	
182 W	21.47	ppb	0.37	20.00	79.5 - 120	
203 Tl	21.89	ppb	0.38	20.00	79.5 - 120	
205 Tl	22.05	ppb	0.49	20.00	79.5 - 120	
208 Pb	22.02	ppb	0.75	20.00	79.5 - 120	
232 Th	23.01	ppb	0.32	20.00	79.5 - 120	
238 U	22.78	ppb	0.50	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2605087.00	0.45	2503575.30	104.1	69.5 - 120	
45 Sc	2588078.80	0.46	2335220.50	110.8	69.5 - 120	
72 Ge	490536.81	0.60	440447.13	111.4	69.5 - 120	
159 Tb	3416258.50	0.69	3080665.80	110.9	69.5 - 120	
209 Bi	1745156.50	0.07	1728094.30	101.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000389

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 27 2018 02:36 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0002	-0.0002	ppb	1774.30	100.	
11 B	0.4422	0.4422	ppb	10.41	1000.	
23 Na	-2.546	-2.546	ppb	86.14	200000.	
25 Mg	5.013	5.013	ppb	48.14	200000.	
27 Al	5.231	5.231	ppb	38.08	200000.	
28 Si	-53.73	-53.73	ppb	184.12	#VALUE!	
29 Si	-154.2	-154.2	ppb	37.89	10000.	LOW
39 K	-2.137	-2.137	ppb	66.12	200000.	
43 Ca	5.071	5.071	ppb	96.25	#VALUE!	
44 Ca	2.138	2.138	ppb	135.92	200000.	
51 V	-0.0051	-0.0051	ppb	997.63	1000.	
52 Cr	0.018	0.018	ppb	63.62	2000.	
53 Cr	0.0486	0.0486	ppb	281.46	#VALUE!	
55 Mn	-0.0453	-0.0453	ppb	2.29	2000.	
56 Fe	1.678	1.678	ppb	238.74	#VALUE!	
57 Fe	0.042	0.042	ppb	10000.00	100000.	
59 Co	-0.0162	-0.0162	ppb	35.81	1000.	
60 Ni	0.0036	0.0036	ppb	143.07	1000.	
63 Cu	-0.0125	-0.0125	ppb	28.45	#VALUE!	
65 Cu	0.0011	0.0011	ppb	2160.60	2000.	
66 Zn	0.108	0.108	ppb	38.03	2000.	
68 Zn	-0.1453	-0.1453	ppb	55.91	#VALUE!	
75 As	-0.0256	-0.0256	ppb	538.88	1000.	
82 Se	-0.1098	-0.1098	ppb	251.64	1000.	
88 Sr	-0.0273	-0.0273	ppb	14.52	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.5178	0.5178	ppb	4.92	1000.	
107 Ag	-0.0016	-0.0016	ppb	194.42	100.	
109 Ag	-0.0016	-0.0016	ppb	55.94	#VALUE!	
111 Cd	-0.1017	-0.1017	ppb	42.35	#VALUE!	
114 Cd	-0.0026	-0.0026	ppb	46.58	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0108	0.0108	ppb	260.09	1000.	
120 Sn	0.0087	0.0087	ppb	141.04	#VALUE!	
121 Sb	-0.0062	-0.0062	ppb	72.36	#VALUE!	
123 Sb	-0.0098	-0.0098	ppb	42.02	1000.	
135 Ba	0.0024	0.0024	ppb	949.06	2000.	
137 Ba	-0.0011	-0.0011	ppb	1155.20	#VALUE!	
182 W	0.0029	0.0029	ppb	202.70	1000.	
203 Tl	-0.0109	-0.0109	ppb	29.18	1000.	
205 Tl	-0.0063	-0.0063	ppb	52.09	#VALUE!	
208 Pb	-0.0222	-0.0222	ppb	8.68	2000.	
232 Th	0.0031	0.0031	ppb	69.08	1000.	
238 U	-0.0085	-0.0085	ppb	5.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2388283.00	2.67	2503575.30	95.4	69.5 - 120	
45 Sc	2320042.00	1.39	2335220.50	99.4	69.5 - 120	
72 Ge	440054.34	2.37	440447.13	99.9	69.5 - 120	
159 Tb	3172756.30	1.99	3080665.80	103.0	69.5 - 120	
209 Bi	1756205.80	0.48	1728094.30	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000390

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 27 2018 02:39 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	103.1	103.1	ppb	2.18	100.	>LDR
11 B	518.1	518.1	ppb	2.91	1000.	
23 Na	-8.321	-8.321	ppb	4.35	200000.	
25 Mg	-0.0101	-0.0101	ppb	7393.00	200000.	
27 Al	0.5326	0.5326	ppb	124.60	200000.	
28 Si	-161.9	-161.9	ppb	41.30	#VALUE!	
29 Si	-256.7	-256.7	ppb	14.79	10000.	LOW
39 K	-11.55	-11.55	ppb	6.03	200000.	
43 Ca	1,445.	1,445.	ppb	1.36	#VALUE!	
44 Ca	121.1	121.1	ppb	11.91	200000.	
51 V	1,019.	1,019.	ppb	1.17	1000.	>LDR
52 Cr	2,020.	2,020.	ppb	1.18	2000.	>LDR
53 Cr	2,069.	2,069.	ppb	0.48	#VALUE!	
55 Mn	2,021.	2,021.	ppb	1.63	2000.	>LDR
56 Fe	-10.41	-10.41	ppb	32.14	#VALUE!	
57 Fe	-13.02	-13.02	ppb	12.98	100000.	
59 Co	1,003.	1,003.	ppb	1.49	1000.	>LDR
60 Ni	1,019.	1,019.	ppb	1.16	1000.	>LDR
63 Cu	2,021.	2,021.	ppb	0.67	#VALUE!	
65 Cu	2,042.	2,042.	ppb	1.32	2000.	>LDR
66 Zn	2,060.	2,060.	ppb	1.73	2000.	>LDR
68 Zn	2,164.	2,164.	ppb	1.66	#VALUE!	
75 As	1,047.	1,047.	ppb	1.07	1000.	>LDR
82 Se	1,063.	1,063.	ppb	0.70	1000.	>LDR
88 Sr	2,032.	2,032.	ppb	2.36	2000.	>LDR
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,039.	1,039.	ppb	1.35	1000.	>LDR
107 Ag	106.7	106.7	ppb	0.98	100.	>LDR
109 Ag	107.7	107.7	ppb	0.59	#VALUE!	
111 Cd	1,077.	1,077.	ppb	1.30	#VALUE!	
114 Cd	1,062.	1,062.	ppb	2.58	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,025.	1,025.	ppb	0.81	1000.	>LDR
120 Sn	1,006.	1,006.	ppb	0.56	#VALUE!	
121 Sb	1,012.	1,012.	ppb	1.53	#VALUE!	
123 Sb	1,029.	1,029.	ppb	0.99	1000.	>LDR
135 Ba	2,088.	2,088.	ppb	1.37	2000.	>LDR
137 Ba	2,063.	2,063.	ppb	1.08	#VALUE!	
182 W	1,014.	1,014.	ppb	1.36	1000.	>LDR
203 Tl	1,001.	1,001.	ppb	1.15	1000.	>LDR
205 Tl	982.8	982.8	ppb	1.33	#VALUE!	
208 Pb	2,012.	2,012.	ppb	1.81	2000.	>LDR
232 Th	970.	970.	ppb	2.56	1000.	
238 U	971.1	971.1	ppb	1.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2508399.80	1.49	2503575.30	100.2	69.5 - 120	
45 Sc	2395993.50	0.66	2335220.50	102.6	69.5 - 120	
72 Ge	447219.97	1.78	440447.13	101.5	69.5 - 120	
159 Tb	3265626.00	0.82	3080665.80	106.0	69.5 - 120	
209 Bi	1828069.10	1.25	1728094.30	105.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

20 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000391

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 27 2018 02:43 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0156	0.0156	ppb	2.98	100.	
11 B	7.057	7.057	ppb	17.93	1000.	
23 Na	192,500.	192,500.	ppb	1.52	200000.	
25 Mg	187,400.	187,400.	ppb	1.80	200000.	
27 Al	192,500.	192,500.	ppb	1.64	200000.	
28 Si	12,080.	12,080.	ppb	1.81	#VALUE!	
29 Si	12,940.	12,940.	ppb	1.03	10000.	>LDR
39 K	195,100.	195,100.	ppb	2.07	200000.	
43 Ca	198,100.	198,100.	ppb	1.66	#VALUE!	
44 Ca	190,300.	190,300.	ppb	1.57	200000.	
51 V	0.1894	0.1894	ppb	3.76	1000.	
52 Cr	2.948	2.948	ppb	2.76	2000.	
53 Cr	1.388	1.388	ppb	4.57	#VALUE!	
55 Mn	7.373	7.373	ppb	1.62	2000.	
56 Fe	95,560.	95,560.	ppb	1.24	#VALUE!	
57 Fe	93,370.	93,370.	ppb	0.82	100000.	
59 Co	2.706	2.706	ppb	2.35	1000.	
60 Ni	3.127	3.127	ppb	1.10	1000.	
63 Cu	8.184	8.184	ppb	1.28	#VALUE!	
65 Cu	2.627	2.627	ppb	3.67	2000.	
66 Zn	2.889	2.889	ppb	4.70	2000.	
68 Zn	0.7375	0.7375	ppb	14.45	#VALUE!	
75 As	0.7294	0.7294	ppb	18.40	1000.	
82 Se	0.2652	0.2652	ppb	52.53	1000.	
88 Sr	6.503	6.503	ppb	2.04	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.6054	0.6054	ppb	7.34	1000.	
107 Ag	0.353	0.353	ppb	1.86	100.	
109 Ag	0.3384	0.3384	ppb	4.34	#VALUE!	
111 Cd	-0.0672	-0.0672	ppb	23.81	#VALUE!	
114 Cd	0.	0.	ppb	12623.00	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.2619	0.2619	ppb	2.12	1000.	
120 Sn	0.2347	0.2347	ppb	0.25	#VALUE!	
121 Sb	0.1159	0.1159	ppb	12.25	#VALUE!	
123 Sb	0.1057	0.1057	ppb	32.05	1000.	
135 Ba	0.2104	0.2104	ppb	7.41	2000.	
137 Ba	0.2356	0.2356	ppb	6.23	#VALUE!	
182 W	0.436	0.436	ppb	3.10	1000.	
203 Tl	0.0545	0.0545	ppb	45.14	1000.	
205 Tl	0.0521	0.0521	ppb	46.05	#VALUE!	
208 Pb	0.4639	0.4639	ppb	3.04	2000.	
232 Th	0.2509	0.2509	ppb	29.75	1000.	
238 U	0.1297	0.1297	ppb	16.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2565800.50	0.80	2503575.30	102.5	69.5 - 120	
45 Sc	2570037.50	1.70	2335220.50	110.1	69.5 - 120	
72 Ge	470625.44	0.45	440447.13	106.9	69.5 - 120	
159 Tb	3164393.50	1.57	3080665.80	102.7	69.5 - 120	
209 Bi	1570065.90	1.06	1728094.30	90.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000392

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\028SMPL.D\028SMPL.D#
Date Acquired: Mar 27 2018 02:46 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	684.92	100.	
11 B	3.925	3.925	ppb	10.63	1000.	
23 Na	-2.889	-2.889	ppb	46.76	200000.	
25 Mg	0.5755	0.5755	ppb	116.82	200000.	
27 Al	0.7074	0.7074	ppb	67.16	200000.	
28 Si	50.85	50.85	ppb	121.53	#VALUE!	
29 Si	-91.37	-91.37	ppb	32.79	10000.	
39 K	-2.152	-2.152	ppb	35.12	200000.	
43 Ca	6.845	6.845	ppb	60.02	#VALUE!	
44 Ca	-2.3	-2.3	ppb	51.65	200000.	
51 V	-0.0186	-0.0186	ppb	250.32	1000.	
52 Cr	-0.0022	-0.0022	ppb	1276.60	2000.	
53 Cr	0.3368	0.3368	ppb	66.45	#VALUE!	
55 Mn	-0.0395	-0.0395	ppb	17.35	2000.	
56 Fe	-2.571	-2.571	ppb	170.36	#VALUE!	
57 Fe	-3.882	-3.882	ppb	57.08	100000.	
59 Co	-0.0096	-0.0096	ppb	22.49	1000.	
60 Ni	0.0101	0.0101	ppb	97.90	1000.	
63 Cu	-0.0057	-0.0057	ppb	167.99	#VALUE!	
65 Cu	0.0131	0.0131	ppb	53.80	2000.	
66 Zn	0.1498	0.1498	ppb	27.80	2000.	
68 Zn	-0.0844	-0.0844	ppb	228.47	#VALUE!	
75 As	0.0082	0.0082	ppb	1576.00	1000.	
82 Se	0.0941	0.0941	ppb	178.17	1000.	
88 Sr	-0.0295	-0.0295	ppb	8.79	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0756	0.0756	ppb	32.01	1000.	
107 Ag	-0.0023	-0.0023	ppb	111.11	100.	
109 Ag	-0.0014	-0.0014	ppb	93.75	#VALUE!	
111 Cd	-0.1353	-0.1353	ppb	33.39	#VALUE!	
114 Cd	-0.0041	-0.0041	ppb	256.30	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0687	0.0687	ppb	10.09	1000.	
120 Sn	0.0651	0.0651	ppb	29.38	#VALUE!	
121 Sb	0.0014	0.0014	ppb	254.45	#VALUE!	
123 Sb	-0.0026	-0.0026	ppb	213.25	1000.	
135 Ba	0.0143	0.0143	ppb	143.00	2000.	
137 Ba	0.013	0.013	ppb	24.92	#VALUE!	
182 W	0.0937	0.0937	ppb	29.88	1000.	
203 Tl	-0.011	-0.011	ppb	35.10	1000.	
205 Tl	-0.0019	-0.0019	ppb	32.85	#VALUE!	
208 Pb	-0.0126	-0.0126	ppb	62.76	2000.	
232 Th	0.0095	0.0095	ppb	20.70	1000.	
238 U	0.0009	0.0009	ppb	168.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2465472.50	1.51	2503575.30	98.5	69.5 - 120	
45 Sc	2344093.00	0.84	2335220.50	100.4	69.5 - 120	
72 Ge	441745.16	1.29	440447.13	100.3	69.5 - 120	
159 Tb	3099356.00	1.41	3080665.80	100.6	69.5 - 120	
209 Bi	1729003.00	1.55	1728094.30	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000393

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\029SMPL.D\029SMPL.D#
Date Acquired: Mar 27 2018 02:50 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0084	-0.0084	ppb	16.95	100.	
11 B	1.006	1.006	ppb	14.65	1000.	
23 Na	-13.52	-13.52	ppb	9.80	200000.	
25 Mg	-0.4185	-0.4185	ppb	177.01	200000.	
27 Al	0.0257	0.0257	ppb	2250.40	200000.	
28 Si	-1,501.	-1,501.	ppb	12.91	#VALUE!	
29 Si	-2,134.	-2,134.	ppb	7.73	10000.	LOW
39 K	-118.2	-118.2	ppb	8.46	200000.	
43 Ca	-11.35	-11.35	ppb	28.73	#VALUE!	
44 Ca	-34.47	-34.47	ppb	12.40	200000.	LOW
51 V	-0.1033	-0.1033	ppb	15.60	1000.	
52 Cr	-0.5176	-0.5176	ppb	8.64	2000.	
53 Cr	-4.141	-4.141	ppb	3.45	#VALUE!	
55 Mn	-0.0886	-0.0886	ppb	36.30	2000.	
56 Fe	-134.8	-134.8	ppb	7.79	#VALUE!	
57 Fe	-59.79	-59.79	ppb	7.22	100000.	LOW
59 Co	-0.0145	-0.0145	ppb	38.38	1000.	
60 Ni	-0.027	-0.027	ppb	19.76	1000.	
63 Cu	-0.0537	-0.0537	ppb	15.13	#VALUE!	
65 Cu	-0.0431	-0.0431	ppb	20.80	2000.	
66 Zn	-0.0835	-0.0835	ppb	41.65	2000.	
68 Zn	-2.13	-2.13	ppb	8.90	#VALUE!	
75 As	0.0579	0.0579	ppb	64.85	1000.	
82 Se	0.3814	0.3814	ppb	25.69	1000.	
88 Sr	-0.0332	-0.0332	ppb	14.47	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0285	0.0285	ppb	39.33	1000.	
107 Ag	-0.0031	-0.0031	ppb	6.42	100.	
109 Ag	-0.0025	-0.0025	ppb	44.37	#VALUE!	
111 Cd	-0.3104	-0.3104	ppb	11.32	#VALUE!	
114 Cd	0.0004	0.0004	ppb	168.36	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0274	-0.0274	ppb	54.58	1000.	
120 Sn	-0.0394	-0.0394	ppb	76.63	#VALUE!	
121 Sb	-0.005	-0.005	ppb	67.33	#VALUE!	
123 Sb	-0.0186	-0.0186	ppb	28.25	1000.	
135 Ba	-0.0174	-0.0174	ppb	43.10	2000.	
137 Ba	-0.0169	-0.0169	ppb	19.52	#VALUE!	
182 W	0.119	0.119	ppb	76.36	1000.	
203 Tl	-0.012	-0.012	ppb	52.84	1000.	
205 Tl	-0.0039	-0.0039	ppb	115.98	#VALUE!	
208 Pb	-0.0216	-0.0216	ppb	7.66	2000.	
232 Th	0.0097	0.0097	ppb	39.33	1000.	
238 U	-0.0095	-0.0095	ppb	12.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	6644604.50	17.38	2503575.30	265.4	69.5 - 120	IS Fai
45 Sc	6253698.00	19.14	2335220.50	267.8	69.5 - 120	IS Fai
72 Ge	1201519.50	18.33	440447.13	272.8	69.5 - 120	IS Fai
159 Tb	10740980.00	18.40	3080665.80	348.7	69.5 - 120	IS Fai
209 Bi	5892919.00	16.55	1728094.30	341.0	69.5 - 120	IS Fai

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
5 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000394

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\030_CCV.D\030_CCV.D#
Date Acquired: Mar 27 2018 02:54 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.03	ppb	0.97	25	100.12	
11 B	27.02	ppb	4.86	25	108.08	
23 Na	4,919.	ppb	0.60	5,000	98.38	
25 Mg	5,019.	ppb	0.57	5,000	100.38	
27 Al	499.	ppb	0.65	500	99.8	
28 Si	516.1	ppb	5.07	500	103.22	
29 Si	402.1	ppb	4.09	500	80.42	Fail
39 K	4,964.	ppb	0.78	5,000	99.28	
43 Ca	5,080.	ppb	1.00	5,000	101.6	
44 Ca	5,081.	ppb	0.47	5,000	101.62	
51 V	24.46	ppb	1.36	25	97.84	
52 Cr	24.64	ppb	0.85	25	98.56	
53 Cr	24.7	ppb	0.53	25	98.8	
55 Mn	24.85	ppb	0.51	25	99.4	
56 Fe	4,922.	ppb	0.52	5,000	98.44	
57 Fe	5,053.	ppb	1.75	5,000	101.06	
59 Co	24.68	ppb	0.91	25	98.72	
60 Ni	24.69	ppb	0.64	25	98.76	
63 Cu	25.27	ppb	0.34	25	101.08	
65 Cu	24.99	ppb	1.02	25	99.96	
66 Zn	24.89	ppb	1.30	25	99.56	
68 Zn	25.54	ppb	1.28	25	102.16	
75 As	25.43	ppb	1.68	25	101.72	
82 Se	25.24	ppb	1.43	25	100.96	
88 Sr	24.77	ppb	0.87	25	99.08	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.37	ppb	0.53	25	101.48	
107 Ag	25.04	ppb	0.99	25	100.16	
109 Ag	25.34	ppb	0.24	25	101.36	
111 Cd	25.19	ppb	0.26	25	100.76	
114 Cd	25.18	ppb	1.93	25	100.72	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.24	ppb	1.06	25	100.96	
120 Sn	25.11	ppb	2.08	25	100.44	
121 Sb	25.11	ppb	0.92	25	100.44	
123 Sb	25.53	ppb	1.06	25	102.12	
135 Ba	25.34	ppb	3.99	25	101.36	
137 Ba	25.01	ppb	2.02	25	100.04	
182 W	25.05	ppb	1.64	25	100.2	
203 Tl	25.1	ppb	1.16	25	100.4	
205 Tl	25.11	ppb	1.51	25	100.44	
208 Pb	25.18	ppb	0.96	25	100.72	
232 Th	24.82	ppb	1.66	25	99.28	
238 U	24.8	ppb	1.04	25	99.2	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2683140.30	1.67	2503575.30	107.2	80 - 120.4	
45 Sc	2513638.30	1.69	2335220.50	107.6	80 - 120.4	
72 Ge	469107.47	0.28	440447.13	106.5	80 - 120.4	
159 Tb	3358284.00	0.40	3080665.80	109.0	80 - 120.4	
209 Bi	1846022.90	0.34	1728094.30	106.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000395

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\031_CCB.D\031_CCB.D#
Date Acquired: Mar 27 2018 02:58 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0009	ppb	383.46	1.00	
11 B	2.099	ppb	9.96	1.00	
23 Na	-7.426	ppb	6.67	1.00	
25 Mg	-0.7592	ppb	24.78	1.00	
27 Al	-0.1366	ppb	255.56	1.00	
28 Si	135.1	ppb	51.40	1.00	
29 Si	52.49	ppb	155.82	1.00	
39 K	-0.1689	ppb	888.10	1.00	
43 Ca	0.1853	ppb	2677.80	1.00	
44 Ca	0.1186	ppb	2301.00	1.00	
51 V	-0.0228	ppb	222.93	1.00	
52 Cr	-0.0266	ppb	125.56	1.00	
53 Cr	-0.0783	ppb	198.29	1.00	
55 Mn	-0.0178	ppb	51.73	1.00	
56 Fe	-0.4737	ppb	533.04	1.00	
57 Fe	-2.974	ppb	47.61	1.00	
59 Co	-0.0041	ppb	175.14	1.00	
60 Ni	-0.0072	ppb	25.67	1.00	
63 Cu	-0.0084	ppb	61.77	1.00	
65 Cu	-0.0012	ppb	598.36	1.00	
66 Zn	0.1838	ppb	19.21	1.00	
68 Zn	-0.0468	ppb	315.40	1.00	
75 As	0.1058	ppb	8.15	1.00	
82 Se	0.3992	ppb	92.84	1.00	
88 Sr	-0.0313	ppb	5.60	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0367	ppb	30.65	1.00	
107 Ag	-0.0009	ppb	195.14	1.00	
109 Ag	-0.0018	ppb	94.07	1.00	
111 Cd	-0.0515	ppb	26.87	1.00	
114 Cd	-0.0006	ppb	735.98	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0333	ppb	5.21	1.00	
120 Sn	0.0383	ppb	77.28	1.00	
121 Sb	-0.0055	ppb	48.63	1.00	
123 Sb	-0.0107	ppb	25.26	1.00	
135 Ba	0.0017	ppb	324.66	1.00	
137 Ba	-0.0055	ppb	154.17	1.00	
182 W	0.0381	ppb	6.81	1.00	
203 Tl	-0.0063	ppb	19.65	1.00	
205 Tl	-0.0072	ppb	63.41	1.00	
208 Pb	-0.0133	ppb	36.03	1.00	
232 Th	0.0183	ppb	15.70	1.00	
238 U	-0.0061	ppb	38.64	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2419220.80	1.86	2503575.30	96.6	79.5 - 120	
45 Sc	2277360.50	1.92	2335220.50	97.5	79.5 - 120	
72 Ge	431385.91	1.81	440447.13	97.9	79.5 - 120	
159 Tb	3081140.80	1.69	3080665.80	100.0	79.5 - 120	
209 Bi	1719900.00	1.13	1728094.30	99.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 27 2018 03:01 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2287-001
Misc Info: DW
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0156	0.0156	ppb	17.62	100.	
11 B	4.659	4.659	ppb	2.00	1000.	
23 Na	9,258.	9,258.	ppb	0.79	200000.	
25 Mg	554.4	554.4	ppb	0.37	200000.	
27 Al	53.89	53.89	ppb	2.41	200000.	
28 Si	4,119.	4,119.	ppb	2.70	#VALUE!	
29 Si	4,970.	4,970.	ppb	2.24	10000.	
39 K	589.7	589.7	ppb	0.46	200000.	
43 Ca	5,115.	5,115.	ppb	1.65	#VALUE!	
44 Ca	5,173.	5,173.	ppb	0.99	200000.	
51 V	0.2858	0.2858	ppb	9.76	1000.	
52 Cr	0.1096	0.1096	ppb	19.33	2000.	
53 Cr	-1.159	-1.159	ppb	11.61	#VALUE!	
55 Mn	8.371	8.371	ppb	0.82	2000.	
56 Fe	-0.2205	-0.2205	ppb	998.19	#VALUE!	
57 Fe	12.86	12.86	ppb	29.05	100000.	
59 Co	0.0418	0.0418	ppb	20.78	1000.	
60 Ni	0.2138	0.2138	ppb	14.61	1000.	
63 Cu	43.84	43.84	ppb	0.77	#VALUE!	
65 Cu	43.35	43.35	ppb	0.70	2000.	
66 Zn	64.95	64.95	ppb	0.62	2000.	
68 Zn	64.22	64.22	ppb	1.31	#VALUE!	
75 As	0.1644	0.1644	ppb	49.52	1000.	
82 Se	0.4581	0.4581	ppb	62.02	1000.	
88 Sr	23.18	23.18	ppb	0.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1453	0.1453	ppb	9.55	1000.	
107 Ag	0.0003	0.0003	ppb	143.87	100.	
109 Ag	0.0042	0.0042	ppb	82.40	#VALUE!	
111 Cd	-0.0589	-0.0589	ppb	38.52	#VALUE!	
114 Cd	0.0049	0.0049	ppb	131.52	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0162	-0.0162	ppb	18.01	1000.	
120 Sn	-0.0276	-0.0276	ppb	20.68	#VALUE!	
121 Sb	0.0148	0.0148	ppb	24.69	#VALUE!	
123 Sb	0.0048	0.0048	ppb	238.99	1000.	
135 Ba	3.429	3.429	ppb	5.24	2000.	
137 Ba	3.262	3.262	ppb	4.00	#VALUE!	
182 W	0.0168	0.0168	ppb	66.21	1000.	
203 Tl	-0.0021	-0.0021	ppb	435.69	1000.	
205 Tl	-0.0043	-0.0043	ppb	70.68	#VALUE!	
208 Pb	0.2799	0.2799	ppb	6.75	2000.	
232 Th	0.0438	0.0438	ppb	29.82	1000.	
238 U	0.0091	0.0091	ppb	13.85	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2626085.30	0.78	2503575.30	104.9	69.5 - 120	
45 Sc	2466606.00	0.96	2335220.50	105.6	69.5 - 120	
72 Ge	466187.88	0.98	440447.13	105.8	69.5 - 120	
159 Tb	3315694.80	1.85	3080665.80	107.6	69.5 - 120	
209 Bi	1831418.80	1.26	1728094.30	106.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000397

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 27 2018 03:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2394-001
Misc Info: DW
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	607.69	100.	
11 B	10.84	10.84	ppb	1.28	1000.	
23 Na	10,050.	10,050.	ppb	0.94	200000.	
25 Mg	4,359.	4,359.	ppb	0.92	200000.	
27 Al	58.	58.	ppb	4.71	200000.	
28 Si	5,984.	5,984.	ppb	1.47	#VALUE!	
29 Si	7,017.	7,017.	ppb	1.89	10000.	
39 K	3,548.	3,548.	ppb	0.73	200000.	
43 Ca	22,780.	22,780.	ppb	0.60	#VALUE!	
44 Ca	21,960.	21,960.	ppb	1.41	200000.	
51 V	0.7271	0.7271	ppb	9.10	1000.	
52 Cr	0.7878	0.7878	ppb	2.58	2000.	
53 Cr	-0.5017	-0.5017	ppb	43.95	#VALUE!	
55 Mn	0.3046	0.3046	ppb	9.03	2000.	
56 Fe	-2.697	-2.697	ppb	60.48	#VALUE!	
57 Fe	35.76	35.76	ppb	14.31	100000.	
59 Co	0.0301	0.0301	ppb	56.29	1000.	
60 Ni	0.1381	0.1381	ppb	12.94	1000.	
63 Cu	15.68	15.68	ppb	1.06	#VALUE!	
65 Cu	15.27	15.27	ppb	0.54	2000.	
66 Zn	8.011	8.011	ppb	1.17	2000.	
68 Zn	7.69	7.69	ppb	0.82	#VALUE!	
75 As	43.21	43.21	ppb	0.40	1000.	
82 Se	0.5685	0.5685	ppb	33.93	1000.	
88 Sr	84.56	84.56	ppb	1.42	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.559	1.559	ppb	2.09	1000.	
107 Ag	0.0055	0.0055	ppb	54.94	100.	
109 Ag	0.0028	0.0028	ppb	157.89	#VALUE!	
111 Cd	-0.0589	-0.0589	ppb	30.48	#VALUE!	
114 Cd	0.0037	0.0037	ppb	159.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0284	0.0284	ppb	12.17	1000.	
120 Sn	0.0195	0.0195	ppb	85.14	#VALUE!	
121 Sb	0.2008	0.2008	ppb	4.06	#VALUE!	
123 Sb	0.1784	0.1784	ppb	5.17	1000.	
135 Ba	1.772	1.772	ppb	1.88	2000.	
137 Ba	1.666	1.666	ppb	3.58	#VALUE!	
182 W	0.2486	0.2486	ppb	14.48	1000.	
203 Tl	-0.0018	-0.0018	ppb	357.25	1000.	
205 Tl	-0.0021	-0.0021	ppb	270.15	#VALUE!	
208 Pb	1.113	1.113	ppb	3.60	2000.	
232 Th	0.0042	0.0042	ppb	169.98	1000.	
238 U	2.198	2.198	ppb	1.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2789941.30	2.85	2503575.30	111.4	69.5 - 120	
45 Sc	2580168.00	2.04	2335220.50	110.5	69.5 - 120	
72 Ge	483804.22	2.37	440447.13	109.8	69.5 - 120	
159 Tb	3415694.80	2.24	3080665.80	110.9	69.5 - 120	
209 Bi	1889773.10	0.90	1728094.30	109.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000398

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 27 2018 03:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2395-001
Misc Info: DW
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0137	0.0137	ppb	42.81	100.	
11 B	19.51	19.51	ppb	4.41	1000.	
23 Na	61,410.	61,410.	ppb	0.97	200000.	
25 Mg	9,491.	9,491.	ppb	0.35	200000.	
27 Al	3.346	3.346	ppb	155.38	200000.	
28 Si	7,273.	7,273.	ppb	0.87	#VALUE!	
29 Si	8,482.	8,482.	ppb	0.58	10000.	
39 K	2,031.	2,031.	ppb	0.91	200000.	
43 Ca	60,740.	60,740.	ppb	0.79	#VALUE!	
44 Ca	56,940.	56,940.	ppb	0.62	200000.	
51 V	0.5968	0.5968	ppb	8.16	1000.	
52 Cr	1.979	1.979	ppb	6.03	2000.	
53 Cr	-0.9646	-0.9646	ppb	17.27	#VALUE!	
55 Mn	33.02	33.02	ppb	0.50	2000.	
56 Fe	52.95	52.95	ppb	8.07	#VALUE!	
57 Fe	136.7	136.7	ppb	3.38	100000.	
59 Co	0.0549	0.0549	ppb	32.39	1000.	
60 Ni	-0.0374	-0.0374	ppb	83.47	1000.	
63 Cu	3.258	3.258	ppb	3.52	#VALUE!	
65 Cu	1.558	1.558	ppb	2.06	2000.	
66 Zn	1.985	1.985	ppb	5.71	2000.	
68 Zn	1.819	1.819	ppb	7.00	#VALUE!	
75 As	5.192	5.192	ppb	4.02	1000.	
82 Se	0.4267	0.4267	ppb	95.36	1000.	
88 Sr	354.4	354.4	ppb	0.11	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.2751	0.2751	ppb	19.47	1000.	
107 Ag	0.0004	0.0004	ppb	545.88	100.	
109 Ag	-0.0003	-0.0003	ppb	1434.20	#VALUE!	
111 Cd	-0.0506	-0.0506	ppb	59.03	#VALUE!	
114 Cd	0.0034	0.0034	ppb	158.10	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0367	0.0367	ppb	71.94	1000.	
120 Sn	0.027	0.027	ppb	25.76	#VALUE!	
121 Sb	0.0235	0.0235	ppb	72.40	#VALUE!	
123 Sb	0.0155	0.0155	ppb	96.64	1000.	
135 Ba	9.523	9.523	ppb	2.63	2000.	
137 Ba	9.371	9.371	ppb	1.25	#VALUE!	
182 W	0.6659	0.6659	ppb	5.34	1000.	
203 Tl	0.0027	0.0027	ppb	583.80	1000.	
205 Tl	-0.0006	-0.0006	ppb	2205.10	#VALUE!	
208 Pb	0.0546	0.0546	ppb	61.39	2000.	
232 Th	0.0104	0.0104	ppb	145.39	1000.	
238 U	0.4015	0.4015	ppb	5.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2734128.00	0.17	2503575.30	109.2	69.5 - 120	
45 Sc	2634638.30	0.72	2335220.50	112.8	69.5 - 120	
72 Ge	489405.75	0.12	440447.13	111.1	69.5 - 120	
159 Tb	3433202.80	0.61	3080665.80	111.4	69.5 - 120	
209 Bi	1850972.90	0.81	1728094.30	107.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000399

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 27 2018 03:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2396-001
Misc Info: DW
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0017	0.0017	ppb	134.87	100.	
11 B	9.268	9.268	ppb	4.04	1000.	
23 Na	14,590.	14,590.	ppb	0.66	200000.	
25 Mg	4,569.	4,569.	ppb	0.76	200000.	
27 Al	0.8915	0.8915	ppb	16.27	200000.	
28 Si	6,187.	6,187.	ppb	1.88	#VALUE!	
29 Si	7,207.	7,207.	ppb	1.52	10000.	
39 K	3,594.	3,594.	ppb	0.09	200000.	
43 Ca	24,810.	24,810.	ppb	0.14	#VALUE!	
44 Ca	23,850.	23,850.	ppb	1.19	200000.	
51 V	0.0677	0.0677	ppb	35.88	1000.	
52 Cr	0.2214	0.2214	ppb	11.94	2000.	
53 Cr	-0.7139	-0.7139	ppb	9.29	#VALUE!	
55 Mn	118.7	118.7	ppb	1.05	2000.	
56 Fe	16.5	16.5	ppb	22.16	#VALUE!	
57 Fe	65.59	65.59	ppb	1.25	100000.	
59 Co	0.0207	0.0207	ppb	7.06	1000.	
60 Ni	0.1554	0.1554	ppb	21.71	1000.	
63 Cu	1.252	1.252	ppb	4.62	#VALUE!	
65 Cu	0.9057	0.9057	ppb	6.33	2000.	
66 Zn	4.752	4.752	ppb	2.33	2000.	
68 Zn	4.566	4.566	ppb	9.80	#VALUE!	
75 As	42.57	42.57	ppb	0.46	1000.	
82 Se	0.3541	0.3541	ppb	102.29	1000.	
88 Sr	81.13	81.13	ppb	1.15	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.428	5.428	ppb	2.46	1000.	
107 Ag	-0.0024	-0.0024	ppb	73.40	100.	
109 Ag	-0.0006	-0.0006	ppb	493.24	#VALUE!	
111 Cd	-0.0283	-0.0283	ppb	124.26	#VALUE!	
114 Cd	-0.0017	-0.0017	ppb	174.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0055	-0.0055	ppb	452.25	1000.	
120 Sn	-0.0281	-0.0281	ppb	36.88	#VALUE!	
121 Sb	0.0151	0.0151	ppb	17.33	#VALUE!	
123 Sb	0.0166	0.0166	ppb	43.18	1000.	
135 Ba	8.177	8.177	ppb	1.46	2000.	
137 Ba	7.974	7.974	ppb	1.08	#VALUE!	
182 W	0.7708	0.7708	ppb	2.55	1000.	
203 Tl	-0.0088	-0.0088	ppb	31.33	1000.	
205 Tl	-0.0048	-0.0048	ppb	61.53	#VALUE!	
208 Pb	0.0133	0.0133	ppb	5.28	2000.	
232 Th	0.0015	0.0015	ppb	163.35	1000.	
238 U	0.431	0.431	ppb	1.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2854303.30	0.97	2503575.30	114.0	69.5 - 120	
45 Sc	2664484.80	0.71	2335220.50	114.1	69.5 - 120	
72 Ge	502437.47	0.60	440447.13	114.1	69.5 - 120	
159 Tb	3508775.80	0.43	3080665.80	113.9	69.5 - 120	
209 Bi	1906417.30	0.81	1728094.30	110.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000400

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 27 2018 03:16 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2443-001
Misc Info: DW
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1005	0.1005	ppb	2.37	100.	
11 B	3.319	3.319	ppb	4.82	1000.	
23 Na	3,531.	3,531.	ppb	1.61	200000.	
25 Mg	1,166.	1,166.	ppb	3.81	200000.	
27 Al	10.61	10.61	ppb	0.82	200000.	
28 Si	6,301.	6,301.	ppb	2.93	#VALUE!	
29 Si	7,343.	7,343.	ppb	2.40	10000.	
39 K	357.1	357.1	ppb	1.93	200000.	
43 Ca	5,150.	5,150.	ppb	2.28	#VALUE!	
44 Ca	5,178.	5,178.	ppb	1.22	200000.	
51 V	0.1703	0.1703	ppb	14.05	1000.	
52 Cr	0.2501	0.2501	ppb	6.21	2000.	
53 Cr	-0.3921	-0.3921	ppb	28.82	#VALUE!	
55 Mn	2.435	2.435	ppb	0.37	2000.	
56 Fe	-16.92	-16.92	ppb	18.88	#VALUE!	
57 Fe	1.04	1.04	ppb	241.63	100000.	
59 Co	0.0011	0.0011	ppb	307.54	1000.	
60 Ni	0.0502	0.0502	ppb	36.35	1000.	
63 Cu	10.61	10.61	ppb	1.79	#VALUE!	
65 Cu	10.29	10.29	ppb	1.56	2000.	
66 Zn	6.372	6.372	ppb	1.59	2000.	
68 Zn	6.195	6.195	ppb	3.72	#VALUE!	
75 As	0.1054	0.1054	ppb	119.17	1000.	
82 Se	0.3196	0.3196	ppb	112.20	1000.	
88 Sr	29.61	29.61	ppb	1.24	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.425	2.425	ppb	0.70	1000.	
107 Ag	0.0034	0.0034	ppb	54.57	100.	
109 Ag	0.0042	0.0042	ppb	103.88	#VALUE!	
111 Cd	0.0094	0.0094	ppb	462.87	#VALUE!	
114 Cd	0.0085	0.0085	ppb	90.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0132	-0.0132	ppb	65.74	1000.	
120 Sn	-0.0042	-0.0042	ppb	218.17	#VALUE!	
121 Sb	-0.0043	-0.0043	ppb	107.10	#VALUE!	
123 Sb	-0.0085	-0.0085	ppb	40.77	1000.	
135 Ba	1.611	1.611	ppb	4.68	2000.	
137 Ba	1.615	1.615	ppb	3.29	#VALUE!	
182 W	0.0022	0.0022	ppb	204.40	1000.	
203 Tl	-0.0017	-0.0017	ppb	556.61	1000.	
205 Tl	-0.0004	-0.0004	ppb	580.52	#VALUE!	
208 Pb	0.2222	0.2222	ppb	5.62	2000.	
232 Th	-0.0001	-0.0001	ppb	691.32	1000.	
238 U	25.11	25.11	ppb	0.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2861696.00	2.79	2503575.30	114.3	69.5 - 120	
45 Sc	2687441.50	2.18	2335220.50	115.1	69.5 - 120	
72 Ge	501760.53	2.27	440447.13	113.9	69.5 - 120	
159 Tb	3522793.30	1.44	3080665.80	114.4	69.5 - 120	
209 Bi	1932900.60	0.83	1728094.30	111.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000401

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 27 2018 03:20 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2465-001
Misc Info: DW
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.002	-0.002	ppb	113.48	100.	
11 B	94.79	94.79	ppb	4.68	1000.	
23 Na	3,296.	3,296.	ppb	1.11	200000.	
25 Mg	5.318	5.318	ppb	85.94	200000.	
27 Al	43.56	43.56	ppb	10.96	200000.	
28 Si	313.7	313.7	ppb	17.97	#VALUE!	
29 Si	355.5	355.5	ppb	8.34	10000.	
39 K	157.9	157.9	ppb	1.24	200000.	
43 Ca	15.33	15.33	ppb	40.61	#VALUE!	
44 Ca	8.363	8.363	ppb	78.72	200000.	
51 V	0.0874	0.0874	ppb	69.47	1000.	
52 Cr	0.0133	0.0133	ppb	351.50	2000.	
53 Cr	-0.4471	-0.4471	ppb	43.97	#VALUE!	
55 Mn	0.0013	0.0013	ppb	2066.00	2000.	
56 Fe	-11.88	-11.88	ppb	15.67	#VALUE!	
57 Fe	-4.345	-4.345	ppb	124.40	100000.	
59 Co	-0.0037	-0.0037	ppb	451.31	1000.	
60 Ni	0.0544	0.0544	ppb	11.56	1000.	
63 Cu	0.259	0.259	ppb	4.67	#VALUE!	
65 Cu	0.1713	0.1713	ppb	13.60	2000.	
66 Zn	0.2532	0.2532	ppb	8.22	2000.	
68 Zn	0.0297	0.0297	ppb	182.83	#VALUE!	
75 As	-0.0625	-0.0625	ppb	107.60	1000.	
82 Se	0.1684	0.1684	ppb	272.27	1000.	
88 Sr	0.3275	0.3275	ppb	21.30	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0361	0.0361	ppb	122.15	1000.	
107 Ag	0.0009	0.0009	ppb	514.07	100.	
109 Ag	0.004	0.004	ppb	102.18	#VALUE!	
111 Cd	-0.0018	-0.0018	ppb	433.39	#VALUE!	
114 Cd	-0.0002	-0.0002	ppb	5416.90	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	-0.0055	-0.0055	ppb	650.48	1000.	
120 Sn	-0.0239	-0.0239	ppb	39.66	#VALUE!	
121 Sb	0.0001	0.0001	ppb	11754.00	#VALUE!	
123 Sb	-0.0042	-0.0042	ppb	390.17	1000.	
135 Ba	0.231	0.231	ppb	15.44	2000.	
137 Ba	0.2403	0.2403	ppb	12.23	#VALUE!	
182 W	0.0282	0.0282	ppb	71.82	1000.	
203 Tl	0.0099	0.0099	ppb	140.11	1000.	
205 Tl	-0.0029	-0.0029	ppb	527.73	#VALUE!	
208 Pb	0.0186	0.0186	ppb	129.84	2000.	
232 Th	0.007	0.007	ppb	171.71	1000.	
238 U	0.0002	0.0002	ppb	6090.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2833198.80	0.33	2503575.30	113.2	69.5 - 120	
45 Sc	2585634.00	0.68	2335220.50	110.7	69.5 - 120	
72 Ge	487851.75	0.72	440447.13	110.8	69.5 - 120	
159 Tb	3332490.80	1.68	3080665.80	108.2	69.5 - 120	
209 Bi	1857714.10	0.91	1728094.30	107.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000402

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 27 2018 03:24 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2466-001
Misc Info: DW
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0019	-0.0019	ppb	32.28	100.	
11 B	67.46	67.46	ppb	2.26	1000.	
23 Na	50,320.	50,320.	ppb	0.62	200000.	
25 Mg	680.9	680.9	ppb	0.95	200000.	
27 Al	9.791	9.791	ppb	4.31	200000.	
28 Si	5,165.	5,165.	ppb	0.76	#VALUE!	
29 Si	6,308.	6,308.	ppb	0.80	10000.	
39 K	2,810.	2,810.	ppb	0.52	200000.	
43 Ca	2,747.	2,747.	ppb	1.33	#VALUE!	
44 Ca	2,750.	2,750.	ppb	0.27	200000.	
51 V	0.5985	0.5985	ppb	13.35	1000.	
52 Cr	1.368	1.368	ppb	3.58	2000.	
53 Cr	-0.4448	-0.4448	ppb	57.98	#VALUE!	
55 Mn	13.21	13.21	ppb	0.48	2000.	
56 Fe	-17.55	-17.55	ppb	3.85	#VALUE!	
57 Fe	-5.377	-5.377	ppb	33.72	100000.	
59 Co	0.0081	0.0081	ppb	50.41	1000.	
60 Ni	0.1377	0.1377	ppb	18.32	1000.	
63 Cu	3.796	3.796	ppb	3.00	#VALUE!	
65 Cu	2.389	2.389	ppb	0.34	2000.	
66 Zn	0.7535	0.7535	ppb	12.99	2000.	
68 Zn	0.5473	0.5473	ppb	12.49	#VALUE!	
75 As	215.4	215.4	ppb	0.12	1000.	
82 Se	0.1514	0.1514	ppb	245.31	1000.	
88 Sr	18.96	18.96	ppb	1.91	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.018	1.018	ppb	2.10	1000.	
107 Ag	0.0011	0.0011	ppb	137.52	100.	
109 Ag	0.0021	0.0021	ppb	59.24	#VALUE!	
111 Cd	-0.0206	-0.0206	ppb	13.92	#VALUE!	
114 Cd	-0.0008	-0.0008	ppb	429.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0143	0.0143	ppb	69.28	1000.	
120 Sn	0.0048	0.0048	ppb	275.44	#VALUE!	
121 Sb	0.1258	0.1258	ppb	6.08	#VALUE!	
123 Sb	0.102	0.102	ppb	11.53	1000.	
135 Ba	2.214	2.214	ppb	6.68	2000.	
137 Ba	2.086	2.086	ppb	3.42	#VALUE!	
182 W	4.439	4.439	ppb	2.17	1000.	
203 Tl	-0.005	-0.005	ppb	131.76	1000.	
205 Tl	-0.0079	-0.0079	ppb	36.19	#VALUE!	
208 Pb	0.2506	0.2506	ppb	2.62	2000.	
232 Th	0.004	0.004	ppb	53.22	1000.	
238 U	1.393	1.393	ppb	4.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2877247.30	1.29	2503575.30	114.9	69.5 - 120	
45 Sc	2698992.30	0.73	2335220.50	115.6	69.5 - 120	
72 Ge	499978.63	1.02	440447.13	113.5	69.5 - 120	
159 Tb	3440609.00	0.70	3080665.80	111.7	69.5 - 120	
209 Bi	1866482.60	0.80	1728094.30	108.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000403

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 27 2018 03:28 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2482-001
Misc Info: DW
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0055	0.0055	ppb	15.97	100.	
11 B	5.576	5.576	ppb	1.47	1000.	
23 Na	9,200.	9,200.	ppb	0.58	200000.	
25 Mg	627.4	627.4	ppb	0.66	200000.	
27 Al	12.56	12.56	ppb	0.47	200000.	
28 Si	1,705.	1,705.	ppb	1.35	#VALUE!	
29 Si	1,763.	1,763.	ppb	1.62	10000.	
39 K	510.4	510.4	ppb	1.09	200000.	
43 Ca	3,411.	3,411.	ppb	0.30	#VALUE!	
44 Ca	3,410.	3,410.	ppb	0.56	200000.	
51 V	0.1317	0.1317	ppb	31.77	1000.	
52 Cr	0.2105	0.2105	ppb	14.49	2000.	
53 Cr	-0.3318	-0.3318	ppb	42.38	#VALUE!	
55 Mn	1.832	1.832	ppb	1.47	2000.	
56 Fe	-2.881	-2.881	ppb	58.11	#VALUE!	
57 Fe	8.596	8.596	ppb	19.77	100000.	
59 Co	-0.0016	-0.0016	ppb	37.63	1000.	
60 Ni	0.3263	0.3263	ppb	5.00	1000.	
63 Cu	113.4	113.4	ppb	0.49	#VALUE!	
65 Cu	113.5	113.5	ppb	0.37	2000.	
66 Zn	217.3	217.3	ppb	0.44	2000.	
68 Zn	214.4	214.4	ppb	0.54	#VALUE!	
75 As	0.167	0.167	ppb	40.34	1000.	
82 Se	0.3084	0.3084	ppb	29.34	1000.	
88 Sr	24.7	24.7	ppb	0.77	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.237	0.237	ppb	6.77	1000.	
107 Ag	0.0124	0.0124	ppb	3.01	100.	
109 Ag	0.0141	0.0141	ppb	26.94	#VALUE!	
111 Cd	-0.0124	-0.0124	ppb	102.18	#VALUE!	
114 Cd	-0.0002	-0.0002	ppb	3936.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0096	0.0096	ppb	199.44	1000.	
120 Sn	-0.004	-0.004	ppb	110.75	#VALUE!	
121 Sb	0.0297	0.0297	ppb	16.42	#VALUE!	
123 Sb	0.0243	0.0243	ppb	73.39	1000.	
135 Ba	4.25	4.25	ppb	2.82	2000.	
137 Ba	4.131	4.131	ppb	1.39	#VALUE!	
182 W	-0.0027	-0.0027	ppb	141.55	1000.	
203 Tl	-0.0057	-0.0057	ppb	145.71	1000.	
205 Tl	-0.0085	-0.0085	ppb	23.32	#VALUE!	
208 Pb	1.089	1.089	ppb	1.05	2000.	
232 Th	0.0062	0.0062	ppb	44.08	1000.	
238 U	0.1585	0.1585	ppb	2.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2729354.00	0.86	2503575.30	109.0	69.5 - 120	
45 Sc	2598434.80	1.07	2335220.50	111.3	69.5 - 120	
72 Ge	485183.31	0.48	440447.13	110.2	69.5 - 120	
159 Tb	3382541.00	1.46	3080665.80	109.8	69.5 - 120	
209 Bi	1855254.80	0.25	1728094.30	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000404

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\040SMPL.D\040SMPL.D#
Date Acquired: Mar 27 2018 03:32 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.67	2.734	ppb	0.51	100.	
11 B	111.35	22.27	ppb	2.05	1000.	
23 Na	33,395.	6,679.	ppb	0.10	200000.	
25 Mg	89,400.	17,880.	ppb	0.72	200000.	
27 Al	241,300.	48,260.	ppb	0.66	200000.	
28 Si	990.5	198.1	ppb	20.41	#VALUE!	
29 Si	808.5	161.7	ppb	21.91	10000.	
39 K	67,050.	13,410.	ppb	0.62	200000.	
43 Ca	172,700.	34,540.	ppb	0.11	#VALUE!	
44 Ca	165,700.	33,140.	ppb	0.44	200000.	
51 V	532.5	106.5	ppb	0.46	1000.	
52 Cr	223.05	44.61	ppb	0.62	2000.	
53 Cr	248.85	49.77	ppb	0.47	#VALUE!	
55 Mn	1,844.5	368.9	ppb	0.43	2000.	
56 Fe	247,700.	49,540.	ppb	0.37	#VALUE!	
57 Fe	241,950.	48,390.	ppb	0.31	100000.	
59 Co	109.4	21.88	ppb	0.57	1000.	
60 Ni	277.5	55.5	ppb	0.22	1000.	
63 Cu	215.15	43.03	ppb	0.17	#VALUE!	
65 Cu	215.9	43.18	ppb	0.53	2000.	
66 Zn	735.	147.	ppb	1.20	2000.	
68 Zn	805.5	161.1	ppb	0.13	#VALUE!	
75 As	213.15	42.63	ppb	0.11	1000.	
82 Se	4.8775	0.9755	ppb	32.65	1000.	
88 Sr	952.	190.4	ppb	0.42	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.91	1.982	ppb	0.46	1000.	
107 Ag	1.8	0.36	ppb	4.58	100.	
109 Ag	1.5465	0.3093	ppb	3.34	#VALUE!	
111 Cd	2.925	0.585	ppb	13.42	#VALUE!	
114 Cd	-0.525	-0.105	ppb	23.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.15	10.63	ppb	2.02	1000.	
120 Sn	52.65	10.53	ppb	0.65	#VALUE!	
121 Sb	2.8315	0.5663	ppb	3.23	#VALUE!	
123 Sb	2.895	0.579	ppb	7.63	1000.	
135 Ba	2,102.5	420.5	ppb	1.87	2000.	
137 Ba	2,094.	418.8	ppb	1.33	#VALUE!	
182 W	0.856	0.1712	ppb	4.60	1000.	
203 Tl	4.139	0.8278	ppb	3.26	1000.	
205 Tl	4.321	0.8642	ppb	1.17	#VALUE!	
208 Pb	203.75	40.75	ppb	1.54	2000.	
232 Th	120.5	24.1	ppb	1.78	1000.	
238 U	25.515	5.103	ppb	3.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2970124.80	3.01	2503575.30	118.6	69.5 - 120	
45 Sc	2761765.50	1.38	2335220.50	118.3	69.5 - 120	
72 Ge	511885.69	1.13	440447.13	116.2	69.5 - 120	
159 Tb	3594267.80	2.13	3080665.80	116.7	69.5 - 120	
209 Bi	1875811.30	2.28	1728094.30	108.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000405

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\041SMPL.D\041SMPL.D#
Date Acquired: Mar 27 2018 03:36 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.87	1.387	ppb	1.53	100.	
11 B	116.	11.6	ppb	3.84	1000.	
23 Na	34,230.	3,423.	ppb	1.87	200000.	
25 Mg	91,730.	9,173.	ppb	1.42	200000.	
27 Al	245,700.	24,570.	ppb	1.50	200000.	
28 Si	-1,217.	-121.7	ppb	42.16	#VALUE!	
29 Si	-1,782.	-178.2	ppb	10.94	10000.	LOW
39 K	68,490.	6,849.	ppb	0.59	200000.	
43 Ca	174,800.	17,480.	ppb	1.56	#VALUE!	
44 Ca	169,200.	16,920.	ppb	0.51	200000.	
51 V	530.9	53.09	ppb	0.59	1000.	
52 Cr	229.6	22.96	ppb	0.64	2000.	
53 Cr	251.3	25.13	ppb	1.73	#VALUE!	
55 Mn	1,912.	191.2	ppb	0.16	2000.	
56 Fe	254,300.	25,430.	ppb	0.95	#VALUE!	
57 Fe	248,300.	24,830.	ppb	0.89	100000.	
59 Co	110.7	11.07	ppb	0.77	1000.	
60 Ni	283.6	28.36	ppb	1.00	1000.	
63 Cu	222.7	22.27	ppb	1.19	#VALUE!	
65 Cu	223.1	22.31	ppb	2.06	2000.	
66 Zn	756.2	75.62	ppb	0.55	2000.	
68 Zn	830.8	83.08	ppb	0.63	#VALUE!	
75 As	219.	21.9	ppb	0.63	1000.	
82 Se	6.377	0.6377	ppb	27.93	1000.	
88 Sr	966.9	96.69	ppb	1.00	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.652	0.9652	ppb	4.03	1000.	
107 Ag	1.612	0.1612	ppb	4.39	100.	
109 Ag	1.66	0.166	ppb	10.19	#VALUE!	
111 Cd	3.013	0.3013	ppb	13.85	#VALUE!	
114 Cd	-0.1415	-0.0142	ppb	176.18	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.61	5.261	ppb	2.02	1000.	
120 Sn	52.77	5.277	ppb	1.87	#VALUE!	
121 Sb	2.762	0.2762	ppb	2.87	#VALUE!	
123 Sb	2.875	0.2875	ppb	7.15	1000.	
135 Ba	2,093.	209.3	ppb	0.87	2000.	
137 Ba	2,083.	208.3	ppb	1.32	#VALUE!	
182 W	0.8441	0.0844	ppb	12.85	1000.	
203 Tl	3.824	0.3824	ppb	4.66	1000.	
205 Tl	3.906	0.3906	ppb	4.83	#VALUE!	
208 Pb	201.2	20.12	ppb	0.87	2000.	
232 Th	117.8	11.78	ppb	1.12	1000.	
238 U	25.23	2.523	ppb	2.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3068210.30	1.37	2503575.30	122.6	69.5 - 120	IS Fai
45 Sc	2824570.30	0.63	2335220.50	121.0	69.5 - 120	IS Fai
72 Ge	523991.13	0.38	440447.13	119.0	69.5 - 120	
159 Tb	3672233.30	0.05	3080665.80	119.2	69.5 - 120	
209 Bi	1945265.80	0.38	1728094.30	112.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000406

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\042_CCV.D\042_CCV.D#
Date Acquired: Mar 27 2018 03:40 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.47	ppb	1.37	25	101.88	
11 B	25.61	ppb	3.11	25	102.44	
23 Na	5,099.	ppb	0.55	5,000	101.98	
25 Mg	5,155.	ppb	1.33	5,000	103.1	
27 Al	509.2	ppb	0.96	500	101.84	
28 Si	153.	ppb	21.75	500	30.6	
29 Si	133.4	ppb	37.57	500	26.68	Fail
39 K	5,045.	ppb	0.36	5,000	100.9	
43 Ca	5,042.	ppb	0.86	5,000	100.84	
44 Ca	5,097.	ppb	1.00	5,000	101.94	
51 V	24.79	ppb	1.03	25	99.16	
52 Cr	24.78	ppb	1.17	25	99.12	
53 Cr	25.09	ppb	1.07	25	100.36	
55 Mn	25.02	ppb	0.55	25	100.08	
56 Fe	4,955.	ppb	1.30	5,000	99.1	
57 Fe	5,108.	ppb	1.67	5,000	102.16	
59 Co	24.96	ppb	0.53	25	99.84	
60 Ni	25.01	ppb	1.20	25	100.04	
63 Cu	25.34	ppb	0.17	25	101.36	
65 Cu	25.17	ppb	1.35	25	100.68	
66 Zn	25.28	ppb	1.16	25	101.12	
68 Zn	25.65	ppb	0.94	25	102.6	
75 As	25.18	ppb	0.88	25	100.72	
82 Se	25.03	ppb	1.49	25	100.12	
88 Sr	24.2	ppb	1.41	25	96.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.53	ppb	1.34	25	98.12	
107 Ag	24.71	ppb	1.02	25	98.84	
109 Ag	24.88	ppb	0.90	25	99.52	
111 Cd	24.77	ppb	0.16	25	99.08	
114 Cd	24.86	ppb	0.24	25	99.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.58	ppb	1.36	25	102.32	
120 Sn	25.66	ppb	0.27	25	102.64	
121 Sb	25.67	ppb	1.07	25	102.68	
123 Sb	25.6	ppb	0.88	25	102.4	
135 Ba	25.63	ppb	1.71	25	102.52	
137 Ba	25.58	ppb	1.04	25	102.32	
182 W	25.15	ppb	0.66	25	100.6	
203 Tl	25.02	ppb	0.24	25	100.08	
205 Tl	25.06	ppb	0.97	25	100.24	
208 Pb	25.16	ppb	0.87	25	100.64	
232 Th	24.57	ppb	0.72	25	98.28	
238 U	24.45	ppb	1.08	25	97.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3007352.30	2.22	2503575.30	120.1	80 - 120.4	
45 Sc	2762969.00	0.87	2335220.50	118.3	80 - 120.4	
72 Ge	511789.28	0.78	440447.13	116.2	80 - 120.4	
159 Tb	3547621.30	0.53	3080665.80	115.2	80 - 120.4	
209 Bi	1943314.40	0.89	1728094.30	112.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000407

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC27A.B\043_CCB.D\043_CCB.D#
Date Acquired: Mar 27 2018 03:43 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 27 2018 02:12 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0022	ppb	27.71	1.00	
11 B	1.102	ppb	3.76	1.00	
23 Na	-9.172	ppb	1.08	1.00	
25 Mg	-0.9942	ppb	19.17	1.00	
27 Al	-0.2952	ppb	20.36	1.00	
28 Si	-201.	ppb	84.13	1.00	
29 Si	-199.2	ppb	60.74	1.00	
39 K	-9.445	ppb	36.94	1.00	
43 Ca	-0.7904	ppb	495.57	1.00	
44 Ca	-4.934	ppb	33.91	1.00	
51 V	-0.0083	ppb	606.26	1.00	
52 Cr	-0.0338	ppb	46.07	1.00	
53 Cr	-0.1031	ppb	106.01	1.00	
55 Mn	-0.0367	ppb	24.67	1.00	
56 Fe	-12.59	ppb	43.31	1.00	
57 Fe	-5.942	ppb	69.22	1.00	
59 Co	-0.0087	ppb	58.57	1.00	
60 Ni	-0.0022	ppb	293.54	1.00	
63 Cu	-0.0179	ppb	36.83	1.00	
65 Cu	0.0014	ppb	494.86	1.00	
66 Zn	0.1917	ppb	25.64	1.00	
68 Zn	0.0424	ppb	399.15	1.00	
75 As	0.0192	ppb	980.73	1.00	
82 Se	0.0193	ppb	3533.70	1.00	
88 Sr	-0.0274	ppb	9.87	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0117	ppb	12.72	1.00	
107 Ag	0.002	ppb	74.73	1.00	
109 Ag	0.0016	ppb	214.65	1.00	
111 Cd	-0.0066	ppb	781.43	1.00	
114 Cd	-0.0079	ppb	58.07	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0287	ppb	100.80	1.00	
120 Sn	0.0224	ppb	43.79	1.00	
121 Sb	-0.0089	ppb	27.97	1.00	
123 Sb	-0.0094	ppb	63.98	1.00	
135 Ba	-0.0063	ppb	257.26	1.00	
137 Ba	-0.007	ppb	171.08	1.00	
182 W	0.0129	ppb	90.82	1.00	
203 Tl	-0.0066	ppb	104.30	1.00	
205 Tl	-0.0097	ppb	47.29	1.00	
208 Pb	-0.0164	ppb	8.32	1.00	
232 Th	0.0136	ppb	26.85	1.00	
238 U	-0.0083	ppb	21.44	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2720405.80	5.29	2503575.30	108.7	79.5 - 120	
45 Sc	2511259.30	3.47	2335220.50	107.5	79.5 - 120	
72 Ge	470309.88	3.78	440447.13	106.8	79.5 - 120	
159 Tb	3252332.30	3.28	3080665.80	105.6	79.5 - 120	
209 Bi	1796376.60	2.44	1728094.30	104.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC27A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000408

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR1970 Boiling Stones: MSR280 Method: 7471

KMNO4: MR1962 NH2OH-HCl: MR1957

REVIEWED JS 3.19.18 KATAHDIN ANALYTICAL METALS SECTION

Standards/Spiking Information:

1ppm A : MS2117

Heat Source ID : B

Start Time: 12:52 /Temp. 91 °C

End Time: 1322 /Temp. 93 °C

Thermometer ID/Pos: AIC25 / 6:3

Pipet 1ppm B : _____

M15 LCSO = 500uL of 1ppm A to 100mL

M11 Spike(S/P) = 100uL of 1ppm A to 100mL

M15 ICV = 600uL of 1ppm B to 100 mL

M15 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: NA

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLC16HGS1	LC16HGS1	0.6	g	0.1	L	SL	HG	AMJ	03/16/2018	
PBSLC16HGS1	LC16HGS1	0.6	g		L	SL	HG	AMJ	03/16/2018	
SL2079-001	LC16HGS1	0.63	g		L	SL	HG	AMJ	03/16/2018	E
SL2079-002	LC16HGS1	0.62	g		L	SL	HG	AMJ	03/16/2018	
SL2079-003	LC16HGS1	0.71	g		L	SL	HG	AMJ	03/16/2018	
SL2079-004	LC16HGS1	0.669	g		L	SL	HG	AMJ	03/16/2018	
SL2079-005	LC16HGS1	0.62	g		L	SL	HG	AMJ	03/16/2018	
SL2079-006	LC16HGS1	0.74	g		L	SL	HG	AMJ	03/16/2018	
SL2079-007	LC16HGS1	0.78	g		L	SL	HG	AMJ	03/16/2018	
SL2079-008	LC16HGS1	0.67	g		L	SL	HG	AMJ	03/16/2018	
SL2079-009	LC16HGS1	0.72	g		L	SL	HG	AMJ	03/16/2018	N
SL2079-009P	LC16HGS1	0.73	g		L	SL	HG	AMJ	03/16/2018	N
SL2079-009S	LC16HGS1	0.75	g		L	SL	HG	AMJ	03/16/2018	N
SL2079-010	LC16HGS1	0.68	g		L	SL	HG	AMJ	03/16/2018	E
SL2079-011	LC16HGS1	0.74	g		L	SL	HG	AMJ	03/16/2018	E
SL2079-012	LC16HGS1	0.73	g		L	SL	HG	AMJ	03/16/2018	E
SL2079-013	LC16HGS1	0.64	g		L	SL	HG	AMJ	03/16/2018	E
SL2082-001	LC16HGS1	0.79	g		L	SL	HG	AMJ	03/16/2018	A
SL2082-002	LC16HGS1	0.666	g		L	SL	HG	AMJ	03/16/2018	A
SL2082-003	LC16HGS1	0.67	g		L	SL	HG	AMJ	03/16/2018	A
~~SL2137-001~~	~~LC16HGS1~~	~~0.80~~	~~g~~		~~L~~	~~SL~~	~~HG~~	~~AMJ~~	~~03/16/2018~~	~~E~~

AMJ 3/19/18

JS 3.19.18

QA-067-Revision 2 - 05/10/2017 Digestion performed by: AMJ On: 3/16/18 Page: LC054 Revision: 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information: **Method:** 7470

HNO3: MSR94 H2SO4: MSR43

KMNO4: MR1962 K2S2O8: MR1963 NH2OH-HCl: MR1957

REVIEWED 3/19/18 KATAHDIN ANALYTICAL SERVICE

Standards/Spiking Information:

1ppm A : MS2112 3/16/18

1ppm B : MW17595

Pipet
M11 LCSW = 125uL of 1ppm A to 25mL
M11 Spike(S/P) = 25uL of 1ppm A to 25mL
M15 ICV = 600uL of 1ppm B to 100 mL
M15 S10.0 = 1000uL of 1ppm A to 100 mL

Heat Source ID : B
Start Time: 0834 /Temp. 95 °C
End Time: 1034 /Temp. 92 °C
Thermometer ID/Pos: AIC25 14.3

See QAM-185 page 52 for Spix. my information

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLC16HGW2	LC16HGW2	0.025	L	0.025	L	AQ	HG	JS	03/16/2018	
PBT1443A	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
PBT1444A	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
PBWLC16HGW2	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL1633-005	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	B
SL1633-006	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	↓
SL2049-002	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	A
SL2049-003	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2049-005	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2049-006	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2049-008	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2049-008P	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2049-008S	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2049-009	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2050-001	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2050-002	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2050-003	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2050-004	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	
SL2079-014	LC16HGW2		L		L	AQ	HG	JS	03/16/2018	D

JS 3.16.18

JS 3/16/18

Katahdin Analytical Services 4000411

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagent Information:

Method: 3010-MS REVIEWED

JS 3.16.18
KATAHDIN ANALYTICAL METALS SECTION

HNO3: MSR94 **HCL:** MSR87

Pipet **LCS/Spiking Information:**

M11 **CLPP-SPK-1 (ID/Vol):** MS2088 / 0.05 mL
M15 **CLPP-SPK-INT1 (ID/Vol):** MW17611 / 0.5 mL
M15 **CLPP-SPK-INT2 (ID/Vol):** MW17612 / 0.5 mL
____ _____ **Spike (ID/Vol):** NA / _____ mL

Heat Source ID : E
Start Time: 0817 **/Temp.** 93 °C
End Time: 1430 **/Temp.** 95 °C
Thermometer ID/Pos: ALC24 / 1.8

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLC16IMW1	LC16IMW1	0.05	L	0.05	L	AQ	IM	AMJ	03/16/2018	____
PBWLC16IMW1	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	____
SL2079-014	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	D
SL2081-001	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	D
SL2081-002	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	A
SL2081-003	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	DA
SL2081-004	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	D
SL2081-005	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	A
SL2081-006	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	D
SL2081-007	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	A
SL2081-008	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	J
SL2081-009	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	J
SL2081-009P	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	J
SL2081-009S	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	A
SL2081-010	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	A
SL2081-010P	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	A
SL2081-010S	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	D
SL2081-011	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	A
SL2081-012	LC16IMW1		L		L	AQ	IM	AMJ	03/16/2018	

3/16/17 AMJ

JS 3.16.18

QA-064-Revision 3 - 06/15/2017 **Digestion performed by:** AMJ **On:** 3/16/17 **Page:** LC051 **Revision:** 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MSR94 **HCL:** MSI87 **H2O2:** MSR95 **Filter Paper:** 10990048

Boiling Stones: MSR80

Pipet	LCS / Spike	LCS/Spiking Information:
M11	☑ ☑	CLPP-SPK-1 (ID/Vol): MS2088 / 0.1 mL
M15	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MW17611 / 1.0 mL
1	☑ ☑	CLPP-SPK-INT2 (ID/Vol): MW17612 / 1.0 mL
NA	☐ ☐	NA Spike (ID/Vol): NA / mL

LCSS: NA **Balance ID:** Bal/15

Heat Source ID : D

Start Time: 0751 **/Temp.** 90 °C

End Time: 1400 **/Temp.** 94 °C

Thermometer ID/Pos: AIC11 15.7

REVIEWED
ams 3/19/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLC19IMS1	LC19IMS1	1.0	g	0.1	L	SL	IM	JS	03/19/2018	
PBSLC19IMS1	LC19IMS1	1	g	1	L	SL	IM	JS	03/19/2018	
SL2079-001	LC19IMS1	1.90	g	1	L	SL	IM	JS	03/19/2018	E
SL2079-002	LC19IMS1	1.79	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-003	LC19IMS1	1.49	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-004	LC19IMS1	1.05	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-005	LC19IMS1	1.34	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-006	LC19IMS1	1.24	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-008	LC19IMS1	1.28	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-009	LC19IMS1	1.28	g	1	L	SL	IM	JS	03/19/2018	N
SL2079-009P	LC19IMS1	1.30	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-009S	LC19IMS1	1.30	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-010	LC19IMS1	1.20	g	1	L	SL	IM	JS	03/19/2018	E
SL2079-011	LC19IMS1	1.15	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-012	LC19IMS1	1.24	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-013	LC19IMS1	1.35	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-001	LC19IMS1	1.76	g	1	L	SL	IM	JS	03/19/2018	A
SL2133-002	LC19IMS1	1.41	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-003	LC19IMS1	1.34	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-004	LC19IMS1	1.56	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-005	LC19IMS1	1.61	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-006	LC19IMS1	1.19	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-007	LC19IMS1	1.38	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-007	1	1.489	g	0.1	L	1	1	1	1	AE

JS 3.2018

ams 3/19/18

QA-065-Revision 2 - 06/16/2017 **Digestion performed by:** JS **On:** 3.19.18 **Page:** LC055 **Revision:** 00

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG225318	SW846 7196A	22-MAR-18	21-MAR-18	U 0.29 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29
MBLANK	WG225555	SW846 7196A	27-MAR-18	26-MAR-18	J 0.26 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG225260	SW3540C	23-MAR-18	22-MAR-18	100 %	1 %	N/A

Quality Control Report

Laboratory Control Sample Summary Report

Chromium, Hexavalent

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG225318-2	LCS	WG225318	22-MAR-18	21-MAR-18	mg/Kgdrywt	40	38.	94	80-120	
WG225555-2	LCS	WG225555	27-MAR-18	26-MAR-18	mg/Kgdrywt	40	38.	95	80-120	

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG225260-2	LCS	WG225260	23-MAR-18	22-MAR-18	%	90	90.	100	90-110	

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG225260-4	SL2079-9	WG225260	23-MAR-18	%	75.	75.	0	20
WG225260-3	SL2079-8	WG225260	23-MAR-18	%	83.	83.	0	20

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sales@katahdinlab.com

Quality Control Report

Matrix Spike Sample Summary Report

Chromium, Hexavalent

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG225318-3	MS	SL2079-9	WG225318	22-MAR-18	mg/Kgdrywt	54.86	U 0.38	37.	68*	75 - 125
WG225318-4	MS	SL2079-9	WG225318	22-MAR-18	mg/Kgdrywt	1441.37	U 0.38	1000	71*	75 - 125

Sample Data Section

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-1
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB08	SL	14-MAR-18 13:40:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.60	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	81. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:01:08	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000009

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-2
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB09	SL	14-MAR-18 15:30:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.32 mg/Kgdrywt	0.58	0.17	0.34	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	86. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:01:16	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000010

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-3
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB10	SL	14-MAR-18 15:10:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.17 mg/Kgdrywt	0.58	0.17	0.35	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	84. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:01:26	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000011

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-4
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB11	SL	14-MAR-18 14:10:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.60	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	80. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:01:37	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000012

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-5
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB12	SL	14-MAR-18 15:00:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.33 mg/Kgdrywt	0.56	0.17	0.33	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	83. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:01:48	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000013

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-6
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SB13	SL	14-MAR-18 14:35:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.61	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	80. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:02:00	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000014

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-7
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS08	SL	14-MAR-18 14:10:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.60	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	79. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:02:13	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000015

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-8
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS09	SL	14-MAR-18 15:50:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.34 mg/Kgdrywt	0.56	0.17	0.34	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	83. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:02:26	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000016

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-9
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS10	SL	14-MAR-18 16:00:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.38 mg/Kgdrywt	0.64	0.19	0.38	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	75. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:02:46	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000017

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-10
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS11	SL	14-MAR-18 14:25:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	2.6 mg/Kgdrywt	0.58	0.17	0.35	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	81. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:03:14	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000018

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-11
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS12	SL	14-MAR-18 14:40:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.60	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:03:27	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000019

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-12
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS13	SL	14-MAR-18 14:35:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.60	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:03:37	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000020

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2079-13
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2079

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-BKRD-SS109	SL	14-MAR-18 12:00:00	15-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.40 mg/Kgdrywt	0.59	0.18	0.35	SW846 7196A	WG225555	27-MAR-18 16:36:00	SW846 3060A	26-MAR-18	
Total Solids	83. %	1		N/A	SW3540C	WG225260	23-MAR-18 11:04:05	SW3540C	22-MAR-18	

Katahdin Analytical Services 5000021

Raw Data Section

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 01:40 pm
Batch: WG225318

Parameter: Chromium, Hexavalent

Prep Date: 21-MAR-18

Date Analyzed: 22-MAR-18

Prep Method: SW846 3060A

Analyst Initials: AP

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL2079-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.11	U0.36 mg/Kgdrywt	81.	.4	0.18	0.60		
SL2079-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	2.64	2.6 mg/Kgdrywt	81.	.4	0.17	0.58		
SL2079-11	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.19	U0.36 mg/Kgdrywt	78.	.4	0.18	0.60		
SL2079-12	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-1	U0.36 mg/Kgdrywt	78.	.4	0.18	0.60		
SL2079-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.32	J0.32 mg/Kgdrywt	86.	.4	0.17	0.58		
SL2079-3	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.17	U0.17 mg/Kgdrywt	84.	.4	0.17	0.58		
SL2079-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.04	U0.36 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2079-5	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.1	U0.33 mg/Kgdrywt	83.	.4	0.17	0.56		
SL2079-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.36 mg/Kgdrywt	80.	.4	0.18	0.61		
SL2079-7	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.42	U0.36 mg/Kgdrywt	79.	.4	0.18	0.60		
SL2079-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.34 mg/Kgdrywt	83.	.4	0.17	0.56		
SL2079-9	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-1	U0.38 mg/Kgdrywt	75.	.4	0.19	0.64		
SL2133-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.42	J0.42 mg/Kgdrywt	78.	.4	0.19	0.63		
SL2133-15	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-1.01	U0.36 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2133-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.38 mg/Kgdrywt	80.	.4	0.19	0.63		
SL2133-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.35 mg/Kgdrywt	81.	.4	0.17	0.58		
SL2133-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	U0.19 mg/Kgdrywt	77.	.4	0.19	0.64		
SL2133-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.4	J0.40 mg/Kgdrywt	79.	.4	0.18	0.59		
WG225318-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	-.09	U0.29 mg/Kgdrywt	NA	.4	0.14	0.48		
WG225318-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	37.59	38. mg/Kgdrywt	NA	.4	0.14	0.48		94
WG225318-3	MS	SW846 7196A	20.000mL	25.000mL	1.2	37.35	37. mg/Kgdrywt	NA	.4	0.20	0.66		68
WG225318-4	MS	SW846 7196A	1.0000mL	25.000mL	25	1025.44	1000 mg/Kgdrywt	NA	.4	4.1	14.		71

Comments:

SL2079-9	MS/MSD
WG225318-1	SL2133-2
WG225318-2	SL2133-2
WG225318-3	SL2079-9
WG225318-4	SL2079-9

Entered by: for AP Date: 04/02/18 Accepted by: Date: 04/02/18

Katahdin Analytical Services 5000023

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 01:43 pm
Batch: WG225319

Parameter: Chromium, Hexavalent

Prep Date: 21-MAR-18

Date Analyzed: 22-MAR-18

Prep Method: SW846 3060A

Analyst Initials: AP

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL2133-16	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.57	J0.57 mg/Kgdrywt	77.	.4	0.18	0.61		
SL2133-17	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.2	U0.37 mg/Kgdrywt	78.	.4	0.19	0.62		
SL2133-19	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.41	J0.41 mg/Kgdrywt	78.	.4	0.18	0.61		
SL2133-21	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.33	J0.33 mg/Kgdrywt	81.	.4	0.18	0.59		
SL2133-22	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.11	U0.37 mg/Kgdrywt	79.	.4	0.19	0.62		
WG225319-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	-.09	U0.29 mg/Kgdrywt	NA	.4	0.14	0.48		
WG225319-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	36.52	36. mg/Kgdrywt	NA	.4	0.14	0.48		91
WG225319-3	MS	SW846 7196A	20.000mL	25.000mL	1.2	36.58	36. mg/Kgdrywt	NA	.4	0.19	0.63		68
WG225319-4	MS	SW846 7196A	1.0000mL	25.000mL	25	1194.85	1200 mg/Kgdrywt	NA	.4	4.0	13.		99

Comments:

SL2133-19	MS/MSD
WG225319-1	SL2133-16
WG225319-2	SL2133-16
WG225319-3	SL2133-19
WG225319-4	SL2133-19

Entered by: [signature] for AP Date: 04/02/18 Accepted by: [signature] Date: 04/02/18

Katahdin Analytical Services 5000024

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

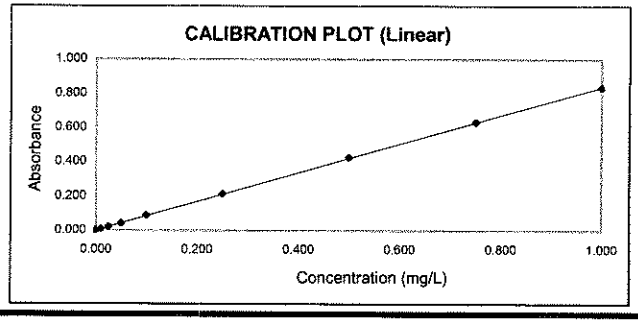
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



Katahdin Analytical Services 5000025

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

SAMPLE ANALYSIS		Spreadsheet File Name:	3/22/18.xls
CCV Source Standard ID:	W16186	Sample Anal. Date:	3/22/2018
CCV Source Std. Conc. (mg/L):	25	Sample Analyst:	AP

	ANALYSIS INFORMATION								DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.426		0.426	0.504	0.504							100.8%
CCV	25.0	25.0	1.000	0.423		0.423	0.501	0.501							100.1%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.001		0.001	-0.002	-0.002	2.5000	0.100	100.000%		-0.09		
LCS A	20.0	25.0	1.250	0.634		0.634	0.752	0.940	2.5000	0.100	100.000%	0.100	37.59	40.00	94.0%
SL2079-1	20.0	25.0	1.250	0.004		0.004	0.002	0.002	2.4493	0.100	81.061%		0.11		
SL2079-2	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.4200	0.100	86.094%		0.32		
SL2079-3	20.0	25.0	1.250	0.005		0.005	0.003	0.004	2.4806	0.100	83.644%		0.17		
SL2079-4	20.0	25.0	1.250	0.002		0.002	-0.001	-0.001	2.4887	0.100	79.677%		-0.04		
SL2079-5	20.0	25.0	1.250	0.004		0.004	0.002	0.002	2.5947	0.100	83.030%		0.10		
SL2079-6	20.0	25.0	1.250	0.003		0.003	0.001	0.001	2.4717	0.100	79.823%		0.03		
SL2079-7	20.0	25.0	1.250	0.170	0.173	-0.003	-0.007	-0.008	2.5181	0.100	78.799%		-0.42		
SL2079-8	20.0	25.0	1.250	0.400	0.397	0.003	0.001	0.001	2.5669	0.100	82.852%		0.03		
CCV	25.0	25.0	1.000	0.423		0.423	0.501	0.501							100.1%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2079-9	20.0	25.0	1.250	0.280	0.290	-0.010	-0.015	-0.019	2.5133	0.100	74.610%		-1.00		
SL2079-9 Post-Dig MS	20.0	25.0	1.250	0.623	0.290	0.333	0.393								78.7%
SL2079-9 Serial Dilution	4.0	25.0	6.250	0.060	0.062	-0.002	-0.005	-0.034	2.5133	0.100	74.610%		-1.81		
SL2079-9 Insoluble MS	1.0	25.0	25.000	0.637		0.637	0.755	18.886	2.4685	0.100	74.610%	2.655	1025.44	1441.37	71.1%
SL2079-9 Soluble MS	20.0	25.0	1.250	0.674	0.214	0.460	0.545	0.681	2.4430	0.100	74.610%	0.100	37.35	54.86	68.0%
SL2079-10	20.0	25.0	1.250	0.373	0.334	0.039	0.043	0.054	2.5301	0.100	81.336%		2.64		
SL2079-11	20.0	25.0	1.250	0.189	0.189	0.000	-0.003	-0.004	2.5542	0.100	78.549%		-0.19		
SL2079-12	20.0	25.0	1.250	0.186	0.197	-0.011	-0.016	-0.020	2.5784	0.100	77.967%		-1.00		
SL2133-2	20.0	25.0	1.250	0.003		0.003	0.001	0.001	2.4022	0.100	79.502%		0.03		
SL2133-4	20.0	25.0	1.250	0.003		0.003	0.001	0.001	2.5575	0.100	80.709%		0.03		
CCV	25.0	25.0	1.000	0.418		0.418	0.495	0.495							98.9%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-6	20.0	25.0	1.250	0.005		0.005	0.003	0.004	2.4223	0.100	76.982%		0.19		
SL2133-8	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.5693	0.100	79.407%		0.40		
SL2133-10	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.4626	0.100	77.523%		0.42		
SL2133-15	20.0	25.0	1.250	0.152	0.163	-0.011	-0.016	-0.020	2.4777	0.100	80.517%		-1.01		
SL2133-16	20.0	25.0	1.250	0.143	0.133	0.010	0.009	0.011	2.5307	0.100	77.228%		0.57		
SL2133-17	20.0	25.0	1.250	0.151	0.151	0.000	-0.003	-0.004	2.4659	0.100	78.289%		-0.20		
SL2133-19	20.0	25.0	1.250	0.142	0.134	0.008	0.006	0.008	2.5021	0.100	78.532%		0.41		
SL2133-19 Post-Dig MS	20.0	25.0	1.250	0.469	0.134	0.335	0.396								79.2%
SL2133-19 Serial Dilution	4.0	25.0	6.250	0.032	0.032	0.000	-0.003	-0.019	2.5021	0.100	78.532%		-0.97		
SL2133-19 Insoluble MS	1.0	25.0	25.000	0.760		0.760	0.902	22.547	2.4029	0.100	78.532%	2.285	1194.85	1210.69	98.7%
CCV	25.0	25.0	1.000	0.421		0.421	0.498	0.498							99.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-19 Soluble MS	20.0	25.0	1.250	0.612	0.145	0.467	0.553	0.691	2.4065	0.100	78.532%	0.100	36.58	52.91	68.3%
SL2133-21	20.0	25.0	1.250	0.092	0.085	0.007	0.005	0.007	2.4801	0.100	81.370%		0.33		
SL2133-22	20.0	25.0	1.250	0.133	0.129	0.004	0.002	0.002	2.4317	0.100	79.049%		0.11		
METHOD BLANK B	20.0	25.0	1.250	0.001		0.001	-0.002	-0.002	2.5000	0.100	100.000%		-0.09		
LCS B	20.0	25.0	1.250	0.616		0.616	0.730	0.913	2.5000	0.100	100.000%	0.100	36.52	40.00	91.3%
CCV	25.0	25.0	1.000	0.419		0.419	0.496	0.496							99.2%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000026

KATAHDIN ANALYTICAL SERVICES

WG22 5318 R465593
WG22 5319 R465594

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): 25 ug/mL	**CCV ID:** W16186 25 ug/mL
LCS Stock ID: SW24101 1000 ~~25~~ ug/mL	**ICV ID:** W16187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** W14990 WS
Diphenylcarbazide Solution ID: W16304	**10% H2SO4 ID:** W16317
Alkaline Digestion Reagent ID: W16195/W16301	**Alkaline Digestion Reagent pH:** 13.43
SW 3060A Leachate Generation Date: 3/21/18	**Filtration End Time:** 1345

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1416		✓	✓	25	25		0.426
CCV								0.423
CCB								0.000
Blank 1					20			0.001
LCS 1								0.634
SL2079-1								0.004
-2								0.007
-3								0.005
-4								0.002
-5								0.004
-6								0.003
-7							0.173	0.170
-8							0.397	0.400
CCV					25			0.423
CCB					1			0.000
SL2079-9					20		0.290	0.280
-9 P.D.S					1			0.623
-9 S.D					4		0.062	0.060
-9 InsolMS					1.0			0.637
-9 SolMS					20		0.214	0.674
-10	1438				1		0.33~~4~~ AP	0.373

Notes:

Analyst: ZF / AP	**Date:** 3/22/18
Checked By:	**Date:** 03/29/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID — **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:			
Cal Std. Source ID (K2Cr2O7):	P4 ug/mL	**CCV ID:**	P4 ug/mL
LCS Stock ID:	ug/mL	**ICV ID:**	ug/mL
Reagents:		**Phosphate Buffer ID:**	
Diphenylcarbazide Solution ID:		**10% H2SO4 ID:**	
Alkaline Digestion Reagent ID:		**Alkaline Digestion Reagent pH:**	
SW 3060A Leachate Generation Date:		**Filtration End Time:**	

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL2079-11	1439		✓	✓	20	25	0.189	0.189
1 -12							0.197	0.186
SL2133-2								0.003
1 -4					1			0.003
CCV					25			0.418
CCB					1			0.000
SL2133-6					20			0.005
-8								0.008
-10								0.008
-15							0.163	0.152
-16							0.133	0.143
-17							0.151	0.151
-19							0.134	0.142
-19 P.D.S					1			0.469
-19 S.D.					4		0.032	0.032
2 -19 Insolms					1.0			0.760
CCV					25			0.421
CCB					1			0.000
SL2133-19 Solms					20		0.145	0.612
-21							0.085	0.092
AP ~~B~~ 1 -22	15:21		1	1	1	1	0.129	0.133

Notes:

Analyst: ZF/AP **Date:** 3/22/18

Checked By: [signature] **Date:** 03/29/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): P4 **ug/mL**	**CCV ID:** P4 **ug/mL**
LCS Stock ID: **ug/mL**	**ICV ID:** **ug/mL**
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
Blank 2	15:22		✓	✓	20	25		0.001
LCS 2	↓		↓	↓	↓	↓		0.616
CCV					25			0.419
0.000 / CCB	15:24		↓	↓	↓			0.000
0.010			✓	✓	25			0.009
0.025			↓	↓	↓			0.023
0.050								0.044
0.10								0.068
0.250								0.215
0.500								0.427
0.750	↓							0.633
1.000	1528		↓	↓	↓	↓		0.839
			AP	3/23/18				

Notes:

Analyst: ZF / AP	**Date:** 3/22/18
Checked By:	**Date:** 03/29/18

W7,W8

Katahdin Analytical Services, Inc. — **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike — **LCS/Spiking Information:**

- ☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
- ☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
- ☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
- ☐ ☐ _____ Spike (ID/Vol):_____/_____mL
- ☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID: 1124016031

Hot Plate/Block ID : O

Start Time/Temp.: 1215 / 90.0 °C

End Time/Temp. : 1315 / 92.2 °C

Thermometer ID/Pos.:_____/_____

Filter Paper:_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC21CRS1	2.5	g	0.1	L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
LCS	LC21CRS1	1	g		L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
SL2079-1	LC21CRS1	2.4493	g		L	SL	CR	AP	03/21/2018						
SL2079-10	LC21CRS1	2.5301	g		L	SL	CR	AP	03/21/2018						
SL2079-11	LC21CRS1	2.5542	g		L	SL	CR	AP	03/21/2018						
SL2079-12	LC21CRS1	2.5784	g		L	SL	CR	AP	03/21/2018						
SL2079-13	LC21CRS1	2.5734	g	N/A Prediget*	SL	CR	AP	03/21/2018							
SL2079-2	LC21CRS1	2.4200	g	0.1	L	SL	CR	AP	03/21/2018						
SL2079-3	LC21CRS1	2.4806	g		L	SL	CR	AP	03/21/2018						
SL2079-4	LC21CRS1	2.4887	g		L	SL	CR	AP	03/21/2018						
SL2079-5	LC21CRS1	2.5947	g		L	SL	CR	AP	03/21/2018						
SL2079-6	LC21CRS1	2.4717	g		L	SL	CR	AP	03/21/2018						
SL2079-7	LC21CRS1	2.5181	g		L	SL	CR	AP	03/21/2018						
SL2079-8	LC21CRS1	2.5669	g		L	SL	CR	AP	03/21/2018						
SL2079-9	LC21CRS1	2.5133	g		L	SL	CR	AP	03/21/2018						
SL2079-9 INSOL MS	LC21CRS1	2.4685	g		L	SL	CR	AP	03/21/2018						
SL2079-9 SOL MS	LC21CRS1	2.4430	g		L	SL	CR	AP	03/21/2018						
SL2133-10	LC21CRS1	2.4626	g		L	SL	CR	AP	03/21/2018						
SL2133-14	LC21CRS1	2.5022	g	*	L	SL	CR	AP	03/21/2018						
SL2133-15	LC21CRS1	2.4777	g		L	SL	CR	AP	03/21/2018						
SL2133-2	LC21CRS1	2.4622	g		L	SL	CR	AP	03/21/2018						
SL2133-4	LC21CRS1	2.5375	g		L	SL	CR	AP	03/21/2018						
SL2133-6	LC21CRS1	2.4223	g		L	SL	CR	AP	03/21/2018						
SL2133-8	LC21CRS1	2.5693	g		L	SL	CR	AP	03/21/2018						

Insoluble MS spiked w/ 0.0165g $PbCrO_4$ (SLC3761)

LCS & Soluble MS spiked w/ 0.10mL 1000 mg/L Cr6+ Std (SLC 4101)

* Prediget

QA-065-Revision 1 - 09/23/2010

Digestion performed by: ZF/AP On: 3/21/18

Reviewed 03/09/18

Page: LC075 Revision: 00

Katahdin Analytical Services 5000030

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
☐ ☐ _____ Spike (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID: 1124016031

Hot Plate/Block ID : O
Start Time/Temp.: 1215 / 90.0 °C
End Time/Temp. : 1315 / 92.2 °C
Thermometer ID/Pos.:_____/_____

Filter Paper:_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC21CRS2	2.5	g	0.10	L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
LCS	LC21CRS2	1	g		L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
SL2133-16	LC21CRS2	2.5307	g		L	SL	CR	AP	03/21/2018						
SL2133-17	LC21CRS2	2.4659	g		L	SL	CR	AP	03/21/2018						
SL2133-19	LC21CRS2	2.5021	g		L	SL	CR	AP	03/21/2018						
SL2133-19 INSOL MS	LC21CRS2	2.4029	g		L	SL	CR	AP	03/21/2018						
SL2133-19 SOL MS	LC21CRS2	2.4065	g		L	SL	CR	AP	03/21/2018						
SL2133-21	LC21CRS2	2.4801	g		L	SL	CR	AP	03/21/2018						
SL2133-22	LC21CRS2	2.4317	g		L	SL	CR	AP	03/21/2018						

Insoluble MS spiked w/ 0.0142g $PbCrO_4$ (SLL 3761)
LCS & Soluble MS spiked w/ 0.10 mL 1000 mg/L Cr^{6+} Std (SLL 4101)

Digestion performed by: ZF/AP On: 3/21/18
Reviewed 03/29/18

Katahdin Analytical Services 5000031

Samplenum	Measuredate	Parameter	Result	Moisture
SL2133-2	19-MAR-18	TOTAL SOLIDS	79.502%	20.498%
SL2133-1	19-MAR-18	TOTAL SOLIDS	76.337%	23.663%
SL2133-3	19-MAR-18	TOTAL SOLIDS	77.984%	22.016%
SL2133-4	19-MAR-18	TOTAL SOLIDS	80.709%	19.291%
SL2133-5	19-MAR-18	TOTAL SOLIDS	74.579%	25.421%
SL2133-6	19-MAR-18	TOTAL SOLIDS	76.982%	23.018%
SL2133-7	19-MAR-18	TOTAL SOLIDS	76.124%	23.876%
SL2133-8	19-MAR-18	TOTAL SOLIDS	79.407%	20.593%
SL2133-9	19-MAR-18	TOTAL SOLIDS	76.662%	23.338%
SL2133-10	19-MAR-18	TOTAL SOLIDS	77.523%	22.477%
SL2133-11	19-MAR-18	TOTAL SOLIDS	76.236%	23.764%
SL2133-12	19-MAR-18	TOTAL SOLIDS	79.146%	20.854%
SL2133-13	19-MAR-18	TOTAL SOLIDS	75.237%	24.763%
SL2133-14	19-MAR-18	TOTAL SOLIDS	84.659%	15.341%
SL2133-15	19-MAR-18	TOTAL SOLIDS	80.517%	19.483%
SL2133-16	19-MAR-18	TOTAL SOLIDS	77.228%	22.772%
SL2133-17	19-MAR-18	TOTAL SOLIDS	78.289%	21.711%
SL2133-18	19-MAR-18	TOTAL SOLIDS	77.045%	22.955%
SL2133-19	19-MAR-18	TOTAL SOLIDS	78.532%	21.468%
SL2133-21	19-MAR-18	TOTAL SOLIDS	81.37%	18.63%
SL2133-22	19-MAR-18	TOTAL SOLIDS	79.049%	20.951%

Samplenum	Measuredate	Parameter	Result	Moisture
SL2079-1	23-MAR-18	TOTAL SOLIDS	81.061%	18.939%
SL2079-2	23-MAR-18	TOTAL SOLIDS	86.094%	13.906%
SL2079-3	23-MAR-18	TOTAL SOLIDS	83.644%	16.356%
SL2079-4	23-MAR-18	TOTAL SOLIDS	79.677%	20.323%
SL2079-5	23-MAR-18	TOTAL SOLIDS	83.03%	16.97%
SL2079-6	23-MAR-18	TOTAL SOLIDS	79.823%	20.177%
SL2079-7	23-MAR-18	TOTAL SOLIDS	78.799%	21.201%
SL2079-8	23-MAR-18	TOTAL SOLIDS	82.852%	17.148%
SL2079-9	23-MAR-18	TOTAL SOLIDS	74.61%	25.39%
SL2079-10	23-MAR-18	TOTAL SOLIDS	81.336%	18.664%
SL2079-11	23-MAR-18	TOTAL SOLIDS	78.549%	21.451%
SL2079-12	23-MAR-18	TOTAL SOLIDS	77.967%	22.033%
SL2079-13	23-MAR-18	TOTAL SOLIDS	82.909%	17.091%

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

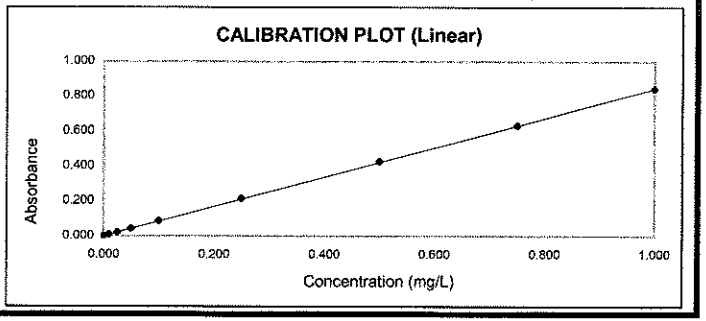
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



Katahdin Analytical Services 5000034

SAMPLE ANALYSIS

CCV Source Standard ID:	W16186	**Spreadsheet File Name:**	3/27/18.xls
CCV Source Std. Conc. (mg/L):	25	**Sample Anal. Date:**	3/27/2018
		Sample Analyst:	AP

ANALYSIS INFORMATION									DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5000	0.100	100.000%		0.26		
LCS A	20.0	25.0	1.250	0.641		0.641	0.760	0.950	2.5000	0.100	100.000%	0.100	38.01	40.00	95.0%
SL2079-9	20.0	25.0	1.250	0.163	0.165	-0.002	-0.005	-0.007	2.5958	0.100	74.610%		-0.35		
SL2079-9 Post-Dig MS	20.0	25.0	1.250	0.549	0.162	0.387	0.458								91.6%
SL2079-9 Serial Dilution	4.0	25.0	6.250	0.033	0.034	-0.001	-0.004	-0.027	2.5958	0.100	74.610%		-1.37		
SL2079-9 Insoluble MS	1.0	25.0	25.000	0.823		0.823	0.977	24.423	2.4558	0.100	74.610%	2.976	1332.92	1624.45	82.1%
SL2079-9 Soluble MS	20.0	25.0	1.250	0.758	0.355	0.403	0.477	0.596	2.4679	0.100	74.610%	0.100	32.37	54.31	59.6%
SL2079-13	20.0	25.0	1.250	0.274	0.266	0.008	0.006	0.008	2.4608	0.100	82.909%		0.40		
SL2133-14	20.0	25.0	1.250	0.106	0.102	0.004	0.002	0.002	2.5118	0.100	84.659%		0.10		
SL2133-19	20.0	25.0	1.250	0.169	0.169	0.000	-0.003	-0.004	2.4941	0.100	78.532%		-0.19		
CCV	25.0	25.0	1.000	0.431		0.431	0.510	0.510							102.0%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-19 Post-Dig MS	20.0	25.0	1.250	0.499	0.169	0.330	0.390								78.0%
SL2133-19 Serial Dilution	4.0	25.0	6.250	0.036	0.032	0.004	0.002	0.011	2.4941	0.100	78.532%		0.55		
SL2133-19 Insoluble MS	1.0	25.0	25.000	0.569		0.569	0.674	16.862	2.4058	0.100	78.532%	2.011	892.47	1064.46	83.8%
SL2133-19 Soluble MS	20.0	25.0	1.250	0.440	0.073	0.367	0.434	0.542	2.4197	0.100	78.532%	0.100	28.55	52.62	54.2%
SL2329-1	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.5025	0.100	80.366%		0.70		
SL2329-2	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.4208	0.100	79.673%		0.42		
SL2329-3	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.4263	0.100	85.387%		0.53		
SL2329-4	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4279	0.100	79.142%		0.50		
SL2329-5	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.4771	0.100	80.067%		0.71		
SL2329-6	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.5742	0.100	79.025%		0.54		
CCV	25.0	25.0	1.000	0.430		0.430	0.509	0.509							101.8%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-7	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.4455	0.100	82.001%		0.33		
SL2329-8	20.0	25.0	1.250	0.081	0.055	0.026	0.028	0.035	2.5446	0.100	79.381%		1.73		
SL2329-8 Post-Dig MS	20.0	25.0	1.250	0.496	0.055	0.441	0.522								104.4%
SL2329-8 Serial Dilution	4.0	25.0	6.250	0.038	0.038	0.000	-0.003	-0.019	2.5446	0.100	79.381%		-0.94		
SL2329-8 Insoluble MS	1.0	25.0	25.000	0.470		0.470	0.557	13.915	2.4295	0.100	79.381%	1.915	721.51	992.75	72.5%
SL2329-8 Soluble MS	20.0	25.0	1.250	0.402	0.064	0.338	0.399	0.499	2.4292	0.100	79.381%	0.100	25.89	51.86	46.6%
SL2329-9	20.0	25.0	1.250	0.081	0.072	0.009	0.008	0.010	2.4973	0.100	78.204%		0.49		
SL2329-10	20.0	25.0	1.250	0.079	0.074	0.005	0.003	0.004	2.5657	0.100	74.087%		0.19		
SL2329-11	20.0	25.0	1.250	0.051	0.046	0.005	0.003	0.004	2.5940	0.100	74.631%		0.19		
SL2329-12	20.0	25.0	1.250	0.161	0.167	-0.006	-0.010	-0.013	2.5737	0.100	76.688%		-0.65		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-13	20.0	25.0	1.250	0.085	0.074	0.011	0.010	0.013	2.5447	0.100	77.242%		0.64		
SL2329-14	20.0	25.0	1.250	0.074	0.069	0.005	0.003	0.004	2.4354	0.100	73.421%		0.20		
SL2329-17	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5857	0.100	80.322%		0.32		
SL2329-18	20.0	25.0	1.250	0.070	0.065	0.005	0.003	0.004	2.4370	0.100	76.853%		0.19		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000035

WG225555 R466595

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): ug/mL	**CCV ID:** ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:** 13.07
SW 3060A Leachate Generation Date: 3/26/18	**Filtration End Time:** 1745

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1530		✓	✓	25	25		0.434
~~ICB~~ CCV					1	1		0.434
~~B to~~ CCB					1	1		0.000
Blank					20	25		0.007
LCS								0.641
SL2079-9							0.165	0.163
-9 P.D.S								0.549
-9 S.D.					4.00		0.034	0.033
-9 Insol MS					1.00			0.823
-9 Sol MS					20		0.355	0.758
-13					20		0.266	0.274
SL2133-14					1		0.102	0.106
1 -19					1		0.169	0.169
CCV					25			0.431
CCB					1			0.000
SL2133-19 P.D.S					20			0.499
-19 S.D					4.00		0.032	0.036
-19 Insol MS					1.00		~~0.055~~	0.569
-19 Sol MS					20	* 0.073	~~0.190~~	~~0.580~~ * 0.440
SL2329-1								~~0.12~~ 0.012
1 -2					1	1		0.008

HP 3/27/18

HP 3/27/18

Notes:

Analyst: HP	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID ($K_2Cr_2O_7$): p7 ug/mL	**CCV ID:** p7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H_2SO_4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL2329-3			✓	✓	20	25		0.010
-4								0.009
-5								0.012
-6					1			0.010
ccv					25			0.430
ccb					1			0.000
SL2329-7					20		(0.055)	0.007
-8					1		*~~0.166~~	~~0.157~~ * 0.08
-8 P.D.S					1			0.496
-8 S.D					4.00		0.038	0.038
-8 Insol/MS					1.00			0.470
-8 Sol/MS					20	0.05 *	~~0.194~~	~~0.542~~ 0.402
-9							0.072	0.081
-10						0.07 *	~~0.160~~ *	~~0.284~~ 0.079
-11							0.046	0.051
-12					1		0.167	0.161
ccv					25			0.425
ccb					1			0.000
SL2329-13					20	* 0.074	~~0.236~~	~~0.187~~ * 0.08
-14					1	* 0.069	~~0.206~~	0.245 0.07
-15 17					1	2		0.907 *

3/27/18

Notes: * sample centrifuged & reanalyzed on spec.

Analyst: AT	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): p7 ug/mL	**CCV ID:** p7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL232418			✓	✓	20	25	~~0.151~~ +0.065	~~0.213~~ 0.07
CCV					25			0.425
CCB	1636							0.000

AP 3/28/18

Notes:

Analyst: AP	**Date:** 3/27/18
Checked By: [signature]	**Date:** 04/02/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
☐ ☐ _____ Spike (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS:_____ Balance ID:_____

Hot Plate/Block ID:_____
Start Time/Temp.: 1220 / 90 °C
End Time/Temp.: 1320 / 93 °C
Thermometer ID/Pos.:_____/_____

Filter Paper:_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC26CRS1	2.5	g	0.10	L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
LCS	LC26CRS1	2.5	g		L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
SL2079-13	LC26CRS1	2.4608	g		L	SL	CR	AP	03/26/2018						
* SL2079-9	LC26CRS1	2.5958	g		L	SL	CR	AP	03/26/2018						
0.0185g SL2079-9 INSOL MS	LC26CRS1	2.4558	g		L	SL	CR	AP	03/26/2018						
SL2079-9 SOL MS	LC26CRS1	2.4679	g		L	SL	CR	AP	03/26/2018						
SL2133-14	LC26CRS1	2.5118	g		L	SL	CR	AP	03/26/2018						
* SL2133-19	LC26CRS1	2.4941	g		L	SL	CR	AP	03/26/2018						
0.0125g SL2133-19 INSOL MS	LC26CRS1	2.4058	g		L	SL	CR	AP	03/26/2018						
SL2133-19 SOL MS	LC26CRS1	2.4197	g		L	SL	CR	AP	03/26/2018						
SL2329-1	LC26CRS1	2.5025	g		L	SL	CR	AP	03/26/2018						
SL2329-10	LC26CRS1	~~2.4107~~ 2.5057	g		L	SL	CR	AP	03/26/2018						
SL2329-11	LC26CRS1	2.5940	g		L	SL	CR	AP	03/26/2018						
SL2329-12	LC26CRS1	2.5737	g		L	SL	CR	AP	03/26/2018						
SL2329-13	LC26CRS1	2.5447	g		L	SL	CR	AP	03/26/2018						
SL2329-14	LC26CRS1	2.4354	g		L	SL	CR	AP	03/26/2018						
SL2329-17	LC26CRS1	2.5857	g		L	SL	CR	AP	03/26/2018						
SL2329-18	LC26CRS1	2.4370	g		L	SL	CR	AP	03/26/2018						
SL2329-2	LC26CRS1	2.4208	g		L	SL	CR	AP	03/26/2018						
SL2329-3	LC26CRS1	2.4263	g		L	SL	CR	AP	03/26/2018						
SL2329-4	LC26CRS1	2.4279	g		L	SL	CR	AP	03/26/2018						
SL2329-5	LC26CRS1	2.4771	g		L	SL	CR	AP	03/26/2018						
SL2329-6	LC26CRS1	2.5743	g		L	SL	CR	AP	03/26/2018						
SL2329-7	LC26CRS1	2.4455	g		L	SL	CR	AP	03/26/2018						
* SL2329-8	LC26CRS1	2.5446	g		L	SL	CR	AP	03/26/2018						
0.0119g SL2329-8 INSOL MS	LC26CRS1	2.4295	g		L	SL	CR	AP	03/26/2018						
SL2329-8 SOL MS	LC26CRS1	2.4295	g		L	SL	CR	AP	03/26/2018						
SL2329-9	LC26CRS1	~~2.4197~~ 2.4973	g		L	SL	CR	AP	03/26/2018						

*Insol MS spiked w/ PbCrO4 (SLC3761)
Soluble MS & LCS spiked w/ 0.10mL Cr6+ Std (SLC4101)

Digestion performed by: AP On: 3/26/18

Katahdin Analytical Services 5000039

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 11:57 am
Batch: WG225555

Parameter: Chromium, Hexavalent

Prep Date: 26-MAR-18

Date Analyzed: 27-MAR-18

Prep Method: SW846 3060A

Analyst Initials: AP

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL2079-13	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.4	J0.40 mg/Kgdrywt	83.	.4	0.18	0.59		
SL2133-14	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.1	U0.34 mg/Kgdrywt	85.	.4	0.17	0.56		
SL2329-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.7	0.70 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2329-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	J0.19 mg/Kgdrywt	74.	.4	0.19	0.63		
SL2329-11	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	J0.19 mg/Kgdrywt	75.	.4	0.18	0.62		
SL2329-12	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.65	U0.36 mg/Kgdrywt	77.	.4	0.18	0.61		
SL2329-13	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.64	0.64 mg/Kgdrywt	77.	.4	0.18	0.61		
SL2329-14	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.2	U0.20 mg/Kgdrywt	73.	.4	0.20	0.67		
SL2329-17	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.32	J0.32 mg/Kgdrywt	80.	.4	0.17	0.58		
SL2329-18	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	J0.19 mg/Kgdrywt	77.	.4	0.19	0.64		
SL2329-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.42	J0.42 mg/Kgdrywt	80.	.4	0.19	0.62		
SL2329-3	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.53	J0.53 mg/Kgdrywt	85.	.4	0.17	0.58		
SL2329-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.5	J0.50 mg/Kgdrywt	79.	.4	0.19	0.62		
SL2329-5	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.71	0.71 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2329-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.54	J0.54 mg/Kgdrywt	79.	.4	0.18	0.59		
SL2329-7	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.33	J0.33 mg/Kgdrywt	82.	.4	0.18	0.60		
SL2329-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	1.73	1.7 mg/Kgdrywt	76.	.4	0.18	0.62		
SL2329-9	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.49	J0.49 mg/Kgdrywt	78.	.4	0.18	0.61		
WG225555-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	.26	J0.26 mg/Kgdrywt	NA	.4	0.14	0.48		
WG225555-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	38.01	38. mg/Kgdrywt	NA	.4	0.14	0.48		95
WG225555-5	MS	SW846 7196A	1.0000mL	25.000mL	25	721.51	720 mg/Kgdrywt	NA	.4	4.0	13.		72
WG225555-6	MS	SW846 7196A	20.000mL	25.000mL	1.2	25.89	26. mg/Kgdrywt	NA	.4	0.19	0.65		46

Comments:

SL2329-1	VOA vials received on 03/22/18
SL2329-10	VOA vials received on 03/22/18
SL2329-11	VOA vials received on 03/22/18
SL2329-12	VOA vials received on 03/22/18
SL2329-13	VOA vials received on 03/22/18
SL2329-14	VOA vials received on 03/22/18
SL2329-17	VOA vials received on 03/22/18
SL2329-18	VOA vials received on 03/22/18
SL2329-2	VOA vials received on 03/22/18
SL2329-3	VOA vials received on 03/22/18
SL2329-4	VOA vials received on 03/22/18
SL2329-5	VOA vials received on 03/22/18
SL2329-6	VOA vials received on 03/22/18
SL2329-7	VOA vials received on 03/22/18
SL2329-8	MS/MSD, VOA vials received on 03/22/18
SL2329-9	VOA vials received on 03/22/18
WG225555-1	SL2329-7
WG225555-2	SL2329-7

Entered by: AP Date: 4/2/18 Accepted by: [signature] Date: 04/02/18 ✓

Katahdin Analytical Services 5000040

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 11:57 am
Batch: WG225555

WG225555-5	SL2329-8
WG225555-6	SL2329-8

Entered by: AB Date: 4/2/18 Accepted by: [signature] Date: 04/02/18

Katahdin Analytical Services 5000041

Samplenum	Measuredate	Parameter	Result	Moisture
SL2079-1	23-MAR-18	TOTAL SOLIDS	81.061%	18.939%
SL2079-2	23-MAR-18	TOTAL SOLIDS	86.094%	13.906%
SL2079-3	23-MAR-18	TOTAL SOLIDS	83.644%	16.356%
SL2079-4	23-MAR-18	TOTAL SOLIDS	79.677%	20.323%
SL2079-5	23-MAR-18	TOTAL SOLIDS	83.03%	16.97%
SL2079-6	23-MAR-18	TOTAL SOLIDS	79.823%	20.177%
SL2079-7	23-MAR-18	TOTAL SOLIDS	78.799%	21.201%
SL2079-8	23-MAR-18	TOTAL SOLIDS	82.852%	17.148%
SL2079-9	23-MAR-18	TOTAL SOLIDS	74.61%	25.39%
SL2079-10	23-MAR-18	TOTAL SOLIDS	81.336%	18.664%
SL2079-11	23-MAR-18	TOTAL SOLIDS	78.549%	21.451%
SL2079-12	23-MAR-18	TOTAL SOLIDS	77.967%	22.033%
SL2079-13	23-MAR-18	TOTAL SOLIDS	82.909%	17.091%

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

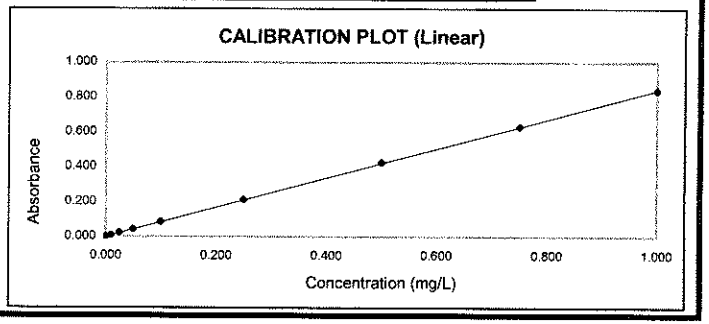
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



Katahdin Analytical Services 5000043

SAMPLE ANALYSIS		Spreadsheet File Name:	3/27/18.xls
CCV Source Standard ID:	W16186	Sample Anal. Date:	3/27/2018
CCV Source Std. Conc. (mg/L):	25	Sample Analyst:	AP

	ANALYSIS INFORMATION								DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5000	0.100	100.000%		0.26		
LCS A	20.0	25.0	1.250	0.641		0.641	0.760	0.950	2.5000	0.100	100.000%	0.100	38.01	40.00	95.0%
SL2079-9	20.0	25.0	1.250	0.163	0.165	-0.002	-0.005	-0.007	2.5958	0.100	74.610%		-0.35		
SL2079-9 Post-Dig MS	20.0	25.0	1.250	0.549		0.549	0.651								130.1%
SL2079-9 Serial Dilution	4.0	25.0	6.250	0.033	0.034	-0.001	-0.004	-0.027	2.5958	0.100	74.610%		-1.37		
SL2079-9 Insoluble MS	1.0	25.0	25.000	0.823		0.823	0.977	24.423	2.4558	0.100	74.610%	2.976	1332.92	1624.45	82.1%
SL2079-9 Soluble MS	20.0	25.0	1.250	0.758	0.355	0.403	0.477	0.596	2.4679	0.100	74.610%	0.100	32.37	54.31	59.6%
SL2079-13	20.0	25.0	1.250	0.274	0.266	0.008	0.006	0.008	2.4608	0.100	82.909%		0.40		
SL2133-14	20.0	25.0	1.250	0.106	0.102	0.004	0.002	0.002	2.5118	0.100	84.659%		0.10		
SL2133-19	20.0	25.0	1.250	0.169	0.169	0.000	-0.003	-0.004	2.4941	0.100	78.532%		-0.19		
CCV	25.0	25.0	1.000	0.431		0.431	0.510	0.510							102.0%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-19 Post-Dig MS	20.0	25.0	1.250	0.499		0.499	0.591								118.2%
SL2133-19 Serial Dilution	4.0	25.0	6.250	0.036	0.032	0.004	0.002	0.011	2.4941	0.100	78.532%		0.55		
SL2133-19 Insoluble MS	1.0	25.0	25.000	0.569		0.569	0.674	16.862	2.4058	0.100	78.532%	2.011	892.47	1064.46	83.8%
SL2133-19 Soluble MS	20.0	25.0	1.250	0.440	0.073	0.367	0.434	0.542	2.4197	0.100	78.532%	0.100	28.55	52.62	54.2%
SL2329-1	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.5025	0.100	80.366%		0.70		
SL2329-2	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.4208	0.100	79.673%		0.42		
SL2329-3	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.4263	0.100	85.387%		0.53		
SL2329-4	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4279	0.100	79.142%		0.50		
SL2329-5	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.4771	0.100	80.067%		0.71		
SL2329-6	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.5742	0.100	79.025%		0.54		
CCV	25.0	25.0	1.000	0.430		0.430	0.509	0.509							101.8%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-7	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.4455	0.100	82.001%		0.33		
SL2329-8	20.0	25.0	1.250	0.081	0.055	0.026	0.028	0.035	2.5446	0.100	79.381%		1.73		
SL2329-8 Post-Dig MS	20.0	25.0	1.250	0.496		0.496	0.588								117.5%
SL2329-8 Serial Dilution	4.0	25.0	6.250	0.038	0.038	0.000	-0.003	-0.019	2.5446	0.100	79.381%		-0.94		
SL2329-8 Insoluble MS	1.0	25.0	25.000	0.470		0.470	0.557	13.915	2.4295	0.100	79.381%	1.915	721.51	992.75	72.5%
SL2329-8 Soluble MS	20.0	25.0	1.250	0.402	0.064	0.338	0.399	0.499	2.4292	0.100	79.381%	0.100	25.89	51.86	46.6%
SL2329-9	20.0	25.0	1.250	0.081	0.072	0.009	0.008	0.010	2.4973	0.100	78.204%		0.49		
SL2329-10	20.0	25.0	1.250	0.079	0.074	0.005	0.003	0.004	2.5657	0.100	74.087%		0.19		
SL2329-11	20.0	25.0	1.250	0.051	0.046	0.005	0.003	0.004	2.5940	0.100	74.631%		0.19		
SL2329-12	20.0	25.0	1.250	0.161	0.167	-0.006	-0.010	-0.013	2.5737	0.100	76.688%		-0.65		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-13	20.0	25.0	1.250	0.085	0.074	0.011	0.010	0.013	2.5447	0.100	77.242%		0.64		
SL2329-14	20.0	25.0	1.250	0.074	0.069	0.005	0.003	0.004	2.4354	0.100	73.421%		0.20		
SL2329-17	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5857	0.100	80.322%		0.32		
SL2329-18	20.0	25.0	1.250	0.070	0.065	0.005	0.003	0.004	2.4370	0.100	76.853%		0.19		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000044

LG22555 R466595

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): LL6186 25 ug/mL	**CCV ID:** LL6186 25 ug/mL
LCS Stock ID: SLL4101 1000 ug/mL	**ICV ID:** LL6187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** LL4990
Diphenylcarbazide Solution ID: LL6304	**10% H2SO4 ID:** LL6318
Alkaline Digestion Reagent ID: LL6301	**Alkaline Digestion Reagent pH:** 13.07
SW 3060A Leachate Generation Date: 3/26/18	**Filtration End Time:** 1745

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1530		✓	✓	25	25		0.434
HP 3/27/18 ~~ICB~~ CCV					1	1		0.434
~~Blo~~ CCB					1	1		0.000
Blank					20	25		0.007
LCS								0.641
SL2079-9							0.165	0.163
-9 P.D.S								0.549
-9 S.D.					4.00		0.034	0.033
-9 lab s/ms					1.00			0.823
-9 Sol MS					20		0.355	0.758
-13					20		0.266	0.274
SL2133-14							0.102	0.106
-19							0.169	0.169
CCV					25			0.431
CCB					1			0.000
SL2133-19 P.D.S					20			0.499
-19 S.D					4.00		0.032	0.036
-19 lab s/ms					1.00		~~HP 0.055~~	0.569
-19 Sol ms					20		*0.073 ~~0.190~~	~~0.580~~ *0.440
HP 3/27/18 SL2329-1								~~0.12~~ 0.012
-2								0.008

Notes:

Analyst: HP **Date:** 3/27/18

Checked By: [signature] **Date:** 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): p7 ug/mL	**CCV ID:** p7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL2329-3			✓	✓	20	25		0.010
-4								0.009
-5								0.012
-6								0.010
ccv					25			0.430
ccb								0.000
SL2329-7					20		(0.055)	0.007 *
-8						*	~~0.166~~	~~0.157~~ 0.081 *
-8 P.D.S								0.496
-8 S.D					4.00		0.038	0.038
-8 Insol MS					1.00			0.470
-8 Sol MS					20	0.06 *	~~0.144~~	~~0.542~~ 0.402 *
-9							0.072	0.081
-10						0.07 *	~~0.160~~	~~0.224~~ 0.079 *
-11							0.046	0.051
-12							0.167	0.161
ccv					25			0.425
ccb								0.000
SL2329-13					20	* 0.074	~~0.236~~ ~~0.236~~	~~0.187~~ 0.085 *
-14						* 0.069	~~0.206~~	~~0.245~~ 0.074
-18 17								0.907 *

3/27/18

Notes: * sample centrifuged & reanalyzed on spec.

Analyst:	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): P7 ug/mL	**CCV ID:** P7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL232418			✓	✓	20	25	~~0.151~~ +0.065	~~0.213~~ 0.070 *
ccv			↓	↓	25	↓		0.425
CCB	1636		↓	↓	2	↓		0.000
					3/26/18			
				HP				

Notes:

Analyst: HP	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
☐ ☐ _____ Spike (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID:_____

Hot Plate/Block ID :_____ Filter Paper:_____
Start Time/Temp.: 1220 / 90 °C
End Time/Temp. : 1320 / 93 °C
Thermometer ID/Pos.:_____/_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC26CRS1	2.5	g	0.10	L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
LCS	LC26CRS1	2.5	g		L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
SL2079-13	LC26CRS1	2.4608	g		L	SL	CR	AP	03/26/2018						
* SL2079-9	LC26CRS1	2.5958	g		L	SL	CR	AP	03/26/2018						
0.0185g SL2079-9 INSOL MS	LC26CRS1	2.4558	g		L	SL	CR	AP	03/26/2018						
SL2079-9 SOL MS	LC26CRS1	2.4679	g		L	SL	CR	AP	03/26/2018						
SL2133-14	LC26CRS1	2.5118	g		L	SL	CR	AP	03/26/2018						
* SL2133-19	LC26CRS1	2.4941	g		L	SL	CR	AP	03/26/2018						
0.0125g SL2133-19 INSOL MS	LC26CRS1	2.4058	g		L	SL	CR	AP	03/26/2018						
SL2133-19 SOL MS	LC26CRS1	2.4197	g		L	SL	CR	AP	03/26/2018						
SL2329-1	LC26CRS1	2.5025	g		L	SL	CR	AP	03/26/2018						
SL2329-10	LC26CRS1	~~2.4107~~ 2.5157	g		L	SL	CR	AP	03/26/2018						
SL2329-11	LC26CRS1	2.5940	g		L	SL	CR	AP	03/26/2018						
SL2329-12	LC26CRS1	2.5737	g		L	SL	CR	AP	03/26/2018						
SL2329-13	LC26CRS1	2.5447	g		L	SL	CR	AP	03/26/2018						
SL2329-14	LC26CRS1	2.4354	g		L	SL	CR	AP	03/26/2018						
SL2329-17	LC26CRS1	2.5857	g		L	SL	CR	AP	03/26/2018						
SL2329-18	LC26CRS1	2.4370	g		L	SL	CR	AP	03/26/2018						
SL2329-2	LC26CRS1	2.4208	g		L	SL	CR	AP	03/26/2018						
SL2329-3	LC26CRS1	2.4263	g		L	SL	CR	AP	03/26/2018						
SL2329-4	LC26CRS1	2.4279	g		L	SL	CR	AP	03/26/2018						
SL2329-5	LC26CRS1	2.4771	g		L	SL	CR	AP	03/26/2018						
SL2329-6	LC26CRS1	2.5742	g		L	SL	CR	AP	03/26/2018						
SL2329-7	LC26CRS1	2.4455	g		L	SL	CR	AP	03/26/2018						
* SL2329-8	LC26CRS1	2.5446	g		L	SL	CR	AP	03/26/2018						
0.0119g SL2329-8 INSOL MS	LC26CRS1	2.4295	g		L	SL	CR	AP	03/26/2018						
SL2329-8 SOL MS	LC26CRS1	2.4292	g		L	SL	CR	AP	03/26/2018						
SL2329-9	LC26CRS1	~~2.4977~~ 2.4973	g		L	SL	CR	AP	03/26/2018						

*Insol MS spiked w/ PbCrO4 (SLC3761)
Soluble MS & LCS spiked w/ 0.10mL Cr6+ Std (SLC4101)

Reviewed 04/02/18

Digestion performed by: AP **On:** 3/26/18

Katahdin Analytical Services 5000048

Samplenum	Measuredate	Parameter	Result	Moisture
SL2133-2	19-MAR-18	TOTAL SOLIDS	79.502%	20.498%
SL2133-1	19-MAR-18	TOTAL SOLIDS	76.337%	23.663%
SL2133-3	19-MAR-18	TOTAL SOLIDS	77.984%	22.016%
SL2133-4	19-MAR-18	TOTAL SOLIDS	80.709%	19.291%
SL2133-5	19-MAR-18	TOTAL SOLIDS	74.579%	25.421%
SL2133-6	19-MAR-18	TOTAL SOLIDS	76.982%	23.018%
SL2133-7	19-MAR-18	TOTAL SOLIDS	76.124%	23.876%
SL2133-8	19-MAR-18	TOTAL SOLIDS	79.407%	20.593%
SL2133-9	19-MAR-18	TOTAL SOLIDS	76.662%	23.338%
SL2133-10	19-MAR-18	TOTAL SOLIDS	77.523%	22.477%
SL2133-11	19-MAR-18	TOTAL SOLIDS	76.236%	23.764%
SL2133-12	19-MAR-18	TOTAL SOLIDS	79.146%	20.854%
SL2133-13	19-MAR-18	TOTAL SOLIDS	75.237%	24.763%
SL2133-14	19-MAR-18	TOTAL SOLIDS	84.659%	15.341%
SL2133-15	19-MAR-18	TOTAL SOLIDS	80.517%	19.483%
SL2133-16	19-MAR-18	TOTAL SOLIDS	77.228%	22.772%
SL2133-17	19-MAR-18	TOTAL SOLIDS	78.289%	21.711%
SL2133-18	19-MAR-18	TOTAL SOLIDS	77.045%	22.955%
SL2133-19	19-MAR-18	TOTAL SOLIDS	78.532%	21.468%
SL2133-21	19-MAR-18	TOTAL SOLIDS	81.37%	18.63%
SL2133-22	19-MAR-18	TOTAL SOLIDS	79.049%	20.951%

Samplenum	Measuredate	Parameter	Result	Moisture
SL2329-1	22-MAR-18	TOTAL SOLIDS	80.366%	19.634%
SL2329-2	22-MAR-18	TOTAL SOLIDS	79.673%	20.327%
SL2329-3	22-MAR-18	TOTAL SOLIDS	85.387%	14.613%
SL2329-4	22-MAR-18	TOTAL SOLIDS	79.142%	20.858%
SL2329-5	22-MAR-18	TOTAL SOLIDS	80.067%	19.933%
SL2329-6	22-MAR-18	TOTAL SOLIDS	79.025%	20.975%
SL2329-7	22-MAR-18	TOTAL SOLIDS	82.001%	17.999%
SL2329-8	22-MAR-18	TOTAL SOLIDS	76.381%	23.619%
SL2329-9	22-MAR-18	TOTAL SOLIDS	78.204%	21.796%
SL2329-10	22-MAR-18	TOTAL SOLIDS	74.087%	25.913%
SL2329-11	22-MAR-18	TOTAL SOLIDS	74.631%	25.369%
SL2329-12	22-MAR-18	TOTAL SOLIDS	76.688%	23.312%
SL2329-13	22-MAR-18	TOTAL SOLIDS	77.242%	22.758%
SL2329-14	22-MAR-18	TOTAL SOLIDS	73.421%	26.579%
SL2329-17	22-MAR-18	TOTAL SOLIDS	80.322%	19.678%
SL2329-18	22-MAR-18	TOTAL SOLIDS	76.853%	23.147%

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

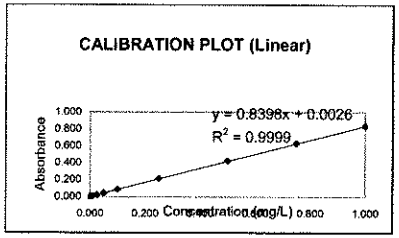
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



SAMPLE ANALYSIS

CCV Source Standard ID:	W16186	**Spreadsheet File Name:**	3/29/18.xls
CCV Source Std. Conc. (mg/L):	25	**Sample Anal. Date:**	3/29/2018
		Sample Analyst:	AP

ANALYSIS INFORMATION									DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.432		0.432	0.511	0.511							102.3%
CCV	25.0	25.0	1.000	0.416		0.416	0.492	0.492							98.5%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.006		0.006	0.004	0.005	2.5000	0.100	100.000%		0.20		
SL2329-8	20.0	25.0	1.250	0.169	0.170	-0.001	-0.004	-0.005	2.5583	0.100	79.381%		-0.26		
SL2329-8 Post-Dig MS	20.0	25.0	1.250	0.531	0.170	0.361	0.427	0.533	2.5583	0.100	79.381%		26.27		85.4%
SL2329-8 Serial Dilution	4.0	25.0	6.250	0.042	0.042	0.000	-0.003	-0.019	2.5583	0.100	79.381%		-0.94		
SL2329-8 Insoluble MS	1.0	25.0	25.000	0.676		0.676	0.802	20.047	2.4008	0.100	79.381%	2.413	1051.90	1266.32	83.1%
SL2329-8 Soluble MS	20.0	25.0	1.250	0.458	0.178	0.280	0.330	0.412	2.4195	0.100	79.381%	0.100	21.48	52.07	41.8%
LCS A	20.0	25.0	1.250	0.624		0.624	0.740	0.925	2.5000	0.100	100.000%	0.100	37.00	40.00	92.5%
CCV	25.0	25.0	1.000	0.415		0.415	0.491	0.491							98.2%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000051

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): W16182 25 ug/mL	**CCV ID:** W16182 25 ug/mL
LCS Stock ID: SWL4101 1000 ug/mL	**ICV ID:** W16187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** W14990
Diphenylcarbazide Solution ID: W16304	**10% H2SO4 ID:** W16331
Alkaline Digestion Reagent ID: W16301	**Alkaline Digestion Reagent pH:** 12.66
SW 3060A Leachate Generation Date: 3/29/18	**Filtration End Time:** 1645

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1721		✓	✓	25	25		0.432
CCV ~~ICB~~								0.416
CCB								0.000
Blank					20			0.006
SL 2329-8							0.170	0.169
-8 P.D.S.								0.531
-8 S.D.					4.00		0.042	0.042
-8 Insol MS					1.000			0.67~~5~~6 AP 3/29/
-8 Sol MS					20		0.178	0.458
LCS								0.624
CCV					25			0.415
CCB	1729							0.000

AP 4/2/18

Notes:

Analyst: AP	**Date:** 3/29/18
Checked By: [signature]	**Date:** 04/02/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060 W7, W8

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL Hot Plate/Block ID :_____ Filter Paper:_____

☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL Start Time/Temp.: 1323 / 90 °C

☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL End Time/Temp. : 1423 / 95 °C

☐ ☐ _____ Spike (ID/Vol):_____/_____mL Thermometer ID/Pos.:_____/_____

☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID: 124016031

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC29CRS2	2.50	g	0.10	L	SL	CR	AP	03/29/2018	N/A	N/A	N/A	N/A		
LCS	LC29CRS2	1	g		L	SL	CR	AP	03/29/2018	N/A	N/A	N/A	N/A		
SL2329-8	LC29CRS2	2.5583	g		L	SL	CR	AP	03/29/2018						
SL2329-8 INSOL MS	LC29CRS2	2.4008	g		L	SL	CR	AP	03/29/2018						
SL2329-8 SOL MS	LC29CRS2	2.4195	g	↓	L	SL	CR	AP	03/29/2018						

Insol MS spiked w/ 0.0150g $PbCrO_4$ (SLM3761)

LCS & Soluble MS spiked w/ 0.10mL 1000mg/L Cr^{6+} Stock Std (SLC4101)

Reviewed [illegible] 04/02/18

QA-065-Revision 1 - 09/23/2010 Digestion performed by: AP On: 3/29/18 Page: LC109 Revision: 00

Katahdin Analytical Services 5000053

TOTAL SOLIDS BATCH REPORT
Mar 23 2018, 11:07 am
Batch: WG225260

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL2004-7	SL	SAMP	22-MAR-18	1.3 g	24.1572 g	9.8969 g	9.8969 g	ZF	23-MAR-18	37.6110	38. %		
SL2005-5	SL	SAMP	22-MAR-18	1.3 g	14.6506 g	6.5457 g	6.5457 g	ZF	23-MAR-18	39.2920	39. %		
SL2006-5	SL	SAMP	22-MAR-18	1.3 g	15.4268 g	6.2909 g	6.2909 g	ZF	23-MAR-18	35.3290	35. %		
SL2006-6	SL	SAMP	22-MAR-18	1.3 g	14.4577 g	5.7423 g	5.7423 g	ZF	23-MAR-18	33.7620	34. %		
SL2079-1	SL	SAMP	22-MAR-18	1.3 g	16.7077 g	13.7896 g	13.7896 g	ZF	23-MAR-18	81.0610	81. %		
SL2079-10	SL	SAMP	22-MAR-18	1.3 g	20.045 g	16.5465 g	16.5465 g	ZF	23-MAR-18	81.3360	81. %		
SL2079-11	SL	SAMP	22-MAR-18	1.3 g	20.5917 g	16.4534 g	16.4534 g	ZF	23-MAR-18	78.5490	78. %		
SL2079-12	SL	SAMP	22-MAR-18	1.3 g	23.9142 g	18.9316 g	18.9316 g	ZF	23-MAR-18	77.9670	78. %		
SL2079-13	SL	SAMP	22-MAR-18	1.3 g	21.7574 g	18.261 g	18.261 g	ZF	23-MAR-18	82.9090	83. %		
SL2079-2	SL	SAMP	22-MAR-18	1.3 g	30.7715 g	26.6733 g	26.6733 g	ZF	23-MAR-18	86.0940	86. %		
SL2079-3	SL	SAMP	22-MAR-18	1.3 g	31.6991 g	26.7272 g	26.7272 g	ZF	23-MAR-18	83.6440	84. %		
SL2079-4	SL	SAMP	22-MAR-18	1.3 g	24.4146 g	19.717 g	19.717 g	ZF	23-MAR-18	79.6770	80. %		
SL2079-5	SL	SAMP	22-MAR-18	1.3 g	20.3907 g	17.1511 g	17.1511 g	ZF	23-MAR-18	83.0300	83. %		
SL2079-6	SL	SAMP	22-MAR-18	1.3 g	24.1 g	19.4996 g	19.4996 g	ZF	23-MAR-18	79.8230	80. %		
SL2079-7	SL	SAMP	22-MAR-18	1.3 g	24.1924 g	19.3389 g	19.3389 g	ZF	23-MAR-18	78.7990	79. %		
SL2079-8	SL	SAMP	22-MAR-18	1.3 g	18.8359 g	15.8288 g	15.8288 g	ZF	23-MAR-18	82.8520	83. %		
SL2079-9	SL	SAMP	22-MAR-18	1.3 g	27.92 g	21.1611 g	21.1611 g	ZF	23-MAR-18	74.6100	75. %		
WG225260-1	SL	MBLANK	22-MAR-18	1.3 g	5.9173 g	5.9149 g	5.9149 g	ZF	23-MAR-18	99.9480	100 %		
WG225260-2	SL	LCS	22-MAR-18	1.3 g	6.3034 g	5.8033 g	5.8033 g	ZF	23-MAR-18	90.0050	90. %	100	
WG225260-3	SL	DUP	22-MAR-18	1.3 g	17.7724 g	14.9366 g	14.9366 g	ZF	23-MAR-18	82.7840	83. %		0
WG225260-4	SL	DUP	22-MAR-18	1.3 g	23.886 g	18.1746 g	18.1746 g	ZF	23-MAR-18	74.7130	75. %		0

Comments:

SL2004-7	Composite of DC-1, DC-2, DC-3, DC-4, & DC-5
SL2005-5	Composite of SR-1 TOP 0-43", SR-1 BOTTOM 43-82", SR-2, & SR-3
SL2006-5	Composite of CM-1 & CM-2
SL2006-6	Composite of CM-3 & CM-4
SL2079-9	MS/MSD
WG225260-1	SL2079-8
WG225260-2	SL2079-8
WG225260-3	SL2079-8
WG225260-4	SL2079-9

Entered by: SA Date: 3-23-18 Accepted by: [signature] Date: 03/23/18

Katahdin Analytical Services 5000054

Katahdin
ANALYTICAL SERVICES

Prep time: 16:06

Katahdin Analytical Services

Work Group Report (wk02)

22-MAR-18 04:04 PM

Work Group: WG225260 R465894 **Created:** 22-MAR-18
Department: 100 Wetlab Prep **Operator:** **Due:**

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
1	SL2004-7	[redacted]	TS	Solid	WIP	U	25-MAR-18	
2	SL2005-5	[redacted]	TS	Solid	WIP	U	25-MAR-18	
3	SL2006-5	[redacted]	TS	Solid	WIP	U	25-MAR-18	
4	SL2006-6	[redacted]	TS	Solid	WIP	U	25-MAR-18	
5	SL2079-1	[redacted]	TS	Solid	WIP	U	27-MAR-18	
6	SL2079-2	[redacted]	TS	Solid	WIP	U	27-MAR-18	
7	SL2079-3	[redacted]	TS	Solid	WIP	U	27-MAR-18	
8	SL2079-4	[redacted]	TS	Solid	WIP	U	27-MAR-18	
9	SL2079-5	[redacted]	TS	Solid	WIP	U	27-MAR-18	
10	SL2079-6	[redacted]	TS	Solid	WIP	U	27-MAR-18	
11	SL2079-7	[redacted]	TS	Solid	WIP	U	27-MAR-18	
12	SL2079-8	[redacted]	TS	Solid	WIP	U	27-MAR-18	
13	SL2079-9	[redacted]	TS	Solid	WIP	U	27-MAR-18	
14	SL2079-10	[redacted]	TS	Solid	WIP	U	27-MAR-18	
15	SL2079-11	[redacted]	TS	Solid	WIP	U	27-MAR-18	
16	SL2079-12	[redacted]	TS	Solid	WIP	U	27-MAR-18	
17	SL2079-13	[redacted]	TS	Solid	WIP	U	27-MAR-18	
18	WG225260-1	MBLANK	TS	Solid	WIP	U	22-MAR-18	
19	WG225260-2	LCS	TS	Solid	WIP	U	22-MAR-18	
20	WG225260-3	DUP	TS	Solid	WIP	U	22-MAR-18	
21	WG225260-4	DUP	TS	Solid	WIP	U	22-MAR-18	

Comments:

SL2004-7	Composite of DC-1, DC-2, DC-3, DC-4, & DC-5
SL2005-5	Composite of SR-1 TOP 0-43", SR-1 BOTTOM 43-82", SR-2, & SR-3
SL2006-5	Composite of CM-1 & CM-2
SL2006-6	Composite of CM-3 & CM-4
SL2079-9	MS/MSD
WG225260-1	SL2079-8
WG225260-2	SL2079-8
WG225260-3	SL2079-8
WG225260-4	SL2079-9

Total Solids: SM2540 G / ASTM D2216			PQL: 0.10%	Oven ID: 107N0042		Balance Calibrated?
TS	In 1	In 2	TS	Out 1	Out 2	(Y)/ N
ANALYST IN:	ZF		ANALYST OUT:	SC		In: ✓
DATE IN:	3/22/18		DATE OUT:	3-23-18		Out (TS):
TIME IN:	16:24		TIME OUT:	835		Balance ID: OHAUS
TEMP IN:	104 °C		TEMP OUT:	104		S/N 1124016031

ATI, INC.
CORNHUSKER ARMY AMMINUTION PLANT
SL2133

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

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EXPLOSIVE DATA		2000001		
QC Summary	----------	2000002	to	2000016
Sample Data	----------	2000017	to	2000197
Standards Data	----------	2000198	to	2000329
Raw QC Data	----------	2000330	to	2000389
Logbooks and Supporting Documents	----------	2000390	to	2000402
METALS DATA		4000001		
Sample Data	----------	4000002	to	4000026
QC Summary	----------	4000027	to	4000132
Raw Data	----------	4000133	to	4000441
Logbooks and Supporting Documents	----------	4000442	to	4000449
CONVENTIONAL AND PHYSICAL ANALYTICAL DATA		5000001		
QC Summary	----------	5000002	to	5000006
Sample Data	----------	5000007	to	5000029
Raw Data	----------	5000030	to	5000065

REISSUE

SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
ATI, INC.
CORNHUSKER ARMY AMMUNITION PLANT
SL2133

Sample Receipt

The following samples were received on March 16, 2018 and were logged in under Katahdin Analytical Services work order number SL2133 for a hardcopy due date of March 28, 2018.

KATAHDIN Sample No.	ATI Sample Identification
SL2133-1	CHAAP-20B-SB01-11
SL2133-2	CHAAP-20B-SB01-4
SL2133-3	CHAAP-20B-SB01-8
SL2133-4	CHAAP-20B-SB02-4
SL2133-5	CHAAP-20B-SB02-8
SL2133-6	CHAAP-20B-SB03-4
SL2133-7	CHAAP-20B-SB03-8
SL2133-8	CHAAP-20B-SB04-4
SL2133-9	CHAAP-20B-SB04-8
SL2133-10	CHAAP-20B-SB05-4
SL2133-11	CHAAP-20B-SB05-8
SL2133-12	CHAAP-20B-SB06-4
SL2133-13	CHAAP-20B-SB06-8
SL2133-14	CHAAP-20B-SS01
SL2133-15	CHAAP-20B-SS02
SL2133-16	CHAAP-20B-SS03
SL2133-17	CHAAP-20B-SS04
SL2133-18	CHAAP-20B-SS05
SL2133-19	CHAAP-20B-SS06
SL2133-20	CHAAP-20B-EB-031518
SL2133-21	CHAAP-20B-SS102
SL2133-22	CHAAP-20B-SS104

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Reissue 04/26/2018

This report is being reissued for the following reasons:

1) The IS evaluation window for retention time for GC/MS methods is being corrected to ±10 seconds.
2) The LCS/MS limits are being updated to reflect Table 37 for method 8330B from the DOD 5.0 QSM with a default minimum upper limit of 125%.
3) The sample data summary section of the PDF is being updated to include all QC forms.
4) The ICSA standard for method 6020A is being updated to report to two significant figures.

Organics Analysis

The samples of Work Order SL2133 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA and/or for the specific methods listed below or on the Report of Analysis.

Sample SL2133-19 was used as the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

8270D SIM Analysis

Sample SL2133-19 was manually integrated for the analytes indeno(1,2,3-cd)pyrene. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The CV (file N8024) had high responses for the target analyte pyrene and the surrogate pyrene-d10 which resulted in %D's that were greater than the DoD QSM acceptance limit of 20%. The CV (file N8083) had a high response for indeno(1,2,3-cd)pyrene. These responses resulted in %D's that were greater than the DoD QSM acceptance limit of 20%.

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing Cvs. This is because I can't be bothered to change the Target criteria.

The target analytes fluoranthene, pyrene and benzo(a)anthracene were detected below ½ of the LOQ in the method blank WG225022-1.The target analytes pyrene and benzo(a)anthracene were detected below ½ of the LOQ in the method blank WG225023-1. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit and is greater than 1/10 the amount measured in any sample or 1/10 the regulatory limit (whichever is greater). Since the method blank was acceptable, no further action was taken.

8330B Analysis

All samples except SL2133-6, 10, and 20 were manually integrated for the target analytes HMX, RDX, 4-amino-2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 2,4,6-trinitrotoluene, and/or the extraction surrogate 1,2-dinitrobenzene on the primary and/or confirmation columns. The specific reasons for the

manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

All samples were initially analyzed on the primary Phenomenex column. If a sample has a peak that is within the retention time window of a target analyte and the concentration is above the PQL, the sample is reanalyzed for confirmation on the confirmation Acclaim E2 column. An analyte is considered confirmed if the mentioned criteria are achieved with both columns. All samples except SL2133-20 were reanalyzed for confirmation on the confirmation Acclaim E2 column. All of the supporting data for the confirmation analysis is included in the report. The results from the primary column are reported.

Samples SL2133-2, 3, 15, 16, 17, and 21, had RPDs for various target analyte results that were outside of the DoD QSM acceptance limit of 40%. These analytes are flagged with a "J" qualifier on the reports of analysis (ROA).

The independent check standard (file HKH10016), associated with the initial calibration analyzed on 08/01/17, had high concentrations for the target analytes tetryl, 4-AM-DNT, and 3-nitrotoluene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SL2133 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SL2133-(1-7) were digested for ICP-MS analysis on 03/19/18 (QC Batch LC19IMS1) in accordance with USEPA Method 3050B.

Aqueous-matrix Katahdin Sample Number SL2133-20 was digested for ICP-MS analysis on 03/19/18 (QC Batch LC19IMW2) in accordance with USEPA Method 3010A.

Solid-matrix Katahdin Sample Numbers SL2133-(8-19, 21, 22) were digested for ICP-MS analysis on 03/20/18 (QC Batch LC20IMS1) in accordance with USEPA Method 3050B. Katahdin Sample Number SL2133-19 was prepared with duplicate matrix-spiked aliquots, per client request.

The high concentrations of calcium in Katahdin Sample Numbers SL2133-(4, 8) required ten-fold dilutions in order to bring the concentration within the linear range of the instrument. All sample digestates for method 6020A were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. Per client request, samples which required an additional dilution have been identified using a "D" flag in the qualifier column on all Form 1s.

ICP-MS analyses of Katahdin Work Order SL2133 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Methods 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All samples were analyzed within

holding times and all analytical run QC criteria were met, except for the following:

The measured concentration of zinc (2.43 ug/L) in the Practical Quantitative Limit (PQL) analyzed at 17:40 in analytical run JLC20C is outside the project acceptance criteria. However, all field samples from Katahdin Work Order SL2133 analyzed in this analytical run had zinc concentrations greater than ten times that of the PQL value and zinc results were reported without corrective action.

The concentration of aluminum in the Continuing Calibration Blank (CCB) analyzed at 18:04 in analytical run JLC21A is outside the project acceptance criteria. However, all bracketed field samples from Katahdin Work Order SL2133 have aluminum concentrations greater than ten times that of the CCB value and aluminum results were reported without corrective action.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element. In analytical runs JLC20C and JLC21A, yttrium was used as the internal standard element associated with vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, arsenic, selenium, silver, cadmium, strontium, and molybdenum. Due to internal standard instability caused by suspected matrix interference in select samples of Katahdin Work Order SL2133, germanium was used as the internal standard for analytical runs JLC22E and JLC26B.

Internal Standard Element	Associated Analytes
Lithium	Beryllium, Boron
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium or Yttrium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium, Strontium, Molybdenum
Terbium	Antimony, Barium, Tin, Tungsten
Bismuth	Lead, Thallium, Thorium, Uranium

Instrument tuning information can also be found in the raw data section in the reports labeled "6020 QC Tune Report". For Method 6020A, the relative standard deviation was determined from 4 replicate measurements and the peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SL2133-(1-19, 21) were digested for mercury analysis on 03/19/18 (QC Batch LC19HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SL2133-19 was prepared with duplicate matrix-spiked aliquots, per client request. Due to low percent recovery of spike added, the duplicate matrix-spiked aliquots of Katahdin Sample Number SL2133-19 were redigested for mercury analysis on 03/21/18 (QC Batch LC21HGS1). Redigestates are identified on sample preparation logbooks, analysis run logs, and throughout the raw data by the suffix "R" appended to the Katahdin Sample Number, e.g. "SL2133-19RS".

Aqueous-matrix Katahdin Sample Number SL2133-20 was digested for mercury analysis on 03/19/18 (QC Batch LC19HGW2) in accordance with USEPA Method 7470A.

Solid-matrix Katahdin Sample Number SL2133-22 was digested for mercury analysis on 03/20/18 (QC Batch LC20HGS1) in accordance with USEPA Method 7471B. This batch was prepared with duplicate laboratory control samples.

Mercury analysis of the Katahdin Work Order SL2133 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A and 7471B. All samples were analyzed within holding times. All analytical run QC criteria were met.

Matrix QC Summary

The measured recoveries of aluminum, antimony, barium, calcium, iron, magnesium, manganese, mercury, and potassium in one or both of the matrix-spiked aliquots of Katahdin Sample Number SL2133-19 are outside the project acceptance criteria. For aluminum, calcium, iron, magnesium, manganese, and potassium this may be attributable to the native concentration being significantly greater than the spike added.

The matrix-spiked duplicate analysis of Katahdin Sample Number SL2133-19 is within the project acceptance criteria (<20% relative difference between duplicate matrix-spiked aliquots) for all analytes.

The measured recoveries of aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, mercury, and nickel in the post-digestion spiked aliquot of Katahdin Sample Number SL2133-19 are outside the project acceptance criteria (80% - 120% recovery of the added element). For aluminum, barium, calcium, copper, iron, lead, magnesium, and manganese this may be attributable to the native concentration being significantly greater than the spike added.

The serial dilution analysis of Katahdin Sample Number SL2133-19 is outside the project acceptance criteria (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for cadmium, cobalt, copper, iron, manganese, nickel, vanadium, and zinc.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SL2133 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for hexavalent chromium were performed according to "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA,III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA. Trivalent chromium was calculated as the difference between total chromium and hexavalent chromium.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999 APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met except the following:

In accordance with EPA Method 3060, matrix spike analysis for hexavalent chromium was performed using pre-digestion soluble matrix spikes, pre-digestion insoluble matrix spikes, and post-digestion matrix spikes. Due to constraints imposed by the laboratory's data reporting system, not all of these matrix spikes are listed on the accompanying Matrix Spike Sample Summary Report. For this reason, all of the hexavalent chromium matrix spikes that were performed on Work Order SL2133 samples are listed in the following table.

The recoveries of the post-digestion matrix spike and the soluble pre-digestion matrix spike of Katahdin Sample No. SL2133-19 in the original analysis of 03/22/18 were outside of the laboratory's acceptance limits. For this reason, this sample was redigested with soluble and insoluble hexavalent chromium matrix spikes and was reanalyzed on 03/27/18. The low recovery of the post-digestion matrix spike and the soluble hexavalent chromium matrix spike in the reanalysis confirmed the observed matrix interference for hexavalent chromium.

Katahdin Sample Number	Analysis Date	Matrix Spike Type	Recovery	Acceptance Limits
SL2133-9	03/22/18	Soluble Pre-Digestion MS	68%	75% - 125%
		Insoluble Pre-Digestion MS	99%	75% - 125%
		Post-Digestion MS	79%	85% - 115%
SL2133-9	03/27/18	Soluble Pre-Digestion MS	54%	75% - 125%
		Insoluble Pre-Digestion MS	84%	75% - 125%
		Post-Digestion MS	78%	85% - 115%

Lab. ID. 2001(non-air)
Lab. ID. 11121 (air only)

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Edward h Munger for 04-26-18

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HHM	Sampled By: Client
Project:	KIMS Entry By: SO	Delivered By: Fedex
KAS Work Order#: SL2133	KIMS Review By: HHM	Received By: SO
SDG #:	Cooler: 1 of 2	Date/Time Rec.: 3-16-18 915

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.2
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

000010

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HHM	Sampled By: Client
Project:	KIMS Entry By: SO	Delivered By: Fedex
KAS Work Order#: SL2133	KIMS Review By: HHM	Received By: SO
SDG #:	Cooler: 2 of 2	Date/Time Rec.: 3-16-18 915

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Heather Manz

From: Spies, Jennifer [jspies@hgl.com]
Sent: Friday, March 16, 2018 11:05 AM
To: Heather Manz
Cc: 'Allison Harbottle'; Sullivan, Ryan; Hedgepath, Alex
Subject: FW: ATI/HGL Cornhusker COC
Attachments: COC_20B_DPT_031518.XLS

Hi Heather,
One change to the COC. Please analyze sample #19 (CHAAP-20B-SS06) for hex chrome analysis and remove hex chrome analysis for sample #18 (CHAAP-20B-SS05).
Thanks,
Jennifer

Jennifer Spies
HGL
85 NE Interstate Loop 410, Suite 605
San Antonio, TX 78216
phone: 512-291-3588
www.hgl.com

From: Spies, Jennifer
Sent: Thursday, March 15, 2018 7:12 PM
To: 'Heather Manz' <hmanz@katahdinlab.com>
Cc: 'Allison Harbottle' <aharbottle@katahdinlab.com>; Sullivan, Ryan <rsullivan@hgl.com>; Hedgepath, Alex <ahedgepath@hgl.com>
Subject: ATI/HGL Cornhusker COC

Hi Heather,

HGL shipped the DPT samples from Tract 20B tonight. It contained 19 soil samples total to be analyzed for Metals, Explosives, PAHs, and CrVI (at 10 locations). In addition, there was an EB/2 FDs/MS/MSD.

The FedEx numbers are as follows:
780094195378
780094229531

Thanks,
Jennifer

Jennifer Spies
HGL
85 NE Interstate Loop 410, Suite 605
San Antonio, TX 78216
phone: 512-291-3588
www.hgl.com

Consider the Environment before printing this email.

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COCC012

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client:	Contact:	Phone #:	Fax #:
ATI INC.	David Nelson	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: 5K2133 (Katahdin Project Number)

Remarks:

Shipping Info: FEDEX UPS CLIENT

Airbill No:

Temp C: Temp Blank: Intact / Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	SPLP Metals (1312) Filt. N	Filt. N	Filt. N	Filt. N
						Analysis and Container Type Preservatives									
1	CHAAP-20B-SB01-11	1145	3/15/2018	Soil	1		X	X		X					
2	CHAAP-20B-SB01-4	1135	3/15/2018	Soil	1		X	X		X	X				
3	CHAAP-20B-SB01-8	1140	3/15/2018	Soil	1		X	X		X					
4	CHAAP-20B-SB02-4	1225	3/15/2018	Soil	1		X	X		X	X				
5	CHAAP-20B-SB02-8	1230	3/15/2018	Soil	1		X	X		X					
6	CHAAP-20B-SB03-4	1310	3/15/2018	Soil	1		X	X		X	X				
7	CHAAP-20B-SB03-8	1315	3/15/2018	Soil	1		X	X		X					
8	CHAAP-20B-SB04-4	1035	3/15/2018	Soil	1		X	X		X	X				
9	CHAAP-20B-SB04-8	1040	3/15/2018	Soil	1		X	X		X					
10	CHAAP-20B-SB05-4	955	3/15/2018	Soil	1		X	X		X	X				
11	CHAAP-20B-SB05-8	1005	3/15/2018	Soil	1		X	X		X					
12	CHAAP-20B-SB06-4	1205	3/15/2018	Soil	1		X	X		X					
13	CHAAP-20B-SB06-8	1210	3/15/2018	Soil	1		X	X		X					
14	CHAAP-20B-SS01	1045	3/15/2018	Soil	1		X	X		X	X				
15	CHAAP-20B-SS02	1240	3/15/2018	Soil	1		X	X		X	X				
16	CHAAP-20B-SS03	1245	3/15/2018	Soil	1		X	X		X	X				
17	CHAAP-20B-SS04	1025	3/15/2018	Soil	1		X	X		X	X				
18	CHAAP-20B-SS05	950	3/15/2018	Soil	1		X	X		X	✗				
19	CHAAP-20B-SS06	1110	3/15/2018	Soil	1		X	X		X	✓				
20	CHAAP-20B-EB-031518	1350	3/15/2018	Water	5		X	X		X					
21	CHAAP-20B-SS102	1200	3/15/2018	Soil	1		X	X		X	X				
22	CHAAP-20B-SS06-MS/MSD	1110	3/15/2018	Soil	2		X	X		X					
23	CHAAP-20B-SS104	1200	3/15/2018	Soil	1		X	X		X	X				
	- End of Samples														

HMM 3-16-18

COMMENTS: 3/16/18 915

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath HGL	3/15/2018 1515				
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Mar. 16, 2018
11:27 AM

Login Number: SL2133

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Primary Report Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045
david.nelson@atiinc.com

Primary Invoice Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming: ATI-CORN-AAP

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD 5.0, ND to LOD w/ J flags. Report all valid runs. Flag dilutions w/ "D" qualifier. Include any excedences in the case narrative. Hold extracts for 60 days. 8260B, 8270DSIM, 8330B, 6020A/7471A/7471B. No explo soil prep needed (8330B Mod).
CHECK NO.	:	
CLIENT PO#	:	PN:16-027
CLIENT PROJECT MANAGE	:	
CONTRACT	:	W9182F-16-D-0014
COOLER TEMPERATURE	:	1.2, 0.6
DELIVERY SERVICES	:	Fedex
EDD FORMAT	:	ERIS EDD
LOGIN INITIALS	:	SO
PM	:	HHM
PROJECT NAME	:	Cornhusker Army Ammunition Plant
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	Check EDD, if errors, fix them or contact client (Jeff Martin703-736-4533 jmartin@hgl.com). Upload PDF & EDD to SDS. Email david.nelson@atiinc.com, seichelberger@hgl.com, tsullivan@hgl.com, Teresa.offner@atiinc.com, jspies@hgl.com to tell them report is uploaded. Email invoice to jspies@hgl.com, david.nelson@atiinc.com and seichelberger@hgl.com
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	5

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-1	CHAAP-20B-SB01-11	15-MAR-18 11:45	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-2	CHAAP-20B-SB01-4	15-MAR-18 11:35	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

HHM 4-3-18

CCOOO14

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Mar. 16, 2018
11:27 AM

Login Number: SL2133 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-3	CHAAP-20B-SB01-8	15-MAR-18 11:40	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-4	CHAAP-20B-SB02-4	15-MAR-18 12:25	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-5	CHAAP-20B-SB02-8	15-MAR-18 12:30	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

HDM 4-3-18

Login Number: SL2133 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-6	CHAAP-20B-SB03-4	15-MAR-18 13:10	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-7	CHAAP-20B-SB03-8	15-MAR-18 13:15	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-8	CHAAP-20B-SB04-4	15-MAR-18 10:35	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

4-3-18

Login Number: SL2133 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-9	CHAAP-20B-SB04-8	15-MAR-18 10:40	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-10	CHAAP-20B-SB05-4	15-MAR-18 09:55	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-11	CHAAP-20B-SB05-8	15-MAR-18 10:05	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

4-3-18

Login Number: SL2133

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-12	CHAAP-20B-SB06-4	15-MAR-18 12:05	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

SL2133-13		CHAAP-20B-SB06-8	15-MAR-18 12:10	16-MAR-18		28-MAR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

SL2133-14		CHAAP-20B-SS01	15-MAR-18 10:45	16-MAR-18		28-MAR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

4-3-18

Login Number: SL2133 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-15	CHAAP-20B-SS02	15-MAR-18 12:40	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-16	CHAAP-20B-SS03	15-MAR-18 12:45	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-17	CHAAP-20B-SS04	15-MAR-18 10:25	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

4-3-18

Login Number: SL2133 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-18	CHAAP-20B-SS05	15-MAR-18 09:50	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

SL2133-19		CHAAP-20B-SS06	15-MAR-18 11:10	16-MAR-18		28-MAR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		**MS/MSD**
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18			

SL2133-20		CHAAP-20B-EB-031518	15-MAR-18 13:50	16-MAR-18		28-MAR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8270SIMPAH-S	22-MAR-18	1L N-Amber Glass		
Aqueous	S	SW8330-S	22-MAR-18	1L N-Amber Glass		
Aqueous	P	TAL-MET-SW846-ICPMS				

SW3010MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7470-MERCURY

4-3-18

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Mar. 16, 2018
11:27 AM

Login Number: SL2133 **Quote/Incoming:** ATI-CORN-AAP

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-21	CHAAP-20B-SS102	15-MAR-18 12:00	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2133-22	CHAAP-20B-SS104	15-MAR-18 12:00	16-MAR-18			28-MAR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW7196A-CRVI	12-APR-18	50g Glass		
Solid	S	SW8270SIMPAH-S	29-MAR-18	4oz Glass		
Solid	S	SW8330-S	29-MAR-18			
Solid	P	TAL-MET-SW846-ICPMS				

SW3050MS-PREP	SW6020-ALUMINUM	SW6020-ANTIMONY
SW6020-ARSENIC	SW6020-BARIUM	SW6020-BERYLLIUM
SW6020-CADMIUM	SW6020-CALCIUM	SW6020-CHROMIUM
SW6020-COBALT	SW6020-COPPER	SW6020-IRON
SW6020-LEAD	SW6020-MAGNESIUM	SW6020-MANGANESE
SW6020-NICKEL	SW6020-POTASSIUM	SW6020-SELENIUM
SW6020-SILVER	SW6020-SODIUM	SW6020-THALLIUM
SW6020-VANADIUM	SW6020-ZINC	SW7471-MERCURY

Solid	S	TS	29-MAR-18

Total Samples: **22** ***Total Analyses:*** **99**

HHM
4-3-18

0000021

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-1
Client ID: CHAAP-20B-SB01-11
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8042.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	26.	3.4	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	26.	2.9	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	26.	2.0	13.
Fluorene	U	13	ug/Kgdrywt	1	20	26.	4.2	13.
Phenanthrene	J	3.1	ug/Kgdrywt	1	20	26.	2.4	13.
Anthracene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Fluoranthene	J	3.4	ug/Kgdrywt	1	20	26.	2.4	13.
Pyrene	J	3.2	ug/Kgdrywt	1	20	26.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Chrysene	U	13	ug/Kgdrywt	1	20	26.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	3.1	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	26.	4.0	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	26.	4.3	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	26.	2.6	13.
2-Methylnaphthalene-D10		43.7	%					
Fluorene-D10		50.0	%					
Pyrene-D10		54.5	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-2
Client ID: CHAAP-20B-SB01-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8043.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 80.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.9	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Fluoranthene	J	2.4	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	J	2.6	ug/Kgdrywt	1	20	24.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		35.0	%					
Fluorene-D10		44.3	%					
Pyrene-D10		57.0	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-3
Client ID: CHAAP-20B-SB01-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8044.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		44.2	%					
Fluorene-D10		49.1	%					
Pyrene-D10		56.0	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-4
Client ID: CHAAP-20B-SB02-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8064.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 81.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.1	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.6	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	24.	2.5	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.7	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		40.6	%					
Fluorene-D10		53.0	%					
Pyrene-D10		62.0	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-5
Client ID: CHAAP-20B-SB02-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8067.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 74.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	26.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	26.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	26.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	26.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	26.	4.1	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	26.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	26.	1.5	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	2.3	13.
Pyrene	U	13	ug/Kgdrywt	1	20	26.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	26.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	3.1	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	26.	4.0	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	26.	4.2	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.3	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	26.	2.6	13.
2-Methylnaphthalene-D10		46.6	%					
Fluorene-D10		53.0	%					
Pyrene-D10		62.0	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-6
Client ID: CHAAP-20B-SB03-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8068.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.3	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		34.0	%					
Fluorene-D10		46.8	%					
Pyrene-D10		53.0	%					

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Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-7
Client ID: CHAAP-20B-SB03-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8069.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.3	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.2	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		29.8	%					
Fluorene-D10		41.2	%					
Pyrene-D10		55.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-8
Client ID: CHAAP-20B-SB04-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8070.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 79.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.8	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		29.5	%					
Fluorene-D10		44.0	%					
Pyrene-D10		56.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-9
Client ID: CHAAP-20B-SB04-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8071.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.9	12.
Phenanthrene	J	3.6	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Fluoranthene	J	5.8	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	J	5.4	ug/Kgdrywt	1	20	24.	2.6	12.
Benzo(a)anthracene	J	2.6	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	J	2.7	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		36.1	%					
Fluorene-D10		44.6	%					
Pyrene-D10		56.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-10
Client ID: CHAAP-20B-SB05-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8084.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	25.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	25.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	25.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	25.	4.0	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Pyrene	U	13	ug/Kgdrywt	1	20	25.	2.6	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	25.	2.1	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.0	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.9	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	25.	4.2	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	25.	2.5	13.
2-Methylnaphthalene-D10		47.6	%					
Fluorene-D10		58.5	%					
Pyrene-D10		67.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-11
Client ID: CHAAP-20B-SB05-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8085.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	J	2.9	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	J	3.8	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		31.1	%					
Fluorene-D10		43.2	%					
Pyrene-D10		52.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-12
Client ID: CHAAP-20B-SB06-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8086.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 79.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		41.0	%					
Fluorene-D10		52.0	%					
Pyrene-D10		60.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-13
Client ID: CHAAP-20B-SB06-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8087.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 75.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	26.	3.4	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	26.	2.9	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	26.	2.0	13.
Fluorene	U	13	ug/Kgdrywt	1	20	26.	4.2	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Anthracene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Pyrene	U	13	ug/Kgdrywt	1	20	26.	2.8	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Chrysene	U	13	ug/Kgdrywt	1	20	26.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	3.2	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	26.	4.1	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	26.	4.3	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	26.	2.6	13.
2-Methylnaphthalene-D10		23.9	%					
Fluorene-D10		39.4	%					
Pyrene-D10		46.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-14
Client ID: CHAAP-20B-SS01
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8088.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 85.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11	ug/Kgdrywt	1	20	23.	3.0	11.
2-Methylnaphthalene	U	11	ug/Kgdrywt	1	20	23.	2.5	11.
Acenaphthylene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Acenaphthene	U	11	ug/Kgdrywt	1	20	23.	1.7	11.
Fluorene	U	11	ug/Kgdrywt	1	20	23.	3.7	11.
Phenanthrene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Anthracene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Pyrene	U	11	ug/Kgdrywt	1	20	23.	2.4	11.
Benzo(a)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Chrysene	U	11	ug/Kgdrywt	1	20	23.	1.9	11.
Benzo(b)Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.8	11.
Benzo(k)fluoranthene	U	11	ug/Kgdrywt	1	20	23.	3.6	11.
Benzo(a)pyrene	U	11	ug/Kgdrywt	1	20	23.	3.8	11.
Indeno(1,2,3-cd)pyrene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Dibenzo(a,h)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Benzo(g,h,i)perylene	U	11	ug/Kgdrywt	1	20	23.	2.3	11.
2-Methylnaphthalene-D10		46.1	%					
Fluorene-D10		49.4	%					
Pyrene-D10		44.4	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-15
Client ID: CHAAP-20B-SS02
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8089.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 80.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11	ug/Kgdrywt	1	20	23.	3.0	11.
2-Methylnaphthalene	U	11	ug/Kgdrywt	1	20	23.	2.5	11.
Acenaphthylene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Acenaphthene	U	11	ug/Kgdrywt	1	20	23.	1.7	11.
Fluorene	U	11	ug/Kgdrywt	1	20	23.	3.7	11.
Phenanthrene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Anthracene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Pyrene	U	11	ug/Kgdrywt	1	20	23.	2.4	11.
Benzo(a)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Chrysene	U	11	ug/Kgdrywt	1	20	23.	2.0	11.
Benzo(b)Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.8	11.
Benzo(k)fluoranthene	U	11	ug/Kgdrywt	1	20	23.	3.6	11.
Benzo(a)pyrene	U	11	ug/Kgdrywt	1	20	23.	3.8	11.
Indeno(1,2,3-cd)pyrene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Dibenzo(a,h)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Benzo(g,h,i)perylene	U	11	ug/Kgdrywt	1	20	23.	2.3	11.
2-Methylnaphthalene-D10		44.3	%					
Fluorene-D10		46.2	%					
Pyrene-D10		45.0	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-16
Client ID: CHAAP-20B-SS03
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8090.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	25.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	25.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	25.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	25.	4.1	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Fluoranthene	J	2.8	ug/Kgdrywt	1	20	25.	2.3	13.
Pyrene	J	3.0	ug/Kgdrywt	1	20	25.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	25.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.0	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.9	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	25.	4.2	13.
Indeno(1,2,3-cd)pyrene	J	3.1	ug/Kgdrywt	1	20	25.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Benzo(g,h,i)perylene	J	3.7	ug/Kgdrywt	1	20	25.	2.5	13.
2-Methylnaphthalene-D10		41.8	%					
Fluorene-D10		50.5	%					
Pyrene-D10		48.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-17
Client ID: CHAAP-20B-SS04
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8091.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	23.	2.6	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	23.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	U	12	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	U	12	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	J	3.6	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		58.0	%					
Fluorene-D10		56.0	%					
Pyrene-D10		44.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-18
Client ID: CHAAP-20B-SS05
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8092.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	25.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	25.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	25.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	25.	4.0	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Pyrene	U	13	ug/Kgdrywt	1	20	25.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	25.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.0	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.9	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	25.	4.2	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	25.	2.5	13.
2-Methylnaphthalene-D10		49.1	%					
Fluorene-D10		48.2	%					
Pyrene-D10		39.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8093.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	23.	2.5	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	23.	1.7	12.
Fluorene	U	12	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	U	12	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	U	12	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	J	2.6	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		45.2	%					
Fluorene-D10		48.4	%					
Pyrene-D10		45.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-20
Client ID: CHAAP-20B-EB-031518
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8028.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG225023

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	U	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		84.4	%					
Fluorene-D10		78.5	%					
Pyrene-D10		95.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-21
Client ID: CHAAP-20B-SS102
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8096.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 81.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.1	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.6	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	24.	2.5	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.7	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	J	3.0	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		47.6	%					
Fluorene-D10		50.5	%					
Pyrene-D10		42.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-22
Client ID: CHAAP-20B-SS104
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8097.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 79.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		45.6	%					
Fluorene-D10		45.0	%					
Pyrene-D10		33.3	%					

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Report of Analytical Results

Client:
Lab ID: WG225023-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: N8025.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG225023

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	J	0.091	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	J	0.069	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		82.6	%					
Fluorene-D10		78.7	%					
Pyrene-D10		106.	%					

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REISSUE

Katahdin Analytical Services A0000027

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225021-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: N8029.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 27-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		77.4	%					
Fluorene-D10		67.6	%					
Pyrene-D10		83.8	%					

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REISSUE

Katahdin Analytical Services A0000028

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225022-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: N8058.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 27-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	2.6	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	2.2	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	2.0	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		66.9	%					
Fluorene-D10		62.5	%					
Pyrene-D10		63.3	%					

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REISSUE

Katahdin Analytical Services A0000029

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-20B-SB01-11	SL2133-1		43.7		50.0		54.5	
CHAAP-20B-SB05-4	SL2133-10		47.6		58.5		67.5	
CHAAP-20B-SB05-8	SL2133-11		31.1		43.2		52.0	
CHAAP-20B-SB06-4	SL2133-12		41.0		52.0		60.0	
CHAAP-20B-SB06-8	SL2133-13		23.9		39.4		46.4	
CHAAP-20B-SS01	SL2133-14		46.1		49.4		44.4	
CHAAP-20B-SS02	SL2133-15		44.3		46.2		45.0	
CHAAP-20B-SS03	SL2133-16		41.8		50.5		48.6	
CHAAP-20B-SS04	SL2133-17		58.0		56.0		44.2	
CHAAP-20B-SS05	SL2133-18		49.1		48.2		39.5	
CHAAP-20B-SS06	SL2133-19		45.2		48.4		45.2	
CHAAP-20B-SB01-4	SL2133-2		35.0		44.3		57.0	
CHAAP-20B-SS102	SL2133-21		47.6		50.5		42.9	
CHAAP-20B-SS104	SL2133-22		45.6		45.0		33.3	
CHAAP-20B-SB01-8	SL2133-3		44.2		49.1		56.0	
CHAAP-20B-SB02-4	SL2133-4		40.6		53.0		62.0	
CHAAP-20B-SB02-8	SL2133-5		46.6		53.0		62.0	
CHAAP-20B-SB03-4	SL2133-6		34.0		46.8		53.0	
CHAAP-20B-SB03-8	SL2133-7		29.8		41.2		55.5	
CHAAP-20B-SB04-4	SL2133-8		29.5		44.0		56.0	
CHAAP-20B-SB04-8	SL2133-9		36.1		44.6		56.0	
Method Blank Sample	WG225021-1		77.4		67.6		83.8	
Laboratory Control S	WG225021-2		91.3		66.6		66.2	
Method Blank Sample	WG225022-1		66.9		62.5		63.3	
Laboratory Control S	WG225022-2		106.		64.0		67.6	
Matrix Spike	WG225022-3		75.4		59.9		63.8	
Matrix Spike Duplica	WG225022-4		67.8		57.0		59.3	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	19-125
FLO	FLUORENE-D10	20-125
PYR	PYRENE-D10	31-128

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-20B-EB-031518	SL2133-20		84.4		78.5		95.8	
Method Blank Sample	WG225023-1		82.6		78.7		106.	
Laboratory Control S	WG225023-2		86.8		83.6		86.8	

		QC Limits
FLO	FLUORENE-D10	29-120
PYR	PYRENE-D10	53-166
2MN	2-METHYLNAPHTHALENE-D10	43-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225023-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: N8026.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG225023

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	81.5	2.00	1.63	ug/L	43-120
2-Methylnaphthalene	76.0	2.00	1.52	ug/L	39-120
Acenaphthylene	79.5	2.00	1.59	ug/L	35-121
Acenaphthene	83.5	2.00	1.67	ug/L	48-120
Fluorene	86.5	2.00	1.73	ug/L	50-120
Phenanthrene	84.5	2.00	1.69	ug/L	53-120
Anthracene	80.5	2.00	1.61	ug/L	53-120
Fluoranthene	88.0	2.00	1.76	ug/L	58-120
Pyrene	90.5	2.00	1.81	ug/L	53-121
Benzo(a)anthracene	93.0	2.00	1.86	ug/L	59-120
Chrysene	85.5	2.00	1.71	ug/L	57-120
Benzo(b)Fluoranthene	102.	2.00	2.04	ug/L	53-126
Benzo(k)fluoranthene	91.0	2.00	1.82	ug/L	54-125
Benzo(a)pyrene	80.5	2.00	1.61	ug/L	53-120
Indeno(1,2,3-cd)pyrene	54.0	2.00	1.08	ug/L	48-130
Dibenzo(a,h)anthracene	65.0	2.00	1.30	ug/L	44-131
Benzo(g,h,i)perylene	67.5	2.00	1.35	ug/L	44-128
2-Methylnaphthalene-D10	86.8				43-120
Fluorene-D10	83.6				29-120
Pyrene-D10	86.8				53-166

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REISSUE

Katahdin Analytical Services A0000033

Katahdin
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Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225021-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: N8030.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 26-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	71.5	66.7	47.7	ug/Kgdrywt	38-125
2-Methylnaphthalene	65.7	66.7	43.8	ug/Kgdrywt	39-125
Acenaphthylene	64.0	66.7	42.7	ug/Kgdrywt	39-125
Acenaphthene	67.9	66.7	45.3	ug/Kgdrywt	44-125
Fluorene	70.3	66.7	46.9	ug/Kgdrywt	47-125
Phenanthrene	70.0	66.7	46.7	ug/Kgdrywt	49-125
Anthracene	64.2	66.7	42.8	ug/Kgdrywt	50-125
Fluoranthene	77.2	66.7	51.5	ug/Kgdrywt	55-125
Pyrene	69.1	66.7	46.1	ug/Kgdrywt	55-125
Benzo(a)anthracene	77.8	66.7	51.9	ug/Kgdrywt	54-125
Chrysene	72.0	66.7	48.0	ug/Kgdrywt	57-125
Benzo(b)Fluoranthene	91.0	66.7	60.7	ug/Kgdrywt	53-128
Benzo(k)fluoranthene	73.0	66.7	48.7	ug/Kgdrywt	56-125
Benzo(a)pyrene	64.5	66.7	43.0	ug/Kgdrywt	50-125
Indeno(1,2,3-cd)pyrene	51.3	66.7	34.2	ug/Kgdrywt	49-130
Dibenzo(a,h)anthracene	58.5	66.7	39.0	ug/Kgdrywt	50-129
Benzo(g,h,i)perylene	59.4	66.7	39.6	ug/Kgdrywt	49-127
2-Methylnaphthalene-D10	91.3				19-125
Fluorene-D10	66.6				20-125
Pyrene-D10	66.2				31-128

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REISSUE

Katahdin Analytical Services A0000034

Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225022-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: N8059.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 27-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	66.0	66.7	44.0	ug/Kgdrywt	38-125
2-Methylnaphthalene	65.2	66.7	43.5	ug/Kgdrywt	39-125
Acenaphthylene	61.3	66.7	40.9	ug/Kgdrywt	39-125
Acenaphthene	65.2	66.7	43.5	ug/Kgdrywt	44-125
Fluorene	65.7	66.7	43.8	ug/Kgdrywt	47-125
Phenanthrene	69.6	66.7	46.4	ug/Kgdrywt	49-125
Anthracene	68.2	66.7	45.5	ug/Kgdrywt	50-125
Fluoranthene	76.2	66.7	50.8	ug/Kgdrywt	55-125
Pyrene	68.2	66.7	45.5	ug/Kgdrywt	55-125
Benzo(a)anthracene	71.4	66.7	47.6	ug/Kgdrywt	54-125
Chrysene	75.4	66.7	50.3	ug/Kgdrywt	57-125
Benzo(b)Fluoranthene	75.0	66.7	50.0	ug/Kgdrywt	53-128
Benzo(k)fluoranthene	75.0	66.7	50.0	ug/Kgdrywt	56-125
Benzo(a)pyrene	63.3	66.7	42.2	ug/Kgdrywt	50-125
Indeno(1,2,3-cd)pyrene	61.5	66.7	41.0	ug/Kgdrywt	49-130
Dibenzo(a,h)anthracene	63.1	66.7	42.1	ug/Kgdrywt	50-129
Benzo(g,h,i)perylene	62.1	66.7	41.4	ug/Kgdrywt	49-127
2-Methylnaphthalene-D10	106.				19-125
Fluorene-D10	64.0				20-125
Pyrene-D10	67.6				31-128

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REISSUE

Katahdin Analytical Services A0000035

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Cert No E87604

MS/MSD Recovery Report

MS ID: WG225022-3
MSD ID: WG225022-4
Sample ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project:
SDG: SL2133
MS File ID: N8094.D

Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022
Report Date: 26-MAR-18
MSD File ID: N8095.D

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	80.1	83.0	ug/Kgdrywt	U12	48.	52.	59.7	62.4	8	20	38-125
2-Methylnaphthalene	80.1	83.0	ug/Kgdrywt	U12	47.	51.	58.4	61.1	8	20	39-125
Acenaphthylene	80.1	83.0	ug/Kgdrywt	U12	50.	54.	62.7	65.0	7	20	39-125
Acenaphthene	80.1	83.0	ug/Kgdrywt	U12	52.	58.	65.0	70.0	11	20	44-125
Fluorene	80.1	83.0	ug/Kgdrywt	U12	53.	60.	66.7	72.2	11	20	47-125
Phenanthrene	80.1	83.0	ug/Kgdrywt	U12	54.	68.	68.0	81.8	22*	20	49-125
Anthracene	80.1	83.0	ug/Kgdrywt	U12	52.	58.	65.3	69.7	10	20	50-125
Fluoranthene	80.1	83.0	ug/Kgdrywt	U12	49.	62.	61.7	75.2	23*	20	55-125
Pyrene	80.1	83.0	ug/Kgdrywt	U12	57.	66.	71.2	79.3	14	20	55-125
Benzo(a)anthracene	80.1	83.0	ug/Kgdrywt	U12	52.	57.	64.3	68.6	10	20	54-125
Chrysene	80.1	83.0	ug/Kgdrywt	U12	54.	55.	67.9	66.5	1	20	57-125
Benzo(b)Fluoranthene	80.1	83.0	ug/Kgdrywt	U12	47.	52.	58.7	62.8	10	20	53-128
Benzo(k)fluoranthene	80.1	83.0	ug/Kgdrywt	U12	50.	52.	61.9	62.8	5	20	56-125
Benzo(a)pyrene	80.1	83.0	ug/Kgdrywt	U12	43.	48.	53.6	57.6	11	20	50-125
Indeno(1,2,3-cd)pyrene	80.1	83.0	ug/Kgdrywt	J2.6	70.	72.	83.5	84.0	4	20	49-130
Dibenzo(a,h)anthracene	80.1	83.0	ug/Kgdrywt	U12	63.	64.	78.7	76.5	1	20	50-129
Benzo(g,h,i)perylene	80.1	83.0	ug/Kgdrywt	U12	56.	60.	69.6	72.2	7	20	49-127
2-Methylnaphthalene-D10							75.4	67.8			19-125
Fluorene-D10							59.9	57.0			20-125
Pyrene-D10							63.8	59.3			31-128

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REISSUE

Katahdin Analytical Services A0000036

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8029.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225021-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 13:18

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225021-2	N8030.D	03/20/18	13:50
CHAAP-20B-SB01-11	SL2133-1	N8042.D	03/20/18	20:11
CHAAP-20B-SB01-4	SL2133-2	N8043.D	03/20/18	20:43
CHAAP-20B-SB01-8	SL2133-3	N8044.D	03/20/18	21:16
CHAAP-20B-SB02-4	SL2133-4	N8064.D	03/21/18	17:58

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8058.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225022-1
Date Extracted : 19-MAR-18
Date Analyzed : 21-MAR-18
Time Analyzed : 14:49

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225022-2	N8059.D	03/21/18	15:20
CHAAP-20B-SB02-8	SL2133-5	N8067.D	03/21/18	19:35
CHAAP-20B-SB03-4	SL2133-6	N8068.D	03/21/18	20:08
CHAAP-20B-SB03-8	SL2133-7	N8069.D	03/21/18	20:40
CHAAP-20B-SB04-4	SL2133-8	N8070.D	03/21/18	21:12
CHAAP-20B-SB04-8	SL2133-9	N8071.D	03/21/18	21:45
CHAAP-20B-SB05-4	SL2133-10	N8084.D	03/22/18	10:27
CHAAP-20B-SB05-8	SL2133-11	N8085.D	03/22/18	10:58
CHAAP-20B-SB06-4	SL2133-12	N8086.D	03/22/18	11:30
CHAAP-20B-SB06-8	SL2133-13	N8087.D	03/22/18	12:01
CHAAP-20B-SS01	SL2133-14	N8088.D	03/22/18	12:33
CHAAP-20B-SS02	SL2133-15	N8089.D	03/22/18	13:05
CHAAP-20B-SS03	SL2133-16	N8090.D	03/22/18	13:37
CHAAP-20B-SS04	SL2133-17	N8091.D	03/22/18	14:09
CHAAP-20B-SS05	SL2133-18	N8092.D	03/22/18	14:40
CHAAP-20B-SS06	SL2133-19	N8093.D	03/22/18	15:12
Matrix Spike	WG225022-3	N8094.D	03/22/18	15:44
Matrix Spike Duplica	WG225022-4	N8095.D	03/22/18	16:16
CHAAP-20B-SS102	SL2133-21	N8096.D	03/22/18	16:48
CHAAP-20B-SS104	SL2133-22	N8097.D	03/22/18	17:20

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8025.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SL2133
Lab Sample ID : WG225023-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 11:11

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225023-2	N8026.D	03/20/18	11:44
CHAAP-20B-EB-031518	SL2133-20	N8028.D	03/20/18	12:47

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND493.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 16-MAR-18
Time Analyzed : 11:43

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	43.5		
68	Less than 2.0% of mass 69	0.6	1.66	1
69	Less than 100.0% of mass 198	37.5		
70	Less than 2.0% of mass 69	0.2	0.44	1
127	40.0 - 60.0% of mass 198	55.9		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.1		
275	10.0 - 30.0% of mass 198	24.3		
365	1.0 - 100.0% of mass 198	3.0		
441	0.0 - 100.0% of mass 443	11.0	76.73	2
442	40.0 - 100.0% of mass 198	79.3		
443	17.0 - 23.0% of mass 442	14.4	18.13	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG224895-4	N7968.D	03/16/18	11:59
Initial Calibration	WG224895-2	N7969.D	03/16/18	12:30
Initial Calibration	WG224895-3	N7970.D	03/16/18	13:03
Initial Calibration	WG224895-5	N7971.D	03/16/18	13:34
Initial Calibration	WG224895-6	N7972.D	03/16/18	14:06
Initial Calibration	WG224895-7	N7973.D	03/16/18	14:38
Independent Source	WG224895-8	N7974.D	03/16/18	15:10

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND495.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 20-MAR-18
Time Analyzed : 10:23

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	41.0		
68	Less than 2.0% of mass 69	0.5	1.35	1
69	Less than 100.0% of mass 198	37.5		
70	Less than 2.0% of mass 69	0.1	0.21	1
127	40.0 - 60.0% of mass 198	53.9		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.7		
275	10.0 - 30.0% of mass 198	22.0		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	11.4	80.16	2
442	40.0 - 100.0% of mass 198	77.9		
443	17.0 - 23.0% of mass 442	14.2	18.21	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225084-2	N8024.D	03/20/18	10:39
Method Blank Sample	WG225023-1	N8025.D	03/20/18	11:11
Laboratory Control S	WG225023-2	N8026.D	03/20/18	11:44
CHAAP-20B-EB-031518	SL2133-20	N8028.D	03/20/18	12:47
Method Blank Sample	WG225021-1	N8029.D	03/20/18	13:18
Laboratory Control S	WG225021-2	N8030.D	03/20/18	13:50
CHAAP-20B-SB01-11	SL2133-1	N8042.D	03/20/18	20:11
CHAAP-20B-SB01-4	SL2133-2	N8043.D	03/20/18	20:43
CHAAP-20B-SB01-8	SL2133-3	N8044.D	03/20/18	21:16
Continuing Calibrati	WG225084-3	N8045.D	03/20/18	21:48

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND496.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 21-MAR-18
Time Analyzed : 10:41

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	31.2		
68	Less than 2.0% of mass 69	0.6	1.70	1
69	Less than 100.0% of mass 198	37.0		
70	Less than 2.0% of mass 69	0.2	0.61	1
127	40.0 - 60.0% of mass 198	57.5		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.1		
275	10.0 - 30.0% of mass 198	22.0		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	12.1	72.78	2
442	40.0 - 100.0% of mass 198	87.2		
443	17.0 - 23.0% of mass 442	16.6	19.00	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG225136-4	N8051.D	03/21/18	10:57
Initial Calibration	WG225136-2	N8052.D	03/21/18	11:30
Initial Calibration	WG225136-3	N8053.D	03/21/18	12:02
Initial Calibration	WG225136-5	N8054.D	03/21/18	12:34
Initial Calibration	WG225136-6	N8055.D	03/21/18	13:06
Initial Calibration	WG225136-7	N8056.D	03/21/18	13:37
Independent Source	WG225136-8	N8057.D	03/21/18	14:08
Method Blank Sample	WG225022-1	N8058.D	03/21/18	14:49
Laboratory Control S	WG225022-2	N8059.D	03/21/18	15:20
CHAAP-20B-SB02-4	SL2133-4	N8064.D	03/21/18	17:58
CHAAP-20B-SB02-8	SL2133-5	N8067.D	03/21/18	19:35
CHAAP-20B-SB03-4	SL2133-6	N8068.D	03/21/18	20:08
CHAAP-20B-SB03-8	SL2133-7	N8069.D	03/21/18	20:40
CHAAP-20B-SB04-4	SL2133-8	N8070.D	03/21/18	21:12
CHAAP-20B-SB04-8	SL2133-9	N8071.D	03/21/18	21:45
Continuing Calibrati	WG225136-9	N8072.D	03/21/18	22:17

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND497.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 22-MAR-18
Time Analyzed : 09:38

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	33.2		
68	Less than 2.0% of mass 69	0.7	1.73	1
69	Less than 100.0% of mass 198	39.5		
70	Less than 2.0% of mass 69	0.2	0.42	1
127	40.0 - 60.0% of mass 198	59.3		
197	Less than 1.0% of mass 198	0.4		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.8		
275	10.0 - 30.0% of mass 198	21.0		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	11.7	77.14	2
442	40.0 - 100.0% of mass 198	80.7		
443	17.0 - 23.0% of mass 442	15.1	18.74	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225233-2	N8083.D	03/22/18	09:54
CHAAP-20B-SB05-4	SL2133-10	N8084.D	03/22/18	10:27
CHAAP-20B-SB05-8	SL2133-11	N8085.D	03/22/18	10:58
CHAAP-20B-SB06-4	SL2133-12	N8086.D	03/22/18	11:30
CHAAP-20B-SB06-8	SL2133-13	N8087.D	03/22/18	12:01
CHAAP-20B-SS01	SL2133-14	N8088.D	03/22/18	12:33
CHAAP-20B-SS02	SL2133-15	N8089.D	03/22/18	13:05
CHAAP-20B-SS03	SL2133-16	N8090.D	03/22/18	13:37
CHAAP-20B-SS04	SL2133-17	N8091.D	03/22/18	14:09
CHAAP-20B-SS05	SL2133-18	N8092.D	03/22/18	14:40
CHAAP-20B-SS06	SL2133-19	N8093.D	03/22/18	15:12
Matrix Spike	WG225022-3	N8094.D	03/22/18	15:44
Matrix Spike Duplica	WG225022-4	N8095.D	03/22/18	16:16
CHAAP-20B-SS102	SL2133-21	N8096.D	03/22/18	16:48
CHAAP-20B-SS104	SL2133-22	N8097.D	03/22/18	17:20
Continuing Calibrati	WG225233-3	N8104.D	03/22/18	21:06

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N7969.D N7970.D N7968.D N7971.D N7972.D N7973.D
Column ID:
Calibration Date(s): 16-MAR-18 11:59, 16-MAR-18 14:38

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	2.0000	7.0000	10.0000	15.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.97504	1.03233	1.03846	1.03803	1.02911	0.95367	AVG		1.01111		3.66004	15.00000	O
2-Methylnaphthalene	31023	95581	279076	1007066	1329374	1921570	QUA	0.02192	1.17017	0.04682	0.99957	0.99000	O
Acenaphthylene	2.14477	2.14249	2.17292	2.13421	2.10974	2.02953	AVG		2.12228		2.34472	15.00000	O
Acenaphthene	1.44416	1.39166	1.38360	1.41070	1.36407	1.32137	AVG		1.38593		3.00786	15.00000	O
Fluorene	1.39196	1.44565	1.45553	1.46294	1.41754	1.36236	AVG		1.42266		2.78271	15.00000	O
Phenanthrene	1.29271	1.18070	1.22471	1.30558	1.25036	1.16203	AVG		1.23601		4.70658	15.00000	O
Anthracene	1.52132	1.46329	1.35473	1.37719	1.33296	1.23689	AVG		1.38106		7.25837	15.00000	O
Fluoranthene	1.32716	1.14753	1.11558	1.18790	1.12285	1.07080	AVG		1.16197		7.71301	15.00000	O
Pyrene	2.87524	2.60439	2.42221	2.46431	2.29623	2.10394	AVG		2.46105		10.7245(	15.00000	O
Benzo(a)anthracene	1.48692	1.33504	1.40172	1.43012	1.39107	1.35693	AVG		1.40030		3.86131	15.00000	O
Chrysene	19557	48948	172156	663405	905814	1488528	LNR	-0.29232	1.38021		0.99705	0.99000	O
Benzo(b)fluoranthene	1.25563	1.28568	1.24854	1.47525	1.35003	1.35597	AVG		1.32852		6.41284	15.00000	O
Benzo(k)fluoranthene	2.25189	2.02422	1.74268	1.65893	1.71797	1.62031	AVG		1.83600		13.53811	15.00000	O
Benzo(a)pyrene	1.42534	1.36882	1.27714	1.31388	1.30682	1.27236	AVG		1.32739		4.45304	15.00000	O
Indeno(1,2,3-cd)pyrene	1.04771	0.90444	1.02917	0.91849	0.94731	0.89685	AVG		0.95733		6.83281	15.00000	O
Dibenzo(a,h)anthracene	0.94345	0.86161	0.91134	0.93202	0.93797	0.92158	AVG		0.91800		3.26094	15.00000	O
Benzo(g,h,i)perylene	1.29008	1.16887	1.13206	1.13789	1.12038	1.07323	AVG		1.15375		6.38506	15.00000	O
2-Methylnaphthalene-D10	0.44559	0.48637	0.47880	0.48817	0.47912	0.44588	AVG		0.47066		4.17816	15.00000	
Fluorene-D10	0.97164	0.99020	1.00380	1.01015	0.97546	0.96127	AVG		0.98542		1.94911	15.00000	
Pyrene-D10	1.55752	1.50378	1.40995	1.45771	1.33847	1.20984	AVG		1.41288		8.83799	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8052.D N8053.D N8051.D N8054.D N8055.D N8056.D
Column ID:
Calibration Date(s): 21-MAR-18 10:57, 21-MAR-18 13:37

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	2.0000	7.0000	10.0000	15.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	1.07500	1.08809	1.08006	1.08046	1.02883	0.99033	AVG		1.05713		3.69084	15.00000	O
2-Methylnaphthalene	62784	127645	406993	1328962	1786939	2509398	LNR	-0.32954	0.66509		0.99754	0.99000	O
Acenaphthylene	2.14734	2.23269	2.21135	2.26887	2.20245	2.14783	AVG		2.20175		2.17084	15.00000	O
Acenaphthene	1.39097	1.45017	1.43918	1.44802	1.41120	1.39751	AVG		1.42284		1.84372	15.00000	O
Fluorene	1.43282	1.50237	1.52141	1.55025	1.49286	1.48198	AVG		1.49695		2.64226	15.00000	O
Phenanthrene	1.29909	1.34791	1.34635	1.31942	1.25634	1.23968	AVG		1.30146		3.49647	15.00000	O
Anthracene	1.38780	1.37167	1.34449	1.36824	1.29536	1.22030	AVG		1.33131		4.74736	15.00000	O
Fluoranthene	1.26884	1.12264	1.11165	1.11296	1.04463	0.98606	AVG		1.10779		8.56423	15.00000	O
Pyrene	3.57506	3.27478	2.70179	2.86930	2.59192	2.56522	AVG		2.92968		13.97471	15.00000	O
Benzo(a)anthracene	1.58480	1.45129	1.45286	1.50547	1.42271	1.43442	AVG		1.47526		4.11399	15.00000	O
Chrysene	21037	48235	209861	657070	925951	1376317	LNR	-0.21498	1.38870		0.99903	0.99000	O
Benzo(b)fluoranthene	1.72701	1.68584	1.50350	1.79097	1.59462	1.75597	AVG		1.67632		6.46305	15.00000	O
Benzo(k)fluoranthene	13260	30578	158536	426654	662441	914672	LNR	-0.19550	1.77535		0.99769	0.99000	O
Benzo(a)pyrene	1.63149	1.37503	1.19172	1.33643	1.30233	1.32662	AVG		1.36060		10.76393	15.00000	O
Indeno(1,2,3-cd)pyrene	0.45065	0.42296	0.41093	0.46231	0.48893	0.47588	AVG		0.45194		6.69049	15.00000	O
Dibenzo(a,h)anthracene	0.64512	0.52229	0.47258	0.62856	0.63949	0.64329	AVG		0.59189		12.68007	15.00000	O
Benzo(g,h,i)perylene	0.97029	0.73788	0.71442	0.86780	0.84904	0.84054	AVG		0.82999		11.22883	15.00000	O
2-Methylnaphthalene-D10	0.47358	0.48234	0.49802	0.49397	0.46813	0.45500	AVG		0.47851		3.39470	15.00000	
Fluorene-D10	0.93562	0.98822	0.97844	0.99807	0.97596	0.99308	AVG		0.97823		2.30173	15.00000	
Pyrene-D10	1.73104	1.73596	1.53113	1.63794	1.49717	1.49055	AVG		1.60397		7.06995	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225084-2
Lab File ID : N8024.D
Initial Calibration Date(s): 03/16/18 11:59 03/16/18 14:38

SDG: SL2133
Analytical Date: 03/20/18 10:39
Instrument ID: GCMS-N
Column ID:

Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.01111	1.05504	1.05504	0.010	4.34479	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	1.97382	0.77571	0.010	-1.30877	20.00000	Quadratic	
45 Acenaphthylene	2.12228	2.18126	2.18126	0.010	2.77927	20.00000	Averaged	
48 Acenaphthene	1.38593	1.43086	1.43086	0.010	3.24239	20.01000	Averaged	
56 Fluorene	1.42266	1.46328	1.46328	0.010	2.85503	20.00000	Averaged	
66 Phenanthrene	1.23601	1.26094	1.26094	0.010	2.01643	20.00000	Averaged	
67 Anthracene	1.38106	1.27576	1.27576	0.010	-7.62492	20.00000	Averaged	
70 Fluoranthene	1.16197	1.01015	1.01015	0.010	-13.06537	20.01000	Averaged	
72 Pyrene	2.46105	3.01423	3.01423	0.010	22.47727	20.00000	Averaged	*
74 Benzo(a)anthracene	1.40030	1.38082	1.38082	0.010	-1.39104	20.00000	Averaged	
77 Chrysene	2.00000	2.08563	1.60069	0.010	4.28174	20.00000	Linear	
80 Benzo(b)fluoranthene	1.32852	1.19689	1.19689	0.010	-9.90765	20.00000	Averaged	
81 Benzo(k)fluoranthene	1.83600	1.87498	1.87498	0.010	2.12335	20.00000	Averaged	
82 Benzo(a)pyrene	1.32739	1.23064	1.23064	0.010	-7.28886	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.95733	0.77153	0.77153	0.010	-19.40853	20.00000	Averaged	
86 Dibenzo(a,h)anthracene	0.91800	0.74483	0.74483	0.010	-18.86344	20.00000	Averaged	
87 Benzo(g,h,i)perylene	1.15375	1.01361	1.01361	0.010	-12.14628	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.47066	0.49864	0.49864	0.010	5.94516	20.00000	Averaged	
55 Fluorene-D10	0.98542	0.98633	0.98633	0.010	0.09207	20.00000	Averaged	
71 Pyrene-D10	1.41288	1.71770	1.71770	0.010	21.57425	20.00000	Averaged	*

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225084-3
Lab File ID : N8045.D
Initial Calibration Date(s): 03/16/18 11:59 03/16/18 14:38

SDG: SL2133
Analytical Date: 03/20/18 21:48
Instrument ID: GCMS-N
Column ID:

Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.01111	1.03905	1.03905	0.010	2.76404	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	2.02083	0.79307	0.010	1.04169	20.00000	Quadratic	
45 Acenaphthylene	2.12228	2.18736	2.18736	0.010	3.06664	20.00000	Averaged	
48 Acenaphthene	1.38593	1.41466	1.41466	0.010	2.07331	20.01000	Averaged	
56 Fluorene	1.42266	1.43869	1.43869	0.010	1.12658	20.00000	Averaged	
66 Phenanthrene	1.23601	1.24024	1.24024	0.010	0.34174	20.00000	Averaged	
67 Anthracene	1.38106	1.29799	1.29799	0.010	-6.01497	20.00000	Averaged	
70 Fluoranthene	1.16197	1.11911	1.11911	0.010	-3.68900	20.01000	Averaged	
72 Pyrene	2.46105	2.26121	2.26121	0.010	-8.12019	20.00000	Averaged	
74 Benzo(a)anthracene	1.40030	1.37260	1.37260	0.010	-1.97789	20.00000	Averaged	
77 Chrysene	2.00000	1.96806	1.51955	0.010	-1.59708	20.00000	Linear	
80 Benzo(b)fluoranthene	1.32852	1.40539	1.40539	0.010	5.78610	20.00000	Averaged	
81 Benzo(k)fluoranthene	1.83600	1.81215	1.81215	0.010	-1.29924	20.00000	Averaged	
82 Benzo(a)pyrene	1.32739	1.24622	1.24622	0.010	-6.11523	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.95733	0.66387	0.66387	0.010	-30.65431	20.00000	Averaged	*
86 Dibenzo(a,h)anthracene	0.91800	0.70540	0.70540	0.010	-23.15902	20.00000	Averaged	*
87 Benzo(g,h,i)perylene	1.15375	0.90710	0.90710	0.010	-21.37798	20.00000	Averaged	*
32 2-Methylnaphthalene-D10	0.47066	0.49469	0.49469	0.010	5.10662	20.00000	Averaged	
55 Fluorene-D10	0.98542	0.97017	0.97017	0.010	-1.54739	20.00000	Averaged	
71 Pyrene-D10	1.41288	1.29109	1.29109	0.010	-8.62034	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225136-9
Lab File ID : N8072.D
Initial Calibration Date(s): 03/21/18 10:57 03/21/18 13:37

SDG: SL2133
Analytical Date: 03/21/18 22:17
Instrument ID: GCMS-N
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	1.05713	1.04946	1.04946	0.010	-0.72594	20.00000	Averaged
33 2-Methylnaphthalene	2.00000	2.09184	0.78330	0.010	4.59221	20.00000	Linear
45 Acenaphthylene	2.20175	2.28897	2.28897	0.010	3.96098	20.00000	Averaged
48 Acenaphthene	1.42284	1.43003	1.43003	0.010	0.50502	20.01000	Averaged
56 Fluorene	1.49695	1.55321	1.55321	0.010	3.75856	20.00000	Averaged
66 Phenanthrene	1.30146	1.27634	1.27634	0.010	-1.93004	20.00000	Averaged
67 Anthracene	1.33131	1.35260	1.35260	0.010	1.59943	20.00000	Averaged
70 Fluoranthene	1.10779	1.07148	1.07148	0.010	-3.27817	20.01000	Averaged
72 Pyrene	2.92968	3.19478	3.19478	0.010	9.04894	20.00000	Averaged
74 Benzo(a)anthracene	1.47526	1.39977	1.39977	0.010	-5.11707	20.00000	Averaged
77 Chrysene	2.00000	2.13570	1.60234	0.010	6.78503	20.00000	Linear
80 Benzo(b)fluoranthene	1.67632	1.55912	1.55912	0.010	-6.99136	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	2.13220	2.03153	0.010	6.60989	20.00000	Linear
82 Benzo(a)pyrene	1.36060	1.25297	1.25297	0.010	-7.91104	20.01000	Averaged
85 Indeno(1,2,3-cd)pyrene	0.45194	0.38971	0.38971	0.010	-13.77030	20.00000	Averaged
86 Dibenzo(a,h)anthracene	0.59189	0.58650	0.58650	0.010	-0.91017	20.00000	Averaged
87 Benzo(g,h,i)perylene	0.82999	0.84592	0.84592	0.010	1.91875	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.47851	0.48981	0.48981	0.010	2.36097	20.00000	Averaged
55 Fluorene-D10	0.97823	1.00001	1.00001	0.010	2.22602	20.00000	Averaged
71 Pyrene-D10	1.60397	1.83090	1.83090	0.010	14.14849	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225233-2
Lab File ID : N8083.D
Initial Calibration Date(s): 03/21/18 10:57 03/21/18 13:37

SDG: SL2133
Analytical Date: 03/22/18 09:54
Instrument ID: GCMS-N
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.05713	1.06689	1.06689	0.010	0.92335	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	2.01527	0.75784	0.010	0.76340	20.00000	Linear	
45 Acenaphthylene	2.20175	2.21107	2.21107	0.010	0.42301	20.00000	Averaged	
48 Acenaphthene	1.42284	1.40130	1.40130	0.010	-1.51421	20.01000	Averaged	
56 Fluorene	1.49695	1.50895	1.50895	0.010	0.80139	20.00000	Averaged	
66 Phenanthrene	1.30146	1.33436	1.33436	0.010	2.52803	20.00000	Averaged	
67 Anthracene	1.33131	1.34012	1.34012	0.010	0.66208	20.00000	Averaged	
70 Fluoranthene	1.10779	1.06078	1.06078	0.010	-4.24369	20.01000	Averaged	
72 Pyrene	2.92968	2.99087	2.99087	0.010	2.08879	20.00000	Averaged	
74 Benzo(a)anthracene	1.47526	1.45613	1.45613	0.010	-1.29666	20.00000	Averaged	
77 Chrysene	2.00000	2.00905	1.51440	0.010	0.45245	20.00000	Linear	
80 Benzo(b)fluoranthene	1.67632	1.55944	1.55944	0.010	-6.97222	20.00000	Averaged	
81 Benzo(k)fluoranthene	2.00000	1.85051	1.78148	0.010	-7.47468	20.00000	Linear	
82 Benzo(a)pyrene	1.36060	1.26986	1.26986	0.010	-6.66911	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.45194	0.58072	0.58072	0.010	28.49495	20.00000	Averaged	*
86 Dibenzo(a,h)anthracene	0.59189	0.65434	0.65434	0.010	10.55111	20.00000	Averaged	
87 Benzo(g,h,i)perylene	0.82999	0.92094	0.92094	0.010	10.95798	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.47851	0.48944	0.48944	0.010	2.28390	20.00000	Averaged	
55 Fluorene-D10	0.97823	0.98849	0.98849	0.010	1.04832	20.00000	Averaged	
71 Pyrene-D10	1.60397	1.70002	1.70002	0.010	5.98826	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2133
Lab ID : WG225233-3
Analytical Date: 03/22/18 21:06
Lab File ID : N8104.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 03/21/18 10:57 03/21/18 13:37
Column ID:

Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.05713	1.08615	1.08615	0.010	2.74561	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	2.03668	0.76496	0.010	1.83404	20.00000	Linear	
45 Acenaphthylene	2.20175	2.19219	2.19219	0.010	-0.43457	20.00000	Averaged	
48 Acenaphthene	1.42284	1.45972	1.45972	0.010	2.59165	20.01000	Averaged	
56 Fluorene	1.49695	1.56720	1.56720	0.010	4.69264	20.00000	Averaged	
66 Phenanthrene	1.30146	1.38957	1.38957	0.010	6.76979	20.00000	Averaged	
67 Anthracene	1.33131	1.40411	1.40411	0.010	5.46804	20.00000	Averaged	
70 Fluoranthene	1.10779	1.12390	1.12390	0.010	1.45357	20.01000	Averaged	
72 Pyrene	2.92968	2.91571	2.91571	0.010	-0.47685	20.00000	Averaged	
74 Benzo(a)anthracene	1.47526	1.42288	1.42288	0.010	-3.55020	20.00000	Averaged	
77 Chrysene	2.00000	2.02678	1.52671	0.010	1.33878	20.00000	Linear	
80 Benzo(b)fluoranthene	1.67632	1.39901	1.39901	0.010	-16.54286	20.00000	Averaged	
81 Benzo(k)fluoranthene	2.00000	1.96482	1.88296	0.010	-1.75905	20.00000	Linear	
82 Benzo(a)pyrene	1.36060	1.31571	1.31571	0.010	-3.29970	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.45194	0.62009	0.62009	0.010	37.20639	20.00000	Averaged	*
86 Dibenzo(a,h)anthracene	0.59189	0.77256	0.77256	0.010	30.52393	20.00000	Averaged	*
87 Benzo(g,h,i)perylene	0.82999	0.88133	0.88133	0.010	6.18481	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.47851	0.50681	0.50681	0.010	5.91460	20.00000	Averaged	
55 Fluorene-D10	0.97823	1.00360	1.00360	0.010	2.59383	20.00000	Averaged	
71 Pyrene-D10	1.60397	1.58532	1.58532	0.010	-1.16231	20.00000	Averaged	

*** = Compound out of QC criteria**

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ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG224895-4
Lab File ID : N7968.D

SDG: SL2133
Analytical Date: 03/16/18 11:59
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	49167		6.98		153512		8.63		60609		10.95	
	Upper Limit	98334		7.14		307024		8.79		121218		11.12	
	Lower Limit	24583.5		6.81		76756		8.46		30304.5		10.79	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG225084-2	49920		6.94		161126		8.59		67002		10.93	
Method Blank Sample	WG225023-1	51696		6.94		175691		8.61		78341		10.93	
Laboratory Control S	WG225023-2	51394		6.94		177263		8.59		77880		10.93	
CHAAP-20B-EB-0315	SL2133-20	55126		6.94		186411		8.60		83959		10.93	
Method Blank Sample	WG225021-1	55702		6.94		188335		8.60		83863		10.93	
Laboratory Control S	WG225021-2	58278		6.94		197151		8.59		90454		10.93	
CHAAP-20B-SB01-11	SL2133-1	55079		6.94		188300		8.59		84634		10.93	
CHAAP-20B-SB01-4	SL2133-2	56125		6.94		189359		8.59		84641		10.93	
CHAAP-20B-SB01-8	SL2133-3	54564		6.94		180700		8.59		76713		10.93	
Continuing Calibrati	WG225084-3	53555		6.94		178719		8.59		72827		10.92	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG224895-4
Lab File ID : N7968.D

SDG: SL2133
Analytical Date: 03/16/18 11:59
Instrument ID: GCMS-N

		PHENANTHRENE-D10				CHRYSENE-D12				PERYLENE-D12			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	88968		12.94		42741		16.62		36674		19.51	
	Upper Limit	177936		13.11		85482		16.78		73348		19.67	
	Lower Limit	44484		12.78		21370.5		16.45		18337		19.34	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG225084-2	93335		12.91		31368		16.55		23549		19.42	
Method Blank Sample	WG225023-1	114343		12.92		38046		16.57		23785		19.42	
Laboratory Control S	WG225023-2	119760		12.91		56639		16.55		34854		19.41	
CHAAP-20B-EB-0315	SL2133-20	124654		12.91		51896		16.57		30026		19.42	
Method Blank Sample	WG225021-1	123576		12.91		48547		16.55		31056		19.41	
Laboratory Control S	WG225021-2	139517		12.91		74011		16.55		48980		19.40	
CHAAP-20B-SB01-11	SL2133-1	130859		12.91		67866		16.56		43767		19.40	
CHAAP-20B-SB01-4	SL2133-2	126572		12.91		61176		16.56		38904		19.40	
CHAAP-20B-SB01-8	SL2133-3	105612		12.91		49648		16.56		32246		19.41	
Continuing Calibrati	WG225084-3	101327		12.90		52131		16.55		36096		19.41	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225136-4
Lab File ID : N8051.D

SDG: SL2133
Analytical Date: 03/21/18 10:57
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	67704		6.94		211188		8.58		90519		10.92	
	Upper Limit	135408		7.11		422376		8.75		181038		11.08	
	Lower Limit	33852		6.77		105594		8.41		45259.5		10.75	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG225022-1	60364		6.94		190258		8.60		82987		10.93	
Laboratory Control S	WG225022-2	59547		6.94		193810		8.59		85463		10.92	
CHAAP-20B-SB02-4	SL2133-4	59804		6.94		193137		8.59		87461		10.92	
CHAAP-20B-SB02-8	SL2133-5	55453		6.94		174349		8.59		74734		10.92	
CHAAP-20B-SB03-4	SL2133-6	61372		6.94		196296		8.59		84049		10.92	
CHAAP-20B-SB03-8	SL2133-7	58505		6.94		186350		8.59		81557		10.92	
CHAAP-20B-SB04-4	SL2133-8	63413		6.93		200620		8.59		87177		10.92	
CHAAP-20B-SB04-8	SL2133-9	60320		6.94		190665		8.59		84098		10.92	
Continuing Calibrati	WG225136-9	63632		6.93		206220		8.59		86741		10.92	
Continuing Calibrati	WG225233-2	76438		6.93		240654		8.58		104258		10.92	
CHAAP-20B-SB05-4	SL2133-10	64636		6.93		201000		8.59		86066		10.92	
CHAAP-20B-SB05-8	SL2133-11	64669		6.93		197112		8.59		84536		10.92	
CHAAP-20B-SB06-4	SL2133-12	66038		6.93		204933		8.59		90361		10.92	
CHAAP-20B-SB06-8	SL2133-13	66857		6.93		211843		8.59		92213		10.92	
CHAAP-20B-SS01	SL2133-14	63726		6.93		200424		8.59		88914		10.92	
CHAAP-20B-SS02	SL2133-15	66348		6.93		206429		8.59		93504		10.90	
CHAAP-20B-SS03	SL2133-16	61206		6.93		193802		8.59		84232		10.90	
CHAAP-20B-SS04	SL2133-17	60962		6.93		195440		8.58		87371		10.90	
CHAAP-20B-SS05	SL2133-18	63921		6.93		201950		8.58		87846		10.90	
CHAAP-20B-SS06	SL2133-19	63451		6.93		204859		8.58		90085		10.90	
Matrix Spike	WG225022-3	62605		6.93		195309		8.58		83109		10.90	
Matrix Spike Duplica	WG225022-4	63787		6.93		202857		8.58		87049		10.90	
CHAAP-20B-SS102	SL2133-21	60939		6.93		198782		8.58		85667		10.90	
CHAAP-20B-SS104	SL2133-22	59799		6.93		191898		8.59		83201		10.90	
Continuing Calibrati	WG225233-3	77265		6.93		245997		8.58		108740		10.90	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225136-4
Lab File ID : N8051.D

SDG: SL2133
Analytical Date: 03/21/18 10:57
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	128283	12.90	55605	16.55	32614	19.42
	Upper Limit	256566	13.06	111210	16.72	65228	19.59
	Lower Limit	64141.5	12.73	27802.5	16.39	16307	19.26
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG225022-1	118337	12.91	48310	16.57	27460	19.43
Laboratory Control S	WG225022-2	120851	12.91	51265	16.56	25958	19.42
CHAAP-20B-SB02-4	SL2133-4	130640	12.91	49720	16.56	23245	19.42
CHAAP-20B-SB02-8	SL2133-5	104840	12.91	36758	16.57	17648	19.42
CHAAP-20B-SB03-4	SL2133-6	123340	12.91	46522	16.56	22828	19.42
CHAAP-20B-SB03-8	SL2133-7	114465	12.91	39141	16.57	18098	19.42
CHAAP-20B-SB04-4	SL2133-8	127426	12.91	43670	16.56	19991	19.43
CHAAP-20B-SB04-8	SL2133-9	119077	12.91	41783	16.57	20633	19.42
Continuing Calibrati	WG225136-9	129377	12.90	44618	16.55	20549	19.42
Continuing Calibrati	WG225233-2	145592	12.90	52808	16.54	33030	19.40
CHAAP-20B-SB05-4	SL2133-10	123177	12.90	41202	16.55	23440	19.40
CHAAP-20B-SB05-8	SL2133-11	119072	12.90	39534	16.55	23280	19.39
CHAAP-20B-SB06-4	SL2133-12	129579	12.90	45579	16.55	27388	19.39
CHAAP-20B-SB06-8	SL2133-13	130737	12.90	44692	16.55	26440	19.39
CHAAP-20B-SS01	SL2133-14	126117	12.90	39255	16.55	22926	19.39
CHAAP-20B-SS02	SL2133-15	133581	12.90	42453	16.54	24625	19.39
CHAAP-20B-SS03	SL2133-16	122311	12.90	40294	16.54	25945	19.39
CHAAP-20B-SS04	SL2133-17	127033	12.90	40731	16.54	25461	19.38
CHAAP-20B-SS05	SL2133-18	120101	12.90	37097	16.54	21737	19.39
CHAAP-20B-SS06	SL2133-19	127936	12.90	41249	16.54	26285	19.39
Matrix Spike	WG225022-3	117226	12.88	39814	16.54	24422	19.38
Matrix Spike Duplica	WG225022-4	126496	12.88	44520	16.54	26944	19.38
CHAAP-20B-SS102	SL2133-21	124798	12.90	40173	16.54	25023	19.39
CHAAP-20B-SS104	SL2133-22	120030	12.90	43844	16.54	27587	19.38
Continuing Calibrati	WG225233-3	160431	12.88	62817	16.54	38929	19.38

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-1
Client ID: CHAAP-20B-SB01-11
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10099.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1000	ug/Kgdrywt	1	100	130	11.	64.
RDX		2700	ug/Kgdrywt	1	100	130	8.6	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	7.9	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	6.9	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
Nitroglycerin	U	510	ug/Kgdrywt	1	800	1000	160	510
PETN	U	510	ug/Kgdrywt	1	800	1000	140	510
1,2-Dinitrobenzene		92.6	%					

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REISSUE

Katahdin Analytical Services A0000055

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-1
Client Sample ID : CHAAP-20B-SB01-11

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 07:06

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 17:41

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	1020	
	B	6.73	1440	34.1
RDX	A	4.99	2720	
	B	10.75	2700	.7

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-2
Client ID: CHAAP-20B-SB01-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10100.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 80.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	2300	ug/Kgdrywt	1	100	120	10.	61.
RDX		2200	ug/Kgdrywt	1	100	120	8.3	61.
1,3,5-Trinitrobenzene	U	61	ug/Kgdrywt	1	100	120	8.2	61.
1,3-Dinitrobenzene	U	61	ug/Kgdrywt	1	100	120	7.6	61.
Tetryl	U	61	ug/Kgdrywt	1	100	120	6.6	61.
Nitrobenzene	U	61	ug/Kgdrywt	1	100	120	27.	61.
2,4,6-Trinitrotoluene	U	61	ug/Kgdrywt	1	100	120	8.2	61.
2-Am-DNT	U	61	ug/Kgdrywt	1	100	120	26.	61.
4-Am-DNT	U	61	ug/Kgdrywt	1	100	120	21.	61.
2,6-Dinitrotoluene	U	61	ug/Kgdrywt	1	100	120	33.	61.
2,4-Dinitrotoluene	U	61	ug/Kgdrywt	1	100	120	18.	61.
2-Nitrotoluene	U	61	ug/Kgdrywt	1	100	120	15.	61.
3-Nitrotoluene	U	61	ug/Kgdrywt	1	100	120	9.6	61.
4-Nitrotoluene	U	61	ug/Kgdrywt	1	100	120	33.	61.
Nitroglycerin	U	490	ug/Kgdrywt	1	800	980	150	490
PETN	U	490	ug/Kgdrywt	1	800	980	130	490
1,2-Dinitrobenzene		93.1	%					

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REISSUE

Katahdin Analytical Services A0000057

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-2
Client Sample ID : CHAAP-20B-SB01-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 07:38

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 18:30

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	2280	
	B	6.71	3870	51.7
RDX	A	4.99	2220	
	B	10.73	2260	1.8

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-3
Client ID: CHAAP-20B-SB01-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10101.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	1800	ug/Kgdrywt	1	100	120	10.	59.
RDX		3100	ug/Kgdrywt	1	100	120	8.0	59.
1,3,5-Trinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
1,3-Dinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.3	59.
Tetryl	U	59	ug/Kgdrywt	1	100	120	6.4	59.
Nitrobenzene	U	59	ug/Kgdrywt	1	100	120	26.	59.
2,4,6-Trinitrotoluene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
2-Am-DNT	U	59	ug/Kgdrywt	1	100	120	25.	59.
4-Am-DNT	U	59	ug/Kgdrywt	1	100	120	20.	59.
2,6-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
2,4-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	18.	59.
2-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	14.	59.
3-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	9.3	59.
4-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	140	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		91.3	%					

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REISSUE

Katahdin Analytical Services A0000059

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-3
Client Sample ID : CHAAP-20B-SB01-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 08:10

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 19:19

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1840	
	B	6.71	2860	43.4
RDX	A	4.98	3120	
	B	10.73	3140	.6

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-4
Client ID: CHAAP-20B-SB02-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10102.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 81.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		950	ug/Kgdrywt	1	100	120	10.	60.
RDX		3500	ug/Kgdrywt	1	100	120	8.2	60.
1,3,5-Trinitrobenzene	U	60	ug/Kgdrywt	1	100	120	8.0	60.
1,3-Dinitrobenzene	U	60	ug/Kgdrywt	1	100	120	7.4	60.
Tetryl	U	60	ug/Kgdrywt	1	100	120	6.5	60.
Nitrobenzene	U	60	ug/Kgdrywt	1	100	120	26.	60.
2,4,6-Trinitrotoluene	U	60	ug/Kgdrywt	1	100	120	8.0	60.
2-Am-DNT	U	60	ug/Kgdrywt	1	100	120	25.	60.
4-Am-DNT	U	60	ug/Kgdrywt	1	100	120	20.	60.
2,6-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
2,4-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	18.	60.
2-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	14.	60.
3-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	9.5	60.
4-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
Nitroglycerin	U	480	ug/Kgdrywt	1	800	960	150	480
PETN	U	480	ug/Kgdrywt	1	800	960	130	480
1,2-Dinitrobenzene		93.5	%					

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REISSUE

Katahdin Analytical Services A0000061

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-4
Client Sample ID : CHAAP-20B-SB02-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 08:41

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 20:08

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	951	
	B	6.7	725	27
RDX	A	4.98	3480	
	B	10.73	3440	1.2

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-5
Client ID: CHAAP-20B-SB02-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10106.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 74.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		3200	ug/Kgdrywt	1	100	130	11.	64.
RDX	E	7600	ug/Kgdrywt	1	100	130	8.8	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.0	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	7.0	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		96.3	%					

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Katahdin Analytical Services A0000063

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-5
Client Sample ID : CHAAP-20B-SB02-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 10:48

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 12:15

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	3220	
	B	6.63	3110	3.5
RDX	A	4.99	7590	
	B	10.57	7850	3.4

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-5DL
Client ID: CHAAP-20B-SB02-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10147.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 23-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 74.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		3100	ug/Kgdrywt	2	100	260	22.	130
RDX		7200	ug/Kgdrywt	2	100	260	18.	130
1,3,5-Trinitrobenzene	U	130	ug/Kgdrywt	2	100	260	17.	130
1,3-Dinitrobenzene	U	130	ug/Kgdrywt	2	100	260	16.	130
Tetryl	U	130	ug/Kgdrywt	2	100	260	14.	130
Nitrobenzene	U	130	ug/Kgdrywt	2	100	260	57.	130
2,4,6-Trinitrotoluene	U	130	ug/Kgdrywt	2	100	260	17.	130
2-Am-DNT	U	130	ug/Kgdrywt	2	100	260	54.	130
4-Am-DNT	U	130	ug/Kgdrywt	2	100	260	44.	130
2,6-Dinitrotoluene	U	130	ug/Kgdrywt	2	100	260	70.	130
2,4-Dinitrotoluene	U	130	ug/Kgdrywt	2	100	260	39.	130
2-Nitrotoluene	U	130	ug/Kgdrywt	2	100	260	31.	130
3-Nitrotoluene	U	130	ug/Kgdrywt	2	100	260	20.	130
4-Nitrotoluene	U	130	ug/Kgdrywt	2	100	260	70.	130
Nitroglycerin	U	1000	ug/Kgdrywt	2	800	2100	320	1000
PETN	U	1000	ug/Kgdrywt	2	800	2100	280	1000
1,2-Dinitrobenzene		90.7	%					

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Katahdin Analytical Services A0000065

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-6
Client ID: CHAAP-20B-SB03-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10107.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1200	ug/Kgdrywt	1	100	130	11.	65.
RDX		240	ug/Kgdrywt	1	100	130	8.8	65.
1,3,5-Trinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
1,3-Dinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.0	65.
Tetryl	U	65	ug/Kgdrywt	1	100	130	7.0	65.
Nitrobenzene	U	65	ug/Kgdrywt	1	100	130	28.	65.
2,4,6-Trinitrotoluene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
2-Am-DNT	U	65	ug/Kgdrywt	1	100	130	27.	65.
4-Am-DNT	U	65	ug/Kgdrywt	1	100	130	22.	65.
2,6-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
2,4-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	19.	65.
2-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	16.	65.
3-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	10.	65.
4-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		91.2	%					

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Katahdin Analytical Services A0000066

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-6
Client Sample ID : CHAAP-20B-SB03-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 11:20

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 13:02

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1220	
	B	6.63	1190	2.5
RDX	A	4.99	242	
	B	10.61	247	2

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-7
Client ID: CHAAP-20B-SB03-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10108.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1400	ug/Kgdrywt	1	100	120	10.	60.
RDX		630	ug/Kgdrywt	1	100	120	8.2	60.
1,3,5-Trinitrobenzene	U	60	ug/Kgdrywt	1	100	120	8.1	60.
1,3-Dinitrobenzene	U	60	ug/Kgdrywt	1	100	120	7.5	60.
Tetryl	U	60	ug/Kgdrywt	1	100	120	6.5	60.
Nitrobenzene	U	60	ug/Kgdrywt	1	100	120	26.	60.
2,4,6-Trinitrotoluene	U	60	ug/Kgdrywt	1	100	120	8.1	60.
2-Am-DNT	U	60	ug/Kgdrywt	1	100	120	25.	60.
4-Am-DNT	U	60	ug/Kgdrywt	1	100	120	20.	60.
2,6-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
2,4-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	18.	60.
2-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	14.	60.
3-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	9.5	60.
4-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
Nitroglycerin	U	480	ug/Kgdrywt	1	800	960	150	480
PETN	U	480	ug/Kgdrywt	1	800	960	130	480
1,2-Dinitrobenzene		91.5	%					

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REISSUE

Katahdin Analytical Services A0000068

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-7
Client Sample ID : CHAAP-20B-SB03-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 11:52

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 13:49

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1430	
	B	6.63	1390	2.8
RDX	A	4.99	634	
	B	10.58	659	3.9

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-8RE
Client ID: CHAAP-20B-SB04-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10181.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 26-MAR-18
Extracted By: DP/AC
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225426

Analysis Date: 27-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 79.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		390	ug/Kgdrywt	1	100	120	11.	62.
RDX	J	67	ug/Kgdrywt	1	100	120	8.5	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.7	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.7	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.8	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	1000	150	500
PETN	U	500	ug/Kgdrywt	1	800	1000	130	500
1,2-Dinitrobenzene		85.6	%					

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REISSUE

Katahdin Analytical Services A0000070

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-8
Client Sample ID : CHAAP-20B-SB04-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/27/18
Time Analyzed : 13:18

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 03:11

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	392	
	B	6.64	379	3.4
RDX	A	5	67.2	
	B	10.61	86.2	24.8

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-9
Client ID: CHAAP-20B-SB04-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10110.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		320	ug/Kgdrywt	1	100	120	10.	62.
RDX		550	ug/Kgdrywt	1	100	120	8.4	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.2	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.6	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.6	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.2	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	18.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.7	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
Nitroglycerin	U	490	ug/Kgdrywt	1	800	980	150	490
PETN	U	490	ug/Kgdrywt	1	800	980	130	490
1,2-Dinitrobenzene		85.8	%					

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REISSUE

Katahdin Analytical Services A0000072

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-9
Client Sample ID : CHAAP-20B-SB04-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 12:56

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 15:24

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	316	
	B	6.65	300	5.2
RDX	A	4.99	553	
	B	10.63	589	6.3

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-10
Client ID: CHAAP-20B-SB05-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10111.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	64	ug/Kgdrywt	1	100	130	11.	64.
RDX	U	64	ug/Kgdrywt	1	100	130	8.8	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.0	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	7.0	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		85.1	%					

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Katahdin Analytical Services A0000074

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-11
Client ID: CHAAP-20B-SB05-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10112.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	19	ug/Kgdrywt	1	100	120	10.	59.
RDX	J	94	ug/Kgdrywt	1	100	120	8.0	59.
1,3,5-Trinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
1,3-Dinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.3	59.
Tetryl	U	59	ug/Kgdrywt	1	100	120	6.4	59.
Nitrobenzene	U	59	ug/Kgdrywt	1	100	120	26.	59.
2,4,6-Trinitrotoluene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
2-Am-DNT	U	59	ug/Kgdrywt	1	100	120	25.	59.
4-Am-DNT	U	59	ug/Kgdrywt	1	100	120	20.	59.
2,6-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
2,4-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	18.	59.
2-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	14.	59.
3-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	9.3	59.
4-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	150	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		88.0	%					

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REISSUE

Katahdin Analytical Services A0000075

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-11
Client Sample ID : CHAAP-20B-SB05-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 13:59

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 16:58

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	19.3	
	B	6.65	28.1	37.1
RDX	A	4.98	94.3	
	B	10.63	105	10.7

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-12
Client ID: CHAAP-20B-SB06-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10113.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 79.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1200	ug/Kgdrywt	1	100	120	11.	62.
RDX	J	96	ug/Kgdrywt	1	100	120	8.5	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.8	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.8	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	28.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.9	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	1000	160	500
PETN	U	500	ug/Kgdrywt	1	800	1000	140	500
1,2-Dinitrobenzene		86.1	%					

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REISSUE

Katahdin Analytical Services A0000077

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-12
Client Sample ID : CHAAP-20B-SB06-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 14:31

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 17:45

Analyte	Column	RT	Concentration	RPD
HMX	A	4.53	1200	
	B	6.64	1180	1.7
RDX	A	4.98	96.3	
	B	10.62	108	11.5

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-13
Client ID: CHAAP-20B-SB06-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10115.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 75.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		2200	ug/Kgdrywt	1	100	130	11.	65.
RDX		1500	ug/Kgdrywt	1	100	130	8.9	65.
1,3,5-Trinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
1,3-Dinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.1	65.
Tetryl	U	65	ug/Kgdrywt	1	100	130	7.0	65.
Nitrobenzene	U	65	ug/Kgdrywt	1	100	130	29.	65.
2,4,6-Trinitrotoluene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
2-Am-DNT	U	65	ug/Kgdrywt	1	100	130	27.	65.
4-Am-DNT	U	65	ug/Kgdrywt	1	100	130	22.	65.
2,6-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
2,4-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	20.	65.
2-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	16.	65.
3-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	10.	65.
4-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		86.3	%					

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REISSUE

Katahdin Analytical Services A0000079

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-13
Client Sample ID : CHAAP-20B-SB06-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 16:54

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 18:32

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	2240	
	B	6.64	2230	.4
RDX	A	4.98	1470	
	B	10.61	1540	4.7

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-14
Client ID: CHAAP-20B-SS01
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10116.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 85.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		140	ug/Kgdrywt	1	100	120	10.	58.
RDX	J	28	ug/Kgdrywt	1	100	120	7.9	58.
1,3,5-Trinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.8	58.
1,3-Dinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.2	58.
Tetryl	U	58	ug/Kgdrywt	1	100	120	6.2	58.
Nitrobenzene	U	58	ug/Kgdrywt	1	100	120	25.	58.
2,4,6-Trinitrotoluene	U	58	ug/Kgdrywt	1	100	120	7.8	58.
2-Am-DNT	U	58	ug/Kgdrywt	1	100	120	24.	58.
4-Am-DNT	U	58	ug/Kgdrywt	1	100	120	20.	58.
2,6-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	31.	58.
2,4-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	17.	58.
2-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	14.	58.
3-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	9.1	58.
4-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	31.	58.
Nitroglycerin	U	460	ug/Kgdrywt	1	800	930	140	460
PETN	U	460	ug/Kgdrywt	1	800	930	120	460
1,2-Dinitrobenzene		85.5	%					

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REISSUE

Katahdin Analytical Services A0000081

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-14
Client Sample ID : CHAAP-20B-SS01

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 17:25

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 20:07

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	139	
	B	6.64	112	21.5
RDX	A	4.98	27.8	
	B	10.57	28.9	3.9

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-15
Client ID: CHAAP-20B-SS02
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10117.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 80.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		420	ug/Kgdrywt	1	100	120	10.	58.
RDX		700	ug/Kgdrywt	1	100	120	8.0	58.
1,3,5-Trinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.8	58.
1,3-Dinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.3	58.
Tetryl	U	58	ug/Kgdrywt	1	100	120	6.3	58.
Nitrobenzene	U	58	ug/Kgdrywt	1	100	120	26.	58.
2,4,6-Trinitrotoluene	J	45	ug/Kgdrywt	1	100	120	7.8	58.
2-Am-DNT	J	72	ug/Kgdrywt	1	100	120	25.	58.
4-Am-DNT	JJ	110	ug/Kgdrywt	1	100	120	20.	58.
2,6-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	32.	58.
2,4-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	18.	58.
2-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	14.	58.
3-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	9.2	58.
4-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	32.	58.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	140	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		83.8	%					

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REISSUE

Katahdin Analytical Services A0000083

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-15
Client Sample ID : CHAAP-20B-SS02

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 17:57

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 20:54

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	415	
	B	6.63	340	19.9
RDX	A	4.99	704	
	B	10.61	736	4.4
2,4,6-Trinitrotoluene	A	26.42	45.4	
	B	18.79	38.9	15.4
2-Am-DNT	A	9.7	71.6	
	B	32.11	52.5	30.8
4-Am-DNT	A	9.14	113	
	B	30.31	74.2	41.5

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-16
Client ID: CHAAP-20B-SS03
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10118.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		600	ug/Kgdrywt	1	100	130	11.	65.
RDX	J	71	ug/Kgdrywt	1	100	130	8.8	65.
1,3,5-Trinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
1,3-Dinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.0	65.
Tetryl	U	65	ug/Kgdrywt	1	100	130	7.0	65.
Nitrobenzene	U	65	ug/Kgdrywt	1	100	130	28.	65.
2,4,6-Trinitrotoluene	J	72	ug/Kgdrywt	1	100	130	8.7	65.
2-Am-DNT	J	48	ug/Kgdrywt	1	100	130	27.	65.
4-Am-DNT	J	150	ug/Kgdrywt	1	100	130	22.	65.
2,6-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
2,4-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	19.	65.
2-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	16.	65.
3-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	10.	65.
4-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		86.1	%					

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REISSUE

Katahdin Analytical Services A0000085

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-16
Client Sample ID : CHAAP-20B-SS03

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 18:29

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 21:41

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	598	
	B	6.63	562	6.2
RDX	A	4.98	70.7	
	B	10.63	79.4	11.6
2,4,6-Trinitrotoluene	A	26.33	71.8	
	B	18.75	69.9	2.7
2-Am-DNT	A	9.7	47.6	
	B	32.12	35.9	28
4-Am-DNT	A	9.13	146	
	B	30.23	94.1	43.2

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-17
Client ID: CHAAP-20B-SS04
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10119.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	93	ug/Kgdrywt	1	100	110	9.8	57.
RDX	J	22	ug/Kgdrywt	1	100	110	7.8	57.
1,3,5-Trinitrobenzene	U	57	ug/Kgdrywt	1	100	110	7.6	57.
1,3-Dinitrobenzene	U	57	ug/Kgdrywt	1	100	110	7.1	57.
Tetryl	U	57	ug/Kgdrywt	1	100	110	6.2	57.
Nitrobenzene	U	57	ug/Kgdrywt	1	100	110	25.	57.
2,4,6-Trinitrotoluene	JJ	23	ug/Kgdrywt	1	100	110	7.6	57.
2-Am-DNT	U	57	ug/Kgdrywt	1	100	110	24.	57.
4-Am-DNT	U	57	ug/Kgdrywt	1	100	110	19.	57.
2,6-Dinitrotoluene	U	57	ug/Kgdrywt	1	100	110	31.	57.
2,4-Dinitrotoluene	U	57	ug/Kgdrywt	1	100	110	17.	57.
2-Nitrotoluene	U	57	ug/Kgdrywt	1	100	110	14.	57.
3-Nitrotoluene	U	57	ug/Kgdrywt	1	100	110	9.0	57.
4-Nitrotoluene	U	57	ug/Kgdrywt	1	100	110	31.	57.
Nitroglycerin	U	460	ug/Kgdrywt	1	800	910	140	460
PETN	U	460	ug/Kgdrywt	1	800	910	120	460
1,2-Dinitrobenzene		83.3	%					

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REISSUE

Katahdin Analytical Services A0000087

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-17
Client Sample ID : CHAAP-20B-SS04

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 19:01

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 22:28

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	92.7	
	B	6.63	89.6	3.4
RDX	A	4.96	22.4	
	B	10.6	16.7	29.2
2,4,6-Trinitrotoluene	A	26.42	22.6	
	B	18.73	14.9	41.1

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-18
Client ID: CHAAP-20B-SS05
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10120.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	75	ug/Kgdrywt	1	100	130	11.	64.
RDX	U	64	ug/Kgdrywt	1	100	130	8.6	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	7.9	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	6.9	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
Nitroglycerin	U	510	ug/Kgdrywt	1	800	1000	160	510
PETN	U	510	ug/Kgdrywt	1	800	1000	140	510
1,2-Dinitrobenzene		83.3	%					

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Katahdin Analytical Services A0000089

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-18
Client Sample ID : CHAAP-20B-SS05

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 19:33

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 23:15

Analyte	Column	RT	Concentration	RPD
HMX	A	4.53	75.1	
	B	6.63	55.7	29.7

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10121.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		400	ug/Kgdrywt	1	100	120	11.	62.
RDX		140	ug/Kgdrywt	1	100	120	8.5	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.7	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.7	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene		120	ug/Kgdrywt	1	100	120	8.4	62.
2-Am-DNT	J	100	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT		190	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.9	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	1000	150	500
PETN	U	500	ug/Kgdrywt	1	800	1000	130	500
1,2-Dinitrobenzene		86.2	%					

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REISSUE

Katahdin Analytical Services A0000091

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-19
Client Sample ID : CHAAP-20B-SS06

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 20:04

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 00:02

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	395	
	B	6.64	355	10.7
RDX	A	4.98	136	
	B	10.6	175	25.1
2,4,6-Trinitrotoluene	A	26.42	124	
	B	18.78	113	9.3
2-Am-DNT	A	9.7	100	
	B	32.08	83.7	17.7
4-Am-DNT	A	9.13	187	
	B	30.27	137	30.9

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-20
Client ID: CHAAP-20B-EB-031518
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10047.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		97.0	%					

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Katahdin Analytical Services A0000093

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ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-21
Client ID: CHAAP-20B-SS102
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10122.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 81.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1400	ug/Kgdrywt	1	100	120	10.	59.
RDX	E	26000	ug/Kgdrywt	1	100	120	8.0	59.
1,3,5-Trinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
1,3-Dinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.3	59.
Tetryl	U	59	ug/Kgdrywt	1	100	120	6.4	59.
Nitrobenzene	U	59	ug/Kgdrywt	1	100	120	26.	59.
2,4,6-Trinitrotoluene	J	77	ug/Kgdrywt	1	100	120	7.9	59.
2-Am-DNT	J	64	ug/Kgdrywt	1	100	120	25.	59.
4-Am-DNT	JJ	100	ug/Kgdrywt	1	100	120	20.	59.
2,6-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
2,4-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	18.	59.
2-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	14.	59.
3-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	9.3	59.
4-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	150	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		84.9	%					

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REISSUE

Katahdin Analytical Services A0000094

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-21
Client Sample ID : CHAAP-20B-SS102

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 20:36

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 00:50

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1450	
	B	6.64	1360	6.4
RDX	A	4.99	25700	
	B	10.58	26100	1.5
2,4,6-Trinitrotoluene	A	26.46	76.7	
	B	18.76	62.7	20.1
2-Am-DNT	A	9.69	64	
	B	32.05	48.5	27.6
4-Am-DNT	A	9.13	105	
	B	30.27	58.8	56.4

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-21DL
Client ID: CHAAP-20B-SS102
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10150.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 23-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 81.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1200	ug/Kgdrywt	10	100	1200	100	590
RDX		22000	ug/Kgdrywt	10	100	1200	80.	590
1,3,5-Trinitrobenzene	U	590	ug/Kgdrywt	10	100	1200	79.	590
1,3-Dinitrobenzene	U	590	ug/Kgdrywt	10	100	1200	73.	590
Tetryl	U	590	ug/Kgdrywt	10	100	1200	64.	590
Nitrobenzene	U	590	ug/Kgdrywt	10	100	1200	260	590
2,4,6-Trinitrotoluene	U	590	ug/Kgdrywt	10	100	1200	79.	590
2-Am-DNT	U	590	ug/Kgdrywt	10	100	1200	250	590
4-Am-DNT	U	590	ug/Kgdrywt	10	100	1200	200	590
2,6-Dinitrotoluene	U	590	ug/Kgdrywt	10	100	1200	320	590
2,4-Dinitrotoluene	U	590	ug/Kgdrywt	10	100	1200	180	590
2-Nitrotoluene	U	590	ug/Kgdrywt	10	100	1200	140	590
3-Nitrotoluene	U	590	ug/Kgdrywt	10	100	1200	93.	590
4-Nitrotoluene	U	590	ug/Kgdrywt	10	100	1200	320	590
Nitroglycerin	U	4700	ug/Kgdrywt	10	800	9400	1500	4700
PETN	U	4700	ug/Kgdrywt	10	800	9400	1300	4700
1,2-Dinitrobenzene	D	0.00	%					

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REISSUE

Katahdin Analytical Services A0000096

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-22
Client ID: CHAAP-20B-SS104
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10123.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 79.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	95	ug/Kgdrywt	1	100	120	11.	62.
RDX	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.3	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.7	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.7	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.3	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.8	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	990	150	500
PETN	U	500	ug/Kgdrywt	1	800	990	130	500
1,2-Dinitrobenzene		81.6	%					

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REISSUE

Katahdin Analytical Services A0000097

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-22
Client Sample ID : CHAAP-20B-SS104

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 21:08

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 01:37

Analyte	Column	RT	Concentration	RPD
HMX	A	4.53	94.8	
	B	6.64	72	27.3

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225027-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10039.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	50	ug/Kgdrywt	1	100	100	8.6	50.
RDX	U	50	ug/Kgdrywt	1	100	100	6.8	50.
1,3,5-Trinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
1,3-Dinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.2	50.
Tetryl	U	50	ug/Kgdrywt	1	100	100	5.4	50.
Nitrobenzene	U	50	ug/Kgdrywt	1	100	100	22.	50.
2,4,6-Trinitrotoluene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
2-Am-DNT	U	50	ug/Kgdrywt	1	100	100	21.	50.
4-Am-DNT	U	50	ug/Kgdrywt	1	100	100	17.	50.
2,6-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
2,4-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	15.	50.
2-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	12.	50.
3-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	7.9	50.
4-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
Nitroglycerin	U	400	ug/Kgdrywt	1	800	800	120	400
PETN	U	400	ug/Kgdrywt	1	800	800	110	400
1,2-Dinitrobenzene		90.4	%					

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REISSUE

Katahdin Analytical Services A0000099

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225094-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10044.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		96.3	%					

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REISSUE

Katahdin Analytical Services A0000100

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225028-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10082.D

Sample Date:
Received Date:
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	50	ug/Kgdrywt	1	100	100	8.6	50.
RDX	U	50	ug/Kgdrywt	1	100	100	6.8	50.
1,3,5-Trinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
1,3-Dinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.2	50.
Tetryl	U	50	ug/Kgdrywt	1	100	100	5.4	50.
Nitrobenzene	U	50	ug/Kgdrywt	1	100	100	22.	50.
2,4,6-Trinitrotoluene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
2-Am-DNT	U	50	ug/Kgdrywt	1	100	100	21.	50.
4-Am-DNT	U	50	ug/Kgdrywt	1	100	100	17.	50.
2,6-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
2,4-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	15.	50.
2-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	12.	50.
3-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	7.9	50.
4-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
Nitroglycerin	U	400	ug/Kgdrywt	1	800	800	120	400
PETN	U	400	ug/Kgdrywt	1	800	800	110	400
1,2-Dinitrobenzene		94.8	%					

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Katahdin Analytical Services A0000101

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ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG225426-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10176.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: DP/AC
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225426

Analysis Date: 27-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	50	ug/Kgdrywt	1	100	100	8.6	50.
RDX	U	50	ug/Kgdrywt	1	100	100	6.8	50.
1,3,5-Trinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
1,3-Dinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.2	50.
Tetryl	U	50	ug/Kgdrywt	1	100	100	5.4	50.
Nitrobenzene	U	50	ug/Kgdrywt	1	100	100	22.	50.
2,4,6-Trinitrotoluene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
2-Am-DNT	U	50	ug/Kgdrywt	1	100	100	21.	50.
4-Am-DNT	U	50	ug/Kgdrywt	1	100	100	17.	50.
2,6-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
2,4-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	15.	50.
2-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	12.	50.
3-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	7.9	50.
4-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
Nitroglycerin	U	400	ug/Kgdrywt	1	800	800	120	400
PETN	U	400	ug/Kgdrywt	1	800	800	110	400
1,2-Dinitrobenzene		87.4	%					

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REISSUE

Katahdin Analytical Services A0000102

Katahdin
ANALYTICAL SERVICES

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-20B-EB-031518	SL2133-20	B	97.0	
Method Blank Sample	WG225094-1	B	96.3	
Laboratory Control S	WG225094-2	B	101.	

		QC Limits
DNB	1,2-DINITROBENZENE	83-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-20B-SB01-11	SL2133-1	B	92.6	
CHAAP-20B-SB05-4	SL2133-10	B	85.1	
CHAAP-20B-SB05-8	SL2133-11	B	88.0	
CHAAP-20B-SB06-4	SL2133-12	B	86.1	
CHAAP-20B-SB06-8	SL2133-13	B	86.3	
CHAAP-20B-SS01	SL2133-14	B	85.5	
CHAAP-20B-SS02	SL2133-15	B	83.8	
CHAAP-20B-SS03	SL2133-16	B	86.1	
CHAAP-20B-SS04	SL2133-17	B	83.3	
CHAAP-20B-SS05	SL2133-18	B	83.3	
CHAAP-20B-SS06	SL2133-19	B	86.2	
CHAAP-20B-SB01-4	SL2133-2	B	93.1	
CHAAP-20B-SS102	SL2133-21	B	84.9	
CHAAP-20B-SS102	SL2133-21DL	B	0.00	D
CHAAP-20B-SS104	SL2133-22	B	81.6	
CHAAP-20B-SB01-8	SL2133-3	B	91.3	
CHAAP-20B-SB02-4	SL2133-4	B	93.5	
CHAAP-20B-SB02-8	SL2133-5	B	96.3	
CHAAP-20B-SB02-8	SL2133-5DL	B	90.7	
CHAAP-20B-SB03-4	SL2133-6	B	91.2	
CHAAP-20B-SB03-8	SL2133-7	B	91.5	
CHAAP-20B-SB04-4	SL2133-8RE	B	85.6	
CHAAP-20B-SB04-8	SL2133-9	B	85.8	
Method Blank Sample	WG225027-1	B	90.4	
Laboratory Control S	WG225027-2	B	99.4	
Laboratory Control S	WG225027-5	B	101.	
Method Blank Sample	WG225028-1	B	94.8	
Laboratory Control S	WG225028-2	B	102.	
Matrix Spike	WG225028-3	B	100.	
Matrix Spike Duplica	WG225028-4	B	97.3	
Method Blank Sample	WG225426-1	B	87.4	
Laboratory Control S	WG225426-2	B	96.6	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

		QC Limits
DNB	1,2-DINITROBENZENE	78-125

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Katahdin
ANALYTICAL SERVICES

LCS/LCSD Recovery Report

LCS ID: WG225027-2
LCSD ID: WG225027-5
Project:
SDG: SL2133
Report Date: 20-APR-18
LCS File ID: HLC10040.D

Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027
LCSD File ID: HLC10041.D

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
HMX	1000	1030	103.	1030	103.	ug/Kgdrywt	0	20	74-125
RDX	1000	993.	99.3	984.	98.4	ug/Kgdrywt	1	20	67-129
1,3,5-Trinitrobenzene	1000	1040	104.	1050	105.	ug/Kgdrywt	1	20	80-125
1,3-Dinitrobenzene	1000	1030	103.	1030	103.	ug/Kgdrywt	0	20	73-125
Tetryl	1000	1090	109.	1120	112.	ug/Kgdrywt	3	20	68-135
Nitrobenzene	1000	1000	100.	1000	100.	ug/Kgdrywt	0	20	67-129
2,4,6-Trinitrotoluene	1000	1020	102.	1020	102.	ug/Kgdrywt	0	20	71-125
2-Am-DNT	1000	1010	101.	1010	101.	ug/Kgdrywt	0	20	71-125
4-Am-DNT	1000	1060	106.	1070	107.	ug/Kgdrywt	1	20	64-127
2,6-Dinitrotoluene	1000	1030	103.	1010	101.	ug/Kgdrywt	2	20	79-125
2,4-Dinitrotoluene	1000	1040	104.	1030	103.	ug/Kgdrywt	1	20	75-125
2-Nitrotoluene	1000	1060	106.	1050	105.	ug/Kgdrywt	1	20	70-125
3-Nitrotoluene	1000	1040	104.	1040	104.	ug/Kgdrywt	0	20	67-129
4-Nitrotoluene	1000	1090	109.	1080	108.	ug/Kgdrywt	1	20	71-125
Nitroglycerin	1000	880.	88.0	822.	82.2	ug/Kgdrywt	7	20	73-125
PETN	1000	1030	103.	1130	113.	ug/Kgdrywt	9	20	72-128
1,2-Dinitrobenzene			99.4		101.				78-125

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REISSUE

Katahdin Analytical Services A0000106

Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225094-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: HLC10045.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 30-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	113.	5.00	5.66	ug/L	65-135
RDX	114.	5.00	5.71	ug/L	68-130
1,3,5-Trinitrobenzene	110.	5.00	5.51	ug/L	73-125
1,3-Dinitrobenzene	115.	5.00	5.74	ug/L	78-120
Tetryl	103.	5.00	5.16	ug/L	64-128
Nitrobenzene	115.	5.00	5.74	ug/L	65-134
2,4,6-Trinitrotoluene	109.	5.00	5.44	ug/L	71-123
4-Am-DNT	121.	5.00	6.03	ug/L	76-125
2-Am-DNT	114.	5.00	5.70	ug/L	79-120
2,6-Dinitrotoluene	111.	5.00	5.54	ug/L	77-127
2,4-Dinitrotoluene	116.	5.00	5.79	ug/L	78-120
2-Nitrotoluene	117.	5.00	5.85	ug/L	70-127
4-Nitrotoluene	120.	5.00	6.01	ug/L	71-127
3-Nitrotoluene	111.	5.00	5.53	ug/L	73-125
Nitroglycerin	111.	20.0	22.2	ug/L	74-127
PETN	103.	20.0	20.6	ug/L	73-127
1,2-Dinitrobenzene	101.				83-120

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REISSUE

Katahdin Analytical Services A0000107

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG225028-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: HLC10083.D

Sample Date:
Received Date:
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 20-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	105.	1000	1050	ug/Kgdrywt	74-125
RDX	100.	1000	1000	ug/Kgdrywt	67-129
1,3,5-Trinitrobenzene	102.	1000	1020	ug/Kgdrywt	80-125
1,3-Dinitrobenzene	104.	1000	1040	ug/Kgdrywt	73-125
Tetryl	110.	1000	1100	ug/Kgdrywt	68-135
Nitrobenzene	101.	1000	1010	ug/Kgdrywt	67-129
2,4,6-Trinitrotoluene	103.	1000	1030	ug/Kgdrywt	71-125
2-Am-DNT	103.	1000	1030	ug/Kgdrywt	71-125
4-Am-DNT	109.	1000	1090	ug/Kgdrywt	64-127
2,6-Dinitrotoluene	103.	1000	1030	ug/Kgdrywt	79-125
2,4-Dinitrotoluene	105.	1000	1050	ug/Kgdrywt	75-125
2-Nitrotoluene	105.	1000	1050	ug/Kgdrywt	70-125
3-Nitrotoluene	104.	1000	1040	ug/Kgdrywt	67-129
4-Nitrotoluene	110.	1000	1100	ug/Kgdrywt	71-125
Nitroglycerin	91.9	1000	919.	ug/Kgdrywt	73-125
PETN	114.	1000	1140	ug/Kgdrywt	72-128
1,2-Dinitrobenzene	102.				78-125

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REISSUE

Katahdin Analytical Services A0000108

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG225426-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: HLC10177.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: DP/AC
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225426

Analysis Date: 27-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 20-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	100.	1000	1000	ug/Kgdrywt	74-125
RDX	99.0	1000	990.	ug/Kgdrywt	67-129
1,3,5-Trinitrobenzene	104.	1000	1040	ug/Kgdrywt	80-125
1,3-Dinitrobenzene	106.	1000	1060	ug/Kgdrywt	73-125
Tetryl	110.	1000	1100	ug/Kgdrywt	68-135
Nitrobenzene	102.	1000	1020	ug/Kgdrywt	67-129
2,4,6-Trinitrotoluene	103.	1000	1030	ug/Kgdrywt	71-125
2-Am-DNT	102.	1000	1020	ug/Kgdrywt	71-125
4-Am-DNT	107.	1000	1070	ug/Kgdrywt	64-127
2,6-Dinitrotoluene	103.	1000	1030	ug/Kgdrywt	79-125
2,4-Dinitrotoluene	106.	1000	1060	ug/Kgdrywt	75-125
2-Nitrotoluene	107.	1000	1070	ug/Kgdrywt	70-125
3-Nitrotoluene	105.	1000	1050	ug/Kgdrywt	67-129
4-Nitrotoluene	112.	1000	1120	ug/Kgdrywt	71-125
Nitroglycerin	77.9	1000	779.	ug/Kgdrywt	73-125
PETN	96.2	1000	962.	ug/Kgdrywt	72-128
1,2-Dinitrobenzene	96.6				78-125

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REISSUE

Katahdin Analytical Services A0000109

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MS/MSD Recovery Report

MS ID: WG225028-3
MSD ID: WG225028-4
Sample ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project:
SDG: SL2133
MS File ID: HLC10104.D

Received Date:
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028
Report Date: 20-APR-18
MSD File ID: HLC10105.D

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
HMX	1260	1260	ug/Kgdrywt	400	1800	1700	108.	100.	6	20	74-125
RDX	1260	1260	ug/Kgdrywt	140	1400	1400	98.7	96.3	2	20	67-129
1,3,5-Trinitrobenzene	1260	1260	ug/Kgdrywt	U62	1300	1300	102.	101.	1	20	80-125
1,3-Dinitrobenzene	1260	1260	ug/Kgdrywt	U62	1300	1300	103.	103.	0	20	73-125
Tetryl	1260	1260	ug/Kgdrywt	U62	1400	1400	109.	109.	0	20	68-135
Nitrobenzene	1260	1260	ug/Kgdrywt	U62	1300	1200	99.9	99.1	1	20	67-129
2,4,6-Trinitrotoluene	1260	1260	ug/Kgdrywt	120	1400	1400	101.	98.8	2	20	71-125
2-Am-DNT	1260	1260	ug/Kgdrywt	J100	1400	1400	102.	99.9	1	20	71-125
4-Am-DNT	1260	1260	ug/Kgdrywt	190	1600	1500	108.	104.	3	20	64-127
2,6-Dinitrotoluene	1260	1260	ug/Kgdrywt	U62	1200	1300	99.1	99.9	1	20	79-125
2,4-Dinitrotoluene	1260	1260	ug/Kgdrywt	U62	1300	1300	102.	102.	0	20	75-125
2-Nitrotoluene	1260	1260	ug/Kgdrywt	U62	1300	1300	104.	104.	0	20	70-125
3-Nitrotoluene	1260	1260	ug/Kgdrywt	U62	1300	1300	102.	102.	0	20	67-129
4-Nitrotoluene	1260	1260	ug/Kgdrywt	U62	1400	1400	108.	108.	0	20	71-125
Nitroglycerin	1260	1260	ug/Kgdrywt	U500	1100	1200	88.8	91.2	3	20	73-125
PETN	1260	1260	ug/Kgdrywt	U500	1300	1300	106.	105.	1	20	72-128
1,2-Dinitrobenzene							100.	97.3			78-125

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REISSUE

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10039.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225027-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 19:09

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225027-2	HLC10040.	03/20/18	19:40
Laboratory Control S	WG225027-5	HLC10041.	03/20/18	20:12
CHAAP-20B-SB01-11	SL2133-1	HLC10099.	03/22/18	07:06
CHAAP-20B-SB01-4	SL2133-2	HLC10100.	03/22/18	07:38
CHAAP-20B-SB01-8	SL2133-3	HLC10101.	03/22/18	08:10
CHAAP-20B-SB02-4	SL2133-4	HLC10102.	03/22/18	08:41

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10153.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225027-1C
Date Extracted : 19-MAR-18
Date Analyzed : 23-MAR-18
Time Analyzed : 16:52

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-20B-SB01-11	SL2133-1C	HLC10154.	03/23/18	17:41
CHAAP-20B-SB01-4	SL2133-2C	HLC10155.	03/23/18	18:30
CHAAP-20B-SB01-8	SL2133-3C	HLC10156.	03/23/18	19:19
CHAAP-20B-SB02-4	SL2133-4C	HLC10157.	03/23/18	20:08

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10044.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL2133
Lab Sample ID : WG225094-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 21:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225094-2	HLC10045.	03/20/18	22:19
CHAAP-20B-EB-031518	SL2133-20	HLC10047.	03/20/18	23:23

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10082.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225028-1
Date Extracted : 20-MAR-18
Date Analyzed : 21-MAR-18
Time Analyzed : 19:10

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225028-2	HLC10083.	03/21/18	19:41
Matrix Spike	WG225028-3	HLC10104.	03/22/18	09:45
Matrix Spike Duplica	WG225028-4	HLC10105.	03/22/18	10:17
CHAAP-20B-SB02-8	SL2133-5	HLC10106.	03/22/18	10:48
CHAAP-20B-SB03-4	SL2133-6	HLC10107.	03/22/18	11:20
CHAAP-20B-SB03-8	SL2133-7	HLC10108.	03/22/18	11:52
CHAAP-20B-SB04-8	SL2133-9	HLC10110.	03/22/18	12:56
CHAAP-20B-SB05-4	SL2133-10	HLC10111.	03/22/18	13:27
CHAAP-20B-SB05-8	SL2133-11	HLC10112.	03/22/18	13:59
CHAAP-20B-SB06-4	SL2133-12	HLC10113.	03/22/18	14:31
CHAAP-20B-SB06-8	SL2133-13	HLC10115.	03/22/18	16:54
CHAAP-20B-SS01	SL2133-14	HLC10116.	03/22/18	17:25
CHAAP-20B-SS02	SL2133-15	HLC10117.	03/22/18	17:57
CHAAP-20B-SS03	SL2133-16	HLC10118.	03/22/18	18:29
CHAAP-20B-SS04	SL2133-17	HLC10119.	03/22/18	19:01
CHAAP-20B-SS05	SL2133-18	HLC10120.	03/22/18	19:33
CHAAP-20B-SS06	SL2133-19	HLC10121.	03/22/18	20:04
CHAAP-20B-SS102	SL2133-21	HLC10122.	03/22/18	20:36
CHAAP-20B-SS104	SL2133-22	HLC10123.	03/22/18	21:08
CHAAP-20B-SB02-8	SL2133-5DL	HLC10147.	03/23/18	10:09
CHAAP-20B-SS102	SL2133-21DL	HLC10150.	03/23/18	13:04

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10201.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225028-1C
Date Extracted : 20-MAR-18
Date Analyzed : 28-MAR-18
Time Analyzed : 11:28

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-20B-SB02-8	SL2133-5C	HLC10202.	03/28/18	12:15
CHAAP-20B-SB03-4	SL2133-6C	HLC10203.	03/28/18	13:02
CHAAP-20B-SB03-8	SL2133-7C	HLC10204.	03/28/18	13:49
CHAAP-20B-SB04-8	SL2133-9C	HLC10206.	03/28/18	15:24
CHAAP-20B-SB05-4	SL2133-10C	HLC10207.	03/28/18	16:11
CHAAP-20B-SB05-8	SL2133-11C	HLC10208.	03/28/18	16:58
CHAAP-20B-SB06-4	SL2133-12C	HLC10209.	03/28/18	17:45
CHAAP-20B-SB06-8	SL2133-13C	HLC10210.	03/28/18	18:32
CHAAP-20B-SS01	SL2133-14C	HLC10212.	03/28/18	20:07
CHAAP-20B-SS02	SL2133-15C	HLC10213.	03/28/18	20:54
CHAAP-20B-SS03	SL2133-16C	HLC10214.	03/28/18	21:41
CHAAP-20B-SS04	SL2133-17C	HLC10215.	03/28/18	22:28
CHAAP-20B-SS05	SL2133-18C	HLC10216.	03/28/18	23:15
CHAAP-20B-SS06	SL2133-19C	HLC10217.	03/29/18	00:02
CHAAP-20B-SS102	SL2133-21C	HLC10218.	03/29/18	00:50
CHAAP-20B-SS104	SL2133-22C	HLC10219.	03/29/18	01:37

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10176.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225426-1
Date Extracted : 26-MAR-18
Date Analyzed : 27-MAR-18
Time Analyzed : 10:03

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225426-2	HLC10177.	03/27/18	10:35
CHAAP-20B-SB04-4	SL2133-8RE	HLC10181.	03/27/18	13:18

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10220.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225426-1C
Date Extracted : 26-MAR-18
Date Analyzed : 29-MAR-18
Time Analyzed : 02:24

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-20B-SB04-4	SL2133-8REC	HLC10221.	03/29/18	03:11

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HKH10014.I HKH10013.I HKH10012.I HKH10011.I HKH10010.I HKH10009.I HKH10008.I
Calibration Date(s): 01-AUG-17 09:37 01-AUG-17 14:33

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
HMX	143	204	424	1108	2190	4103	8448		LNR	-0.00406	4200	0.99963	0.99000	O
RDX	92.00000	202	389	1038	2084	3920	8183		LNR	0.00215	4071	0.99952	0.99000	O
1,3,5-trinitrobenzene	222	508	1024	2674	5383	10154	20806		LNR	-0.00071	10372	0.99973	0.99000	O
1,3-dinitrobenzene	264	581	1148	2994	6045	11405	23270		LNR	-0.00176	11603	0.99976	0.99000	O
TETRYL	98.00000	244	482	1267	2545	4803	9244		LNR	-0.01222	4644	0.99914	0.99000	O
nitrobenzene	142	331	655	1720	3466	6563	13345		LNR	-0.00158	6659	0.99979	0.99000	O
2,4,6-trinitrotoluene	135	313	627	1624	3260	6187	12320		LNR	-0.00578	6161	0.99976	0.99000	O
2-AM-DNT	65.00000	171	311	854	1698	3193	6303		LNR	-0.00832	3155	0.99955	0.99000	O
4-AM-DNT	63.00000	118	244	663	1299	2450	4682		LNR	-0.01508	2353	0.99890	0.99000	O
2,6-dinitrotoluene	76.00000	172	369	981	1970	3749	7493		LNR	-0.00306	3750	0.99978	0.99000	O
2,4-dinitrotoluene	136	329	692	1809	3639	6925	13785		LNR	-0.00420	6900	0.99976	0.99000	O
2-nitrotoluene	63.00000	115	257	686	1382	2659	5246		LNR	-0.00402	2630	0.99976	0.99000	O
3-nitrotoluene	72.00000	124	256	701	1390	2617	5111		LNR	-0.01061	2561	0.99942	0.99000	O
4-nitrotoluene	101	120	227	531	1075	2023	3902		LNR	-0.02177	1947	0.99936	0.99000	O
1,2-dinitrobenzene	117	263	530	1379	2756	5196	10604		LNR	-0.00227	5286	0.99974	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File IDs : HLC10037.D, HLC10036.D, HLC10035.D, HLC10034.D, HLC10033.D, HLC10032.D, HLC10031.D

SDG: SL2133
Instrument ID: HPLC02
Calibration Date(s): 20-MAR-18 14:54
20-MAR-18 18:05

	0.025000(Level 1	0.050000(Level 2	0.100000(Level 3	0.250000(Level 4	0.5000000 Level 5	1.0000 Level 6	2.0000 Level 7	New Crv	b	m1	%RSD	Max %RSD	
NITROGLYCERIN	5440	5685	5280	5392	5454	5917	5425	AVG		5513	3.90686	20.00000	O
PETN	3020	2970	2465	3064	2834	3010	2768	AVG		2876	7.31282	15.00000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D HLC10036.D HLC10035.D HLC10034.D HLC10033.D HLC10032.D HLC10031.D
Calibration Date(s): 20-MAR-18 14:54 20-MAR-18 18:05

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
HMX	5320	5440	5140	5296	5378	5810	5351		AVG		5391	3.83807	20.00000	O
RDX	75.00000	225	466	1287	2694	5888	10895		LNR	0.00587	5552	0.99828	0.99000	O
1,3,5-trinitrobenzene	3240	3680	3770	3628	3744	4074	3686		AVG		3689	6.66990	20.00000	O
1,3-dinitrobenzene	6680	7280	7410	7508	7512	8198	7518		AVG		7444	5.99405	20.00000	O
TETRYL	2240	2660	2530	2424	2550	2797	2541		AVG		2535	6.90733	20.00000	O
nitrobenzene	6760	6820	6610	6736	6892	7418	6831		AVG		6867	3.77157	20.00000	O
2,4,6-trinitrotoluene	2600	2520	2510	2460	2478	2672	2445		AVG		2526	3.24744	20.00000	O
2-AM-DNT	5360	5700	5640	5720	5838	6280	5787		AVG		5761	4.78978	20.00000	O
4-AM-DNT	4200	4040	4240	4260	4366	4695	4318		AVG		4303	4.68155	20.00000	O
2,6-dinitrotoluene	101	175	345	733	1390	3147	5661		LNR	-0.01275	2869	0.99714	0.99000	O
2,4-dinitrotoluene	4280	4700	4560	4552	4620	5008	4610		AVG		4619	4.68458	20.00000	O
2-nitrotoluene	2520	2760	2900	2944	2952	3214	2937		AVG		2890	7.31192	20.00000	O
3-nitrotoluene	3360	3180	3390	3404	3136	3585	3225		AVG		3326	4.69272	20.00000	O
4-nitrotoluene	2280	1980	2350	2484	2298	2635	2370		AVG		2342	8.60342	20.00000	O
1,2-dinitrobenzene	4680	4500	4480	4532	4640	4978	4582		AVG		4627	3.69030	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-9
Lab File ID : HLC10049.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 00:26
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5412	0.010	-1.83553	20.00000	Averaged
140 PETN	2876	2882	0.010	0.19684	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-13
Lab File ID : HLC10081.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 18:38
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5380	0.010	-2.41596	20.00000	Averaged
140 PETN	2876	2806	0.010	-2.42848	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-14
Lab File ID : HLC10092.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 00:27
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5396	0.010	-2.12574	20.00000	Averaged
140 PETN	2876	2806	0.010	-2.44587	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-15
Lab File ID : HLC10103.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 09:13
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5384	0.010	-2.34340	20.00000	Averaged
140 PETN	2876	2764	0.010	-3.88893	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-16
Lab File ID : HLC10114.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 16:22
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5446	0.010	-1.22790	20.00000	Averaged
140 PETN	2876	2822	0.010	-1.87212	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-17
Lab File ID : HLC10124.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 21:40
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5344	0.010	-3.06894	20.00000	Averaged
140 PETN	2876	2759	0.010	-4.06279	20.00000	Averaged

*** = Compound out of QC criteria**

600 Technology Way
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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-24
Lab File ID : HLC10175.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 08:57
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5513	0.010	-0.01263	20.00000	Averaged
140 PETN	2876	2825	0.010	-1.76781	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-25
Lab File ID : HLC10180.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 12:10
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5481	0.010	-0.58399	20.00000	Averaged
140 PETN	2876	2836	0.010	-1.38531	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-26
Lab File ID : HLC10191.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 18:36
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5503	0.010	-0.18495	20.00000	Averaged
140 PETN	2876	2836	0.010	-1.38531	20.00000	Averaged

*** = Compound out of QC criteria**

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-9
Lab File ID : HLC10049.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 00:26
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.50000	0.48680	5340	0.010	-2.64053	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3670	3670	0.010	-0.51119	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7568	7568	0.010	1.66967	20.00000	Averaged
7	nitrobenzene	6867	6846	6846	0.010	-0.30063	20.00000	Averaged
9	TETRYL	2535	2450	2450	0.010	-3.33672	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2460	2460	0.010	-2.62659	20.00000	Averaged
11	4-AM-DNT	4303	4346	4346	0.010	1.00601	20.00000	Averaged
12	2-AM-DNT	5761	5818	5818	0.010	0.99442	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48644	2864	0.010	-2.71162	20.00000	Linear
14	2,4-dinitrotoluene	4619	4600	4600	0.010	-0.40056	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2480	2480	0.010	5.87303	20.00000	Averaged
17	3-nitrotoluene	3326	3392	3392	0.010	1.99532	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4632	4632	0.010	0.09879	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-13
Lab File ID : HLC10081.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 18:38
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5288	5288	0.010	-1.90409	20.00000	Averaged
4	RDX	0.25000	0.23859	5168	0.010	-4.56414	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3736	3736	0.010	1.27798	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7752	7752	0.010	4.14156	20.00000	Averaged
7	nitrobenzene	6867	6748	6748	0.010	-1.72781	20.00000	Averaged
9	TETRYL	2535	2624	2624	0.010	3.52835	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2464	2464	0.010	-2.46826	20.00000	Averaged
11	4-AM-DNT	4303	4320	4320	0.010	0.40174	20.00000	Averaged
12	2-AM-DNT	5761	5732	5732	0.010	-0.49845	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23859	2884	0.010	-4.56349	20.00000	Linear
14	2,4-dinitrotoluene	4619	4584	4584	0.010	-0.74700	20.00000	Averaged
15	2-nitrotoluene	2890	3120	3120	0.010	7.97449	20.00000	Averaged
16	4-nitrotoluene	2342	2740	2740	0.010	16.97262	20.00000	Averaged
17	3-nitrotoluene	3326	3476	3476	0.010	4.52115	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4576	4576	0.010	-1.11139	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-14
Lab File ID : HLC10092.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 00:27
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5370	5370	0.010	-0.38294	20.00000	Averaged
4	RDX	0.50000	0.48842	5358	0.010	-2.31631	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3718	3718	0.010	0.79002	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7578	7578	0.010	1.80401	20.00000	Averaged
7	nitrobenzene	6867	6804	6804	0.010	-0.91228	20.00000	Averaged
9	TETRYL	2535	2586	2586	0.010	2.02908	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2450	2450	0.010	-3.02242	20.00000	Averaged
11	4-AM-DNT	4303	4318	4318	0.010	0.35526	20.00000	Averaged
12	2-AM-DNT	5761	5754	5754	0.010	-0.11655	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48261	2842	0.010	-3.47852	20.00000	Linear
14	2,4-dinitrotoluene	4619	4604	4604	0.010	-0.31395	20.00000	Averaged
15	2-nitrotoluene	2890	2986	2986	0.010	3.33712	20.00000	Averaged
16	4-nitrotoluene	2342	2452	2452	0.010	4.67768	20.00000	Averaged
17	3-nitrotoluene	3326	3306	3306	0.010	-0.59065	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4566	4566	0.010	-1.32749	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-15
Lab File ID : HLC10103.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 09:13
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5312	5312	0.010	-1.45888	20.00000	Averaged
4	RDX	0.25000	0.24633	5340	0.010	-1.46605	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3384	3384	0.010	-8.26427	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7072	7072	0.010	-4.99367	20.00000	Averaged
7	nitrobenzene	6867	6608	6608	0.010	-3.76666	20.00000	Averaged
9	TETRYL	2535	2344	2344	0.010	-7.51888	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2276	2276	0.010	-9.90981	20.00000	Averaged
11	4-AM-DNT	4303	4096	4096	0.010	-4.80428	20.00000	Averaged
12	2-AM-DNT	5761	5412	5412	0.010	-6.05332	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.22883	2772	0.010	-8.46775	20.00000	Linear
14	2,4-dinitrotoluene	4619	4236	4236	0.010	-8.28191	20.00000	Averaged
15	2-nitrotoluene	2890	2876	2876	0.010	-0.46967	20.00000	Averaged
16	4-nitrotoluene	2342	2248	2248	0.010	-4.03123	20.00000	Averaged
17	3-nitrotoluene	3326	3072	3072	0.010	-7.62688	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4552	4552	0.010	-1.63003	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-16
Lab File ID : HLC10114.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 16:22
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5362	5362	0.010	-0.53134	20.00000	Averaged
4	RDX	0.50000	0.49076	5384	0.010	-1.84799	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3764	3764	0.010	2.03702	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7644	7644	0.010	2.69067	20.00000	Averaged
7	nitrobenzene	6867	6814	6814	0.010	-0.76665	20.00000	Averaged
9	TETRYL	2535	2698	2698	0.010	6.44798	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2510	2510	0.010	-0.64746	20.00000	Averaged
11	4-AM-DNT	4303	4344	4344	0.010	0.95953	20.00000	Averaged
12	2-AM-DNT	5761	5812	5812	0.010	0.89027	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48714	2868	0.010	-2.57218	20.00000	Linear
14	2,4-dinitrotoluene	4619	4648	4648	0.010	0.63874	20.00000	Averaged
15	2-nitrotoluene	2890	2990	2990	0.010	3.47555	20.00000	Averaged
16	4-nitrotoluene	2342	2460	2460	0.010	5.01921	20.00000	Averaged
17	3-nitrotoluene	3326	3336	3336	0.010	0.31143	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4602	4602	0.010	-0.54952	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-17
Lab File ID : HLC10124.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 21:40
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5300	5300	0.010	-1.68149	20.00000	Averaged
4	RDX	0.25000	0.24021	5204	0.010	-3.91570	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3664	3664	0.010	-0.67384	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7540	7540	0.010	1.29352	20.00000	Averaged
7	nitrobenzene	6867	6712	6712	0.010	-2.25209	20.00000	Averaged
9	TETRYL	2535	2508	2508	0.010	-1.04836	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2448	2448	0.010	-3.10159	20.00000	Averaged
11	4-AM-DNT	4303	4308	4308	0.010	0.12285	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23301	2820	0.010	-6.79449	20.00000	Linear
14	2,4-dinitrotoluene	4619	4588	4588	0.010	-0.66039	20.00000	Averaged
15	2-nitrotoluene	2890	3016	3016	0.010	4.37534	20.00000	Averaged
16	4-nitrotoluene	2342	2448	2448	0.010	4.50692	20.00000	Averaged
17	3-nitrotoluene	3326	3264	3264	0.010	-1.85356	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4568	4568	0.010	-1.28427	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-19
Lab File ID : HLC10146.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/23/18 09:19
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.25000	0.23967	5192	0.010	-4.13185	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3720	3720	0.010	0.84424	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7664	7664	0.010	2.95935	20.00000	Averaged
7	nitrobenzene	6867	6832	6832	0.010	-0.50451	20.00000	Averaged
9	TETRYL	2535	2480	2480	0.010	-2.15308	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2420	2420	0.010	-4.20990	20.00000	Averaged
11	4-AM-DNT	4303	4392	4392	0.010	2.07510	20.00000	Averaged
12	2-AM-DNT	5761	5836	5836	0.010	1.30688	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.24208	2924	0.010	-3.16911	20.00000	Linear
14	2,4-dinitrotoluene	4619	4664	4664	0.010	0.98517	20.00000	Averaged
15	2-nitrotoluene	2890	3076	3076	0.010	6.45177	20.00000	Averaged
16	4-nitrotoluene	2342	2504	2504	0.010	6.89760	20.00000	Averaged
17	3-nitrotoluene	3326	3404	3404	0.010	2.35615	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4640	4640	0.010	0.27167	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-20
Lab File ID : HLC10151.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/23/18 13:44
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5462	5462	0.010	1.32372	20.00000	Averaged
4	RDX	0.50000	0.50175	5506	0.010	0.34949	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3856	3856	0.010	4.53102	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7814	7814	0.010	4.97448	20.00000	Averaged
7	nitrobenzene	6867	6904	6904	0.010	0.54404	20.00000	Averaged
9	TETRYL	2535	2766	2766	0.010	9.13088	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2550	2550	0.010	0.93585	20.00000	Averaged
11	4-AM-DNT	4303	4444	4444	0.010	3.28364	20.00000	Averaged
12	2-AM-DNT	5761	5922	5922	0.010	2.79975	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49655	2922	0.010	-0.68977	20.00000	Linear
14	2,4-dinitrotoluene	4619	4756	4756	0.010	2.97716	20.00000	Averaged
15	2-nitrotoluene	2890	3056	3056	0.010	5.75963	20.00000	Averaged
16	4-nitrotoluene	2342	2526	2526	0.010	7.83680	20.00000	Averaged
17	3-nitrotoluene	3326	3396	3396	0.010	2.11560	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4682	4682	0.010	1.17930	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-21
Lab File ID : HLC10152.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/23/18 16:02
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.48050	4070	0.010	-3.89900	20.00000	Linear
4	RDX	0.50000	0.48510	3932	0.010	-2.98042	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.48336	10042	0.010	-3.32837	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.48542	11306	0.010	-2.91564	20.00000	Linear
7	nitrobenzene	0.50000	0.49051	6554	0.010	-1.89752	20.00000	Linear
9	TETRYL	0.50000	0.46169	4402	0.010	-7.66164	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47679	5946	0.010	-4.64253	20.00000	Linear
11	4-AM-DNT	0.50000	0.46220	2246	0.010	-7.55951	20.00000	Linear
12	2-AM-DNT	0.50000	0.48448	3110	0.010	-3.10305	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.48602	3668	0.010	-2.79503	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.48666	6774	0.010	-2.66846	20.00000	Linear
15	2-nitrotoluene	0.50000	0.48948	2596	0.010	-2.10312	20.00000	Linear
16	4-nitrotoluene	0.50000	0.55414	2242	0.010	10.82721	20.00000	Linear
17	3-nitrotoluene	0.50000	0.46920	2458	0.010	-6.15969	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.45816	4868	0.010	-8.36808	20.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-22
Lab File ID : HLC10163.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/24/18 01:03
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.23405	4000	0.010	-6.37877	20.00000	Linear
4	RDX	0.25000	0.23650	3816	0.010	-5.39947	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23375	9728	0.010	-6.49814	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.23575	11024	0.010	-5.69813	20.00000	Linear
7	nitrobenzene	0.25000	0.23823	6388	0.010	-4.70632	20.00000	Linear
9	TETRYL	0.25000	0.20482	4032	0.010	-18.07241	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.22974	5804	0.010	-8.10444	20.00000	Linear
11	4-AM-DNT	0.25000	0.21612	2176	0.010	-13.55128	20.00000	Linear
12	2-AM-DNT	0.25000	0.23190	3032	0.010	-7.23912	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.23668	3596	0.010	-5.32659	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.23492	6600	0.010	-6.03047	20.00000	Linear
15	2-nitrotoluene	0.25000	0.24159	2584	0.010	-3.36431	20.00000	Linear
16	4-nitrotoluene	0.25000	0.27415	2304	0.010	9.65919	20.00000	Linear
17	3-nitrotoluene	0.25000	0.22286	2392	0.010	-10.85737	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22416	4788	0.010	-10.33490	20.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-24
Lab File ID : HLC10175.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 08:57
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5420	5420	0.010	0.54459	20.00000	Averaged
4	RDX	0.50000	0.49238	5402	0.010	-1.52377	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3778	3778	0.010	2.41654	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7760	7760	0.010	4.24903	20.00000	Averaged
7	nitrobenzene	6867	6904	6904	0.010	0.54404	20.00000	Averaged
9	TETRYL	2535	2450	2450	0.010	-3.33672	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2516	2516	0.010	-0.40996	20.00000	Averaged
11	4-AM-DNT	4303	4382	4382	0.010	1.84269	20.00000	Averaged
12	2-AM-DNT	5761	5868	5868	0.010	1.86237	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.50945	2996	0.010	1.88983	20.00000	Linear
14	2,4-dinitrotoluene	4619	4694	4694	0.010	1.63473	20.00000	Averaged
15	2-nitrotoluene	2890	3056	3056	0.010	5.75963	20.00000	Averaged
16	4-nitrotoluene	2342	2492	2492	0.010	6.38531	20.00000	Averaged
17	3-nitrotoluene	3326	3386	3386	0.010	1.81490	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4602	4602	0.010	-0.54952	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-25
Lab File ID : HLC10180.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 12:10
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5424	5424	0.010	0.61880	20.00000	Averaged
4	RDX	0.25000	0.24345	5276	0.010	-2.61883	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3816	3816	0.010	3.44667	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7764	7764	0.010	4.30277	20.00000	Averaged
7	nitrobenzene	6867	6840	6840	0.010	-0.38800	20.00000	Averaged
9	TETRYL	2535	2424	2424	0.010	-4.36253	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2568	2568	0.010	1.64834	20.00000	Averaged
11	4-AM-DNT	4303	4408	4408	0.010	2.44696	20.00000	Averaged
12	2-AM-DNT	5761	5876	5876	0.010	2.00124	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23650	2860	0.010	-5.40011	20.00000	Linear
14	2,4-dinitrotoluene	4619	4676	4676	0.010	1.24499	20.00000	Averaged
15	2-nitrotoluene	2890	3160	3160	0.010	9.35878	20.00000	Averaged
16	4-nitrotoluene	2342	2480	2480	0.010	5.87303	20.00000	Averaged
17	3-nitrotoluene	3326	3336	3336	0.010	0.31143	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4608	4608	0.010	-0.41986	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-26
Lab File ID : HLC10191.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 18:36
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5424	5424	0.010	0.61880	20.00000	Averaged
4	RDX	0.25000	0.24201	5244	0.010	-3.19522	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3732	3732	0.010	1.16955	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7708	7708	0.010	3.55045	20.00000	Averaged
7	nitrobenzene	6867	6784	6784	0.010	-1.20354	20.00000	Averaged
9	TETRYL	2535	2352	2352	0.010	-7.20325	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2488	2488	0.010	-1.51828	20.00000	Averaged
11	4-AM-DNT	4303	4372	4372	0.010	1.61028	20.00000	Averaged
12	2-AM-DNT	5761	5836	5836	0.010	1.30688	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23929	2892	0.010	-4.28461	20.00000	Linear
14	2,4-dinitrotoluene	4619	4700	4700	0.010	1.76464	20.00000	Averaged
15	2-nitrotoluene	2890	3152	3152	0.010	9.08192	20.00000	Averaged
16	4-nitrotoluene	2342	2496	2496	0.010	6.55608	20.00000	Averaged
17	3-nitrotoluene	3326	3372	3372	0.010	1.39393	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4584	4584	0.010	-0.93850	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-28
Lab File ID : HLC10200.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/28/18 10:07
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.48431	4102	0.010	-3.13702	20.00000	Linear
4	RDX	0.50000	0.49124	3982	0.010	-1.75218	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.48683	10114	0.010	-2.63422	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.49102	11436	0.010	-1.79528	20.00000	Linear
7	nitrobenzene	0.50000	0.49592	6626	0.010	-0.81633	20.00000	Linear
9	TETRYL	0.50000	0.49787	4738	0.010	-0.42700	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.49237	6138	0.010	-1.52602	20.00000	Linear
11	4-AM-DNT	0.50000	0.48388	2348	0.010	-3.22441	20.00000	Linear
12	2-AM-DNT	0.50000	0.49811	3196	0.010	-0.37757	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.49776	3756	0.010	-0.44829	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.49709	6918	0.010	-0.58155	20.00000	Linear
15	2-nitrotoluene	0.50000	0.50279	2666	0.010	0.55833	20.00000	Linear
16	4-nitrotoluene	0.50000	0.54232	2196	0.010	8.46401	20.00000	Linear
17	3-nitrotoluene	0.50000	0.49106	2570	0.010	-1.78716	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46289	4918	0.010	-7.42226	20.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-29
Lab File ID : HLC10211.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/28/18 19:20
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.24167	4128	0.010	-3.33086	20.00000	Linear
4	RDX	0.25000	0.24092	3888	0.010	-3.63080	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23886	9940	0.010	-4.45426	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.24334	11376	0.010	-2.66455	20.00000	Linear
7	nitrobenzene	0.25000	0.24649	6608	0.010	-1.40268	20.00000	Linear
9	TETRYL	0.25000	0.22721	4448	0.010	-9.11523	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.24208	6108	0.010	-3.16996	20.00000	Linear
11	4-AM-DNT	0.25000	0.23950	2396	0.010	-4.20107	20.00000	Linear
12	2-AM-DNT	0.25000	0.24173	3156	0.010	-3.30936	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.24548	3728	0.010	-1.80648	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.24550	6892	0.010	-1.79867	20.00000	Linear
15	2-nitrotoluene	0.25000	0.24083	2576	0.010	-3.66848	20.00000	Linear
16	4-nitrotoluene	0.25000	0.25719	2172	0.010	2.87782	20.00000	Linear
17	3-nitrotoluene	0.25000	0.23847	2552	0.010	-4.61090	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22832	4876	0.010	-8.67025	20.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-30
Lab File ID : HLC10222.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/29/18 03:58
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.48598	4116	0.010	-2.80366	20.00000	Linear
4	RDX	0.50000	0.49148	3984	0.010	-1.70305	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.48249	10024	0.010	-3.50191	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.49542	11538	0.010	-0.91623	20.00000	Linear
7	nitrobenzene	0.50000	0.50102	6694	0.010	0.20479	20.00000	Linear
9	TETRYL	0.50000	0.46320	4416	0.010	-7.36019	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.49432	6162	0.010	-1.13645	20.00000	Linear
11	4-AM-DNT	0.50000	0.49748	2412	0.010	-0.50434	20.00000	Linear
12	2-AM-DNT	0.50000	0.50287	3226	0.010	0.57318	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.49963	3770	0.010	-0.07494	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.49912	6946	0.010	-0.17576	20.00000	Linear
15	2-nitrotoluene	0.50000	0.49785	2640	0.010	-0.43021	20.00000	Linear
16	4-nitrotoluene	0.50000	0.52845	2142	0.010	5.68982	20.00000	Linear
17	3-nitrotoluene	0.50000	0.48716	2550	0.010	-2.56797	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46573	4948	0.010	-6.85476	20.00000	Linear

*** = Compound out of QC criteria**

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ANALYTICAL SERVICES

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL2133
Project : Cornhusker Army Ammunition Plant **Column ID :** B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	DNB
Initial Calibration	WG225143-7	03/20/18	14:54	8.575	
Initial Calibration	WG225143-6	03/20/18	15:26	8.57	
Initial Calibration	WG225143-5	03/20/18	15:58	8.57	
Initial Calibration	WG225143-4	03/20/18	16:30	8.57	
Initial Calibration	WG225143-3	03/20/18	17:01	8.57	
Initial Calibration	WG225143-2	03/20/18	17:33	8.574	
Initial Calibration	WG225143-1	03/20/18	18:05	8.587	
Independent Source	WG225143-8	03/20/18	18:37		
Method Blank Sample	WG225027-1	03/20/18	19:09	8.572	
Laboratory Control S	WG225027-2	03/20/18	19:40	8.562	
Laboratory Control S	WG225027-5	03/20/18	20:12	8.559	
Method Blank Sample	WG225094-1	03/20/18	21:47	8.593	
Laboratory Control S	WG225094-2	03/20/18	22:19	8.594	
CHAAP-20B-EB-031518	SL2133-20	03/20/18	23:23	8.589	
Continuing Calibrati	WG225143-9	03/21/18	00:26	8.567	
Continuing Calibrati	WG225143-13	03/21/18	18:38	8.541	
Method Blank Sample	WG225028-1	03/21/18	19:10	8.544	
Laboratory Control S	WG225028-2	03/21/18	19:41	8.542	
Continuing Calibrati	WG225143-14	03/22/18	00:27	8.553	
CHAAP-20B-SB01-11	SL2133-1	03/22/18	07:06	8.568	
CHAAP-20B-SB01-4	SL2133-2	03/22/18	07:38	8.566	
CHAAP-20B-SB01-8	SL2133-3	03/22/18	08:10	8.549	
CHAAP-20B-SB02-4	SL2133-4	03/22/18	08:41	8.555	
Continuing Calibrati	WG225143-15	03/22/18	09:13	8.547	
Matrix Spike	WG225028-3	03/22/18	09:45	8.564	
Matrix Spike Duplica	WG225028-4	03/22/18	10:17	8.565	
CHAAP-20B-SB02-8	SL2133-5	03/22/18	10:48	8.569	
CHAAP-20B-SB03-4	SL2133-6	03/22/18	11:20	8.579	
CHAAP-20B-SB03-8	SL2133-7	03/22/18	11:52	8.578	
CHAAP-20B-SB04-8	SL2133-9	03/22/18	12:56	8.573	
CHAAP-20B-SB05-4	SL2133-10	03/22/18	13:27	8.569	
CHAAP-20B-SB05-8	SL2133-11	03/22/18	13:59	8.55	
CHAAP-20B-SB06-4	SL2133-12	03/22/18	14:31	8.56	
Continuing Calibrati	WG225143-16	03/22/18	16:22	8.54	
CHAAP-20B-SB06-8	SL2133-13	03/22/18	16:54	8.558	
CHAAP-20B-SS01	SL2133-14	03/22/18	17:25	8.563	

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL2133
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

CHAAP-20B-SS02	SL2133-15	03/22/18	17:57	8.561	
CHAAP-20B-SS03	SL2133-16	03/22/18	18:29	8.564	
CHAAP-20B-SS04	SL2133-17	03/22/18	19:01	8.565	
CHAAP-20B-SS05	SL2133-18	03/22/18	19:33	8.567	
CHAAP-20B-SS06	SL2133-19	03/22/18	20:04	8.563	
CHAAP-20B-SS102	SL2133-21	03/22/18	20:36	8.561	
CHAAP-20B-SS104	SL2133-22	03/22/18	21:08	8.567	
Continuing Calibrati	WG225143-17	03/22/18	21:40	8.553	
Continuing Calibrati	WG225143-19	03/23/18	09:19	8.567	
CHAAP-20B-SB02-8	SL2133-5DL	03/23/18	10:09	8.552	
CHAAP-20B-SS102	SL2133-21DL	03/23/18	13:04		
Continuing Calibrati	WG225143-20	03/23/18	13:44	8.523	
Continuing Calibrati	WG225143-24	03/27/18	08:57	8.621	
Method Blank Sample	WG225426-1	03/27/18	10:03	8.6	
Laboratory Control S	WG225426-2	03/27/18	10:35	8.604	
Continuing Calibrati	WG225143-25	03/27/18	12:10	8.606	
CHAAP-20B-SB04-4	SL2133-8RE	03/27/18	13:18	8.619	
Continuing Calibrati	WG225143-26	03/27/18	18:36	8.608	

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ANALYTICAL SERVICES

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL2133
Project : Cornhusker Army Ammunition Plant **Column ID :** B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG210620-15	08/01/17	09:37	13.49	
Initial Calibration	WG210620-14	08/01/17	10:27	13.48	
Initial Calibration	WG210620-13	08/01/17	11:16	13.48	
Initial Calibration	WG210620-12	08/01/17	12:05	13.47	
Initial Calibration	WG210620-11	08/01/17	12:54	13.47	
Initial Calibration	WG210620-10	08/01/17	13:44	13.47	
Initial Calibration	WG210620-9	08/01/17	14:33	13.46	
Independent Source	WG210620-16	08/01/17	17:01		
Continuing Calibrati	WG225143-21	03/23/18	16:02	13.50	
Method Blank Sample	WG225027-1C	03/23/18	16:52	13.52	
CHAAP-20B-SB01-11	SL2133-1C	03/23/18	17:41	13.53	
CHAAP-20B-SB01-4	SL2133-2C	03/23/18	18:30	13.50	
CHAAP-20B-SB01-8	SL2133-3C	03/23/18	19:19	13.51	
CHAAP-20B-SB02-4	SL2133-4C	03/23/18	20:08	13.52	
Continuing Calibrati	WG225143-22	03/24/18	01:03	13.53	
Continuing Calibrati	WG225143-28	03/28/18	10:07	13.30	
Method Blank Sample	WG225028-1C	03/28/18	11:28	13.27	
CHAAP-20B-SB02-8	SL2133-5C	03/28/18	12:15	13.28	
CHAAP-20B-SB03-4	SL2133-6C	03/28/18	13:02	13.29	
CHAAP-20B-SB03-8	SL2133-7C	03/28/18	13:49	13.28	
CHAAP-20B-SB04-8	SL2133-9C	03/28/18	15:24	13.35	
CHAAP-20B-SB05-4	SL2133-10C	03/28/18	16:11	13.33	
CHAAP-20B-SB05-8	SL2133-11C	03/28/18	16:58	13.34	
CHAAP-20B-SB06-4	SL2133-12C	03/28/18	17:45	13.33	
CHAAP-20B-SB06-8	SL2133-13C	03/28/18	18:32	13.33	
Continuing Calibrati	WG225143-29	03/28/18	19:20	13.31	
CHAAP-20B-SS01	SL2133-14C	03/28/18	20:07	13.32	
CHAAP-20B-SS02	SL2133-15C	03/28/18	20:54	13.32	
CHAAP-20B-SS03	SL2133-16C	03/28/18	21:41	13.31	
CHAAP-20B-SS04	SL2133-17C	03/28/18	22:28	13.33	
CHAAP-20B-SS05	SL2133-18C	03/28/18	23:15	13.33	
CHAAP-20B-SS06	SL2133-19C	03/29/18	00:02	13.32	
CHAAP-20B-SS102	SL2133-21C	03/29/18	00:50	13.32	
CHAAP-20B-SS104	SL2133-22C	03/29/18	01:37	13.33	
Method Blank Sample	WG225426-1C	03/29/18	02:24	13.32	
CHAAP-20B-SB04-4	SL2133-8REC	03/29/18	03:11	13.33	

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Katahdin
ANALYTICAL SERVICES

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL2133
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Continuing Calibrati	WG225143-30	03/29/18	03:58	13.32	

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB01-11

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.3 **Lab Sample ID:** SL2133-001

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15400			MS	5	7.4	0.37	3.0
7440-36-0	ANTIMONY, TOTAL	0.13			MS	5	0.074	0.015	0.037
7440-38-2	ARSENIC, TOTAL	6.10			MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	292			MS	5	0.15	0.027	0.074
7440-41-7	BERYLLIUM, TOTAL	0.881			MS	5	0.074	0.0030	0.015
7440-43-9	CADMIUM, TOTAL	0.169			MS	5	0.074	0.0056	0.015
7440-70-2	CALCIUM, TOTAL	8190			MS	5	7.4	2.8	6.0
7440-47-3	CHROMIUM, TOTAL	17.6			MS	5	0.37	0.036	0.30
7440-48-4	COBALT, TOTAL	4.93			MS	5	0.074	0.0041	0.022
7440-50-8	COPPER, TOTAL	14.4			MS	5	0.22	0.052	0.15
7439-89-6	IRON, TOTAL	18100			MS	5	7.4	1.8	4.5
7439-92-1	LEAD, TOTAL	13.3			MS	5	0.074	0.0052	0.037
7439-95-4	MAGNESIUM, TOTAL	6360			MS	5	7.4	1.0	6.0
7439-96-5	MANGANESE, TOTAL	339			MS	5	0.15	0.031	0.074
7439-97-6	MERCURY, TOTAL	0.019	J		CV	1	0.033	0.0051	0.017
7440-02-0	NICKEL, TOTAL	15.2			MS	5	0.15	0.020	0.089
7440-09-7	POTASSIUM, TOTAL	3300			MS	5	74	3.4	30
7782-49-2	SELENIUM, TOTAL	0.456			MS	5	0.37	0.029	0.22
7440-22-4	SILVER, TOTAL	0.0802			MS	5	0.074	0.0048	0.030
7440-23-5	SODIUM, TOTAL	443			MS	5	74	1.9	30
7440-28-0	THALLIUM, TOTAL	0.278			MS	5	0.074	0.0071	0.030
7440-62-2	VANADIUM, TOTAL	31.2			MS	5	0.37	0.082	0.30
7440-66-6	ZINC, TOTAL	52.2			MS	5	0.74	0.097	0.60

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB01-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.5 **Lab Sample ID:** SL2133-002

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	18300			MS	5	8.9	0.45	3.6
7440-36-0	ANTIMONY, TOTAL	0.16			MS	5	0.089	0.018	0.045
7440-38-2	ARSENIC, TOTAL	1.59			MS	5	0.45	0.13	0.36
7440-39-3	BARIUM, TOTAL	286			MS	5	0.18	0.033	0.089
7440-41-7	BERYLLIUM, TOTAL	0.892			MS	5	0.089	0.0036	0.018
7440-43-9	CADMIUM, TOTAL	0.027	J		MS	5	0.089	0.0067	0.018
7440-70-2	CALCIUM, TOTAL	11500			MS	5	8.9	3.4	7.1
7440-47-3	CHROMIUM, TOTAL	17.1			MS	5	0.45	0.044	0.36
7440-48-4	COBALT, TOTAL	6.30			MS	5	0.089	0.0049	0.027
7440-50-8	COPPER, TOTAL	12.2			MS	5	0.27	0.062	0.18
7439-89-6	IRON, TOTAL	14800			MS	5	8.9	2.1	5.4
7439-92-1	LEAD, TOTAL	11.6			MS	5	0.089	0.0062	0.045
7439-95-4	MAGNESIUM, TOTAL	7240			MS	5	8.9	1.2	7.1
7439-96-5	MANGANESE, TOTAL	234			MS	5	0.18	0.037	0.089
7439-97-6	MERCURY, TOTAL	0.021	J		CV	1	0.034	0.0053	0.018
7440-02-0	NICKEL, TOTAL	13.6			MS	5	0.18	0.024	0.11
7440-09-7	POTASSIUM, TOTAL	4250			MS	5	89	4.1	36
7782-49-2	SELENIUM, TOTAL	0.396	J		MS	5	0.45	0.035	0.27
7440-22-4	SILVER, TOTAL	0.0783	J		MS	5	0.089	0.0058	0.036
7440-23-5	SODIUM, TOTAL	810			MS	5	89	2.3	36
7440-28-0	THALLIUM, TOTAL	0.318			MS	5	0.089	0.0085	0.036
7440-62-2	VANADIUM, TOTAL	32.4			MS	5	0.45	0.098	0.36
7440-66-6	ZINC, TOTAL	46.3			MS	5	0.89	0.12	0.71

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB01-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.0 **Lab Sample ID:** SL2133-003

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	16400			MS	5	9.6	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.13			MS	5	0.096	0.019	0.048
7440-38-2	ARSENIC, TOTAL	0.76			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	309			MS	5	0.19	0.035	0.096
7440-41-7	BERYLLIUM, TOTAL	0.871			MS	5	0.096	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.019	U		MS	5	0.096	0.0072	0.019
7440-70-2	CALCIUM, TOTAL	8720			MS	5	9.6	3.6	7.6
7440-47-3	CHROMIUM, TOTAL	15.7			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	3.95			MS	5	0.096	0.0053	0.029
7440-50-8	COPPER, TOTAL	12.0			MS	5	0.29	0.067	0.19
7439-89-6	IRON, TOTAL	13200			MS	5	9.6	2.3	5.7
7439-92-1	LEAD, TOTAL	10.5			MS	5	0.096	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	7460			MS	5	9.6	1.3	7.6
7439-96-5	MANGANESE, TOTAL	84.5			MS	5	0.19	0.040	0.096
7439-97-6	MERCURY, TOTAL	0.022	J		CV	1	0.039	0.0060	0.020
7440-02-0	NICKEL, TOTAL	11.2			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	3650			MS	5	96	4.4	38
7782-49-2	SELENIUM, TOTAL	0.403	J		MS	5	0.48	0.037	0.29
7440-22-4	SILVER, TOTAL	0.0802	J		MS	5	0.096	0.0062	0.038
7440-23-5	SODIUM, TOTAL	545			MS	5	96	2.4	38
7440-28-0	THALLIUM, TOTAL	0.303			MS	5	0.096	0.0091	0.038
7440-62-2	VANADIUM, TOTAL	28.4			MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	42.8			MS	5	0.96	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB02-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 80.7 **Lab Sample ID:** SL2133-004

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15300			MS	5	7.9	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.167			MS	5	0.079	0.016	0.040
7440-38-2	ARSENIC, TOTAL	2.20			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	243			MS	5	0.16	0.029	0.079
7440-41-7	BERYLLIUM, TOTAL	0.727			MS	5	0.079	0.0032	0.016
7440-43-9	CADMIUM, TOTAL	0.0808			MS	5	0.079	0.0060	0.016
7440-70-2	CALCIUM, TOTAL	96100		D	MS	10	16	6.0	13
7440-47-3	CHROMIUM, TOTAL	13.6			MS	5	0.40	0.039	0.32
7440-48-4	COBALT, TOTAL	5.22			MS	5	0.079	0.0044	0.024
7440-50-8	COPPER, TOTAL	8.54			MS	5	0.24	0.056	0.16
7439-89-6	IRON, TOTAL	12100			MS	5	7.9	1.9	4.8
7439-92-1	LEAD, TOTAL	9.65			MS	5	0.079	0.0056	0.040
7439-95-4	MAGNESIUM, TOTAL	9200			MS	5	7.9	1.1	6.4
7439-96-5	MANGANESE, TOTAL	240			MS	5	0.16	0.033	0.079
7439-97-6	MERCURY, TOTAL	0.023	J		CV	1	0.033	0.0051	0.017
7440-02-0	NICKEL, TOTAL	10.3			MS	5	0.16	0.021	0.095
7440-09-7	POTASSIUM, TOTAL	3520			MS	5	79	3.6	32
7782-49-2	SELENIUM, TOTAL	0.436			MS	5	0.40	0.031	0.24
7440-22-4	SILVER, TOTAL	0.0747	J		MS	5	0.079	0.0052	0.032
7440-23-5	SODIUM, TOTAL	195			MS	5	79	2.0	32
7440-28-0	THALLIUM, TOTAL	0.282			MS	5	0.079	0.0075	0.032
7440-62-2	VANADIUM, TOTAL	29.2			MS	5	0.40	0.087	0.32
7440-66-6	ZINC, TOTAL	33.3			MS	5	0.79	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB02-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 74.6 **Lab Sample ID:** SL2133-005

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16000			MS	5	8.3	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.356			MS	5	0.083	0.017	0.042
7440-38-2	ARSENIC, TOTAL	47.4			MS	5	0.42	0.12	0.33
7440-39-3	BARIUM, TOTAL	388			MS	5	0.17	0.030	0.083
7440-41-7	BERYLLIUM, TOTAL	1.13			MS	5	0.083	0.0034	0.017
7440-43-9	CADMIUM, TOTAL	0.231			MS	5	0.083	0.0062	0.017
7440-70-2	CALCIUM, TOTAL	31900			MS	5	8.3	3.2	6.7
7440-47-3	CHROMIUM, TOTAL	17.9			MS	5	0.42	0.041	0.33
7440-48-4	COBALT, TOTAL	8.14			MS	5	0.083	0.0046	0.025
7440-50-8	COPPER, TOTAL	25.7			MS	5	0.25	0.058	0.17
7439-89-6	IRON, TOTAL	36300			MS	5	8.3	2.0	5.0
7439-92-1	LEAD, TOTAL	19.9			MS	5	0.083	0.0058	0.042
7439-95-4	MAGNESIUM, TOTAL	7540			MS	5	8.3	1.1	6.7
7439-96-5	MANGANESE, TOTAL	609			MS	5	0.17	0.035	0.083
7439-97-6	MERCURY, TOTAL	0.019	J		CV	1	0.039	0.0061	0.020
7440-02-0	NICKEL, TOTAL	14.6			MS	5	0.17	0.022	0.10
7440-09-7	POTASSIUM, TOTAL	3830			MS	5	83	3.8	33
7782-49-2	SELENIUM, TOTAL	0.656			MS	5	0.42	0.032	0.25
7440-22-4	SILVER, TOTAL	0.0872			MS	5	0.083	0.0054	0.033
7440-23-5	SODIUM, TOTAL	165			MS	5	83	2.1	33
7440-28-0	THALLIUM, TOTAL	0.328			MS	5	0.083	0.0079	0.033
7440-62-2	VANADIUM, TOTAL	76.9			MS	5	0.42	0.092	0.33
7440-66-6	ZINC, TOTAL	45.5			MS	5	0.83	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB03-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.0 **Lab Sample ID:** SL2133-006

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	18400			MS	5	11	0.55	4.4
7440-36-0	ANTIMONY, TOTAL	0.16			MS	5	0.11	0.022	0.054
7440-38-2	ARSENIC, TOTAL	5.22			MS	5	0.54	0.16	0.44
7440-39-3	BARIUM, TOTAL	232			MS	5	0.22	0.040	0.11
7440-41-7	BERYLLIUM, TOTAL	0.974			MS	5	0.11	0.0044	0.022
7440-43-9	CADMIUM, TOTAL	0.022	U		MS	5	0.11	0.0082	0.022
7440-70-2	CALCIUM, TOTAL	11400			MS	5	11	4.1	8.7
7440-47-3	CHROMIUM, TOTAL	17.1			MS	5	0.54	0.053	0.44
7440-48-4	COBALT, TOTAL	5.26			MS	5	0.11	0.0060	0.033
7440-50-8	COPPER, TOTAL	13.5			MS	5	0.33	0.076	0.22
7439-89-6	IRON, TOTAL	18500			MS	5	11	2.6	6.5
7439-92-1	LEAD, TOTAL	14.0			MS	5	0.11	0.0076	0.054
7439-95-4	MAGNESIUM, TOTAL	7670			MS	5	11	1.5	8.7
7439-96-5	MANGANESE, TOTAL	176			MS	5	0.22	0.046	0.11
7439-97-6	MERCURY, TOTAL	0.022	J		CV	1	0.040	0.0062	0.020
7440-02-0	NICKEL, TOTAL	11.4			MS	5	0.22	0.029	0.13
7440-09-7	POTASSIUM, TOTAL	4370			MS	5	110	5.0	44
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.54	0.043	0.33
7440-22-4	SILVER, TOTAL	0.0764	J		MS	5	0.11	0.0071	0.044
7440-23-5	SODIUM, TOTAL	804			MS	5	110	2.8	44
7440-28-0	THALLIUM, TOTAL	0.337			MS	5	0.11	0.010	0.044
7440-62-2	VANADIUM, TOTAL	35.2			MS	5	0.54	0.12	0.44
7440-66-6	ZINC, TOTAL	48.7			MS	5	1.1	0.14	0.87

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB03-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.1 **Lab Sample ID:** SL2133-007

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15900			MS	5	9.5	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.14			MS	5	0.095	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.82			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	319			MS	5	0.19	0.035	0.095
7440-41-7	BERYLLIUM, TOTAL	0.848			MS	5	0.095	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.036	J		MS	5	0.095	0.0071	0.019
7440-70-2	CALCIUM, TOTAL	14500			MS	5	9.5	3.6	7.6
7440-47-3	CHROMIUM, TOTAL	15.1			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	6.38			MS	5	0.095	0.0052	0.028
7440-50-8	COPPER, TOTAL	12.1			MS	5	0.28	0.067	0.19
7439-89-6	IRON, TOTAL	14600			MS	5	9.5	2.3	5.7
7439-92-1	LEAD, TOTAL	12.9			MS	5	0.095	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	6970			MS	5	9.5	1.3	7.6
7439-96-5	MANGANESE, TOTAL	222			MS	5	0.19	0.040	0.095
7439-97-6	MERCURY, TOTAL	0.021	J		CV	1	0.036	0.0056	0.018
7440-02-0	NICKEL, TOTAL	11.8			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	3480			MS	5	95	4.3	38
7782-49-2	SELENIUM, TOTAL	0.419	J		MS	5	0.48	0.037	0.28
7440-22-4	SILVER, TOTAL	0.0770	J		MS	5	0.095	0.0062	0.038
7440-23-5	SODIUM, TOTAL	547			MS	5	95	2.4	38
7440-28-0	THALLIUM, TOTAL	0.304			MS	5	0.095	0.0090	0.038
7440-62-2	VANADIUM, TOTAL	28.0			MS	5	0.48	0.10	0.38
7440-66-6	ZINC, TOTAL	46.0			MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB04-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.4 **Lab Sample ID:** SL2133-008

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	27800			MS	5	6.3	0.31	2.5
7440-36-0	ANTIMONY, TOTAL	0.379			MS	5	0.063	0.013	0.031
7440-38-2	ARSENIC, TOTAL	11.6			MS	5	0.31	0.094	0.25
7440-39-3	BARIUM, TOTAL	413			MS	5	0.12	0.023	0.063
7440-41-7	BERYLLIUM, TOTAL	1.24			MS	5	0.063	0.0025	0.012
7440-43-9	CADMIUM, TOTAL	0.012	U		MS	5	0.063	0.0047	0.012
7440-70-2	CALCIUM, TOTAL	78600		D	MS	10	12	4.8	10
7440-47-3	CHROMIUM, TOTAL	24.8			MS	5	0.31	0.031	0.25
7440-48-4	COBALT, TOTAL	6.80			MS	5	0.063	0.0034	0.019
7440-50-8	COPPER, TOTAL	15.4			MS	5	0.19	0.044	0.12
7439-89-6	IRON, TOTAL	22200			MS	5	6.3	1.5	3.8
7439-92-1	LEAD, TOTAL	16.3			MS	5	0.063	0.0044	0.031
7439-95-4	MAGNESIUM, TOTAL	11800			MS	5	6.3	0.85	5.0
7439-96-5	MANGANESE, TOTAL	148			MS	5	0.12	0.026	0.063
7439-97-6	MERCURY, TOTAL	0.023	J		CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	22.9			MS	5	0.12	0.017	0.075
7440-09-7	POTASSIUM, TOTAL	7430			MS	5	63	2.9	25
7782-49-2	SELENIUM, TOTAL	0.527			MS	5	0.31	0.024	0.19
7440-22-4	SILVER, TOTAL	0.126			MS	5	0.063	0.0041	0.025
7440-23-5	SODIUM, TOTAL	1060			MS	5	63	1.6	25
7440-28-0	THALLIUM, TOTAL	0.461			MS	5	0.063	0.0060	0.025
7440-62-2	VANADIUM, TOTAL	59.6			MS	5	0.31	0.069	0.25
7440-66-6	ZINC, TOTAL	60.4			MS	5	0.63	0.081	0.50

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB04-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.7 **Lab Sample ID:** SL2133-009

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	19000			MS	5	7.2	0.36	2.9
7440-36-0	ANTIMONY, TOTAL	0.198			MS	5	0.072	0.014	0.036
7440-38-2	ARSENIC, TOTAL	2.15			MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	233			MS	5	0.14	0.026	0.072
7440-41-7	BERYLLIUM, TOTAL	0.894			MS	5	0.072	0.0029	0.014
7440-43-9	CADMIUM, TOTAL	0.125			MS	5	0.072	0.0054	0.014
7440-70-2	CALCIUM, TOTAL	8630			MS	5	7.2	2.7	5.7
7440-47-3	CHROMIUM, TOTAL	19.2			MS	5	0.36	0.035	0.29
7440-48-4	COBALT, TOTAL	11.6			MS	5	0.072	0.0039	0.022
7440-50-8	COPPER, TOTAL	14.1			MS	5	0.22	0.050	0.14
7439-89-6	IRON, TOTAL	15500			MS	5	7.2	1.7	4.3
7439-92-1	LEAD, TOTAL	12.7			MS	5	0.072	0.0050	0.036
7439-95-4	MAGNESIUM, TOTAL	8130			MS	5	7.2	0.97	5.7
7439-96-5	MANGANESE, TOTAL	314			MS	5	0.14	0.030	0.072
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	16.3			MS	5	0.14	0.019	0.086
7440-09-7	POTASSIUM, TOTAL	3960			MS	5	72	3.3	29
7782-49-2	SELENIUM, TOTAL	0.522			MS	5	0.36	0.028	0.22
7440-22-4	SILVER, TOTAL	0.0980			MS	5	0.072	0.0047	0.029
7440-23-5	SODIUM, TOTAL	706			MS	5	72	1.8	29
7440-28-0	THALLIUM, TOTAL	0.325			MS	5	0.072	0.0068	0.029
7440-62-2	VANADIUM, TOTAL	35.5			MS	5	0.36	0.079	0.29
7440-66-6	ZINC, TOTAL	51.6			MS	5	0.72	0.093	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB05-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.5 **Lab Sample ID:** SL2133-010

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	17900			MS	5	7.0	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.276			MS	5	0.070	0.014	0.035
7440-38-2	ARSENIC, TOTAL	5.44			MS	5	0.35	0.11	0.28
7440-39-3	BARIUM, TOTAL	232			MS	5	0.14	0.026	0.070
7440-41-7	BERYLLIUM, TOTAL	0.951			MS	5	0.070	0.0029	0.014
7440-43-9	CADMIUM, TOTAL	0.0645	J		MS	5	0.070	0.0053	0.014
7440-70-2	CALCIUM, TOTAL	8810			MS	5	7.0	2.7	5.6
7440-47-3	CHROMIUM, TOTAL	16.0			MS	5	0.35	0.035	0.28
7440-48-4	COBALT, TOTAL	8.74			MS	5	0.070	0.0039	0.021
7440-50-8	COPPER, TOTAL	12.8			MS	5	0.21	0.049	0.14
7439-89-6	IRON, TOTAL	16800			MS	5	7.0	1.7	4.2
7439-92-1	LEAD, TOTAL	16.7			MS	5	0.070	0.0049	0.035
7439-95-4	MAGNESIUM, TOTAL	7760			MS	5	7.0	0.95	5.6
7439-96-5	MANGANESE, TOTAL	455			MS	5	0.14	0.030	0.070
7439-97-6	MERCURY, TOTAL	0.026	J		CV	1	0.042	0.0064	0.021
7440-02-0	NICKEL, TOTAL	17.9			MS	5	0.14	0.019	0.084
7440-09-7	POTASSIUM, TOTAL	4230			MS	5	70	3.2	28
7782-49-2	SELENIUM, TOTAL	0.432			MS	5	0.35	0.027	0.21
7440-22-4	SILVER, TOTAL	0.0782			MS	5	0.070	0.0046	0.028
7440-23-5	SODIUM, TOTAL	1180			MS	5	70	1.8	28
7440-28-0	THALLIUM, TOTAL	0.356			MS	5	0.070	0.0067	0.028
7440-62-2	VANADIUM, TOTAL	34.0			MS	5	0.35	0.078	0.28
7440-66-6	ZINC, TOTAL	44.4			MS	5	0.70	0.092	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB05-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.2 **Lab Sample ID:** SL2133-011

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15200			MS	5	7.8	0.39	3.1
7440-36-0	ANTIMONY, TOTAL	0.181			MS	5	0.078	0.016	0.039
7440-38-2	ARSENIC, TOTAL	1.98			MS	5	0.39	0.12	0.31
7440-39-3	BARIUM, TOTAL	284			MS	5	0.16	0.028	0.078
7440-41-7	BERYLLIUM, TOTAL	0.852			MS	5	0.078	0.0032	0.016
7440-43-9	CADMIUM, TOTAL	0.166			MS	5	0.078	0.0059	0.016
7440-70-2	CALCIUM, TOTAL	11100			MS	5	7.8	3.0	6.2
7440-47-3	CHROMIUM, TOTAL	14.5			MS	5	0.39	0.038	0.31
7440-48-4	COBALT, TOTAL	9.79			MS	5	0.078	0.0043	0.023
7440-50-8	COPPER, TOTAL	12.1			MS	5	0.23	0.055	0.16
7439-89-6	IRON, TOTAL	15200			MS	5	7.8	1.9	4.7
7439-92-1	LEAD, TOTAL	13.6			MS	5	0.078	0.0055	0.039
7439-95-4	MAGNESIUM, TOTAL	7780			MS	5	7.8	1.1	6.2
7439-96-5	MANGANESE, TOTAL	361			MS	5	0.16	0.033	0.078
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	18.6			MS	5	0.16	0.021	0.094
7440-09-7	POTASSIUM, TOTAL	3520			MS	5	78	3.6	31
7782-49-2	SELENIUM, TOTAL	0.434			MS	5	0.39	0.030	0.23
7440-22-4	SILVER, TOTAL	0.0712	J		MS	5	0.078	0.0051	0.031
7440-23-5	SODIUM, TOTAL	714			MS	5	78	2.0	31
7440-28-0	THALLIUM, TOTAL	0.315			MS	5	0.078	0.0074	0.031
7440-62-2	VANADIUM, TOTAL	27.8			MS	5	0.39	0.086	0.31
7440-66-6	ZINC, TOTAL	41.2			MS	5	0.78	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB06-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.1 **Lab Sample ID:** SL2133-012

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	22300			MS	5	6.3	0.31	2.5
7440-36-0	ANTIMONY, TOTAL	0.272			MS	5	0.063	0.013	0.031
7440-38-2	ARSENIC, TOTAL	3.86			MS	5	0.31	0.094	0.25
7440-39-3	BARIUM, TOTAL	208			MS	5	0.12	0.023	0.063
7440-41-7	BERYLLIUM, TOTAL	1.12			MS	5	0.063	0.0025	0.012
7440-43-9	CADMIUM, TOTAL	0.0071	J		MS	5	0.063	0.0047	0.012
7440-70-2	CALCIUM, TOTAL	19900			MS	5	6.3	2.4	5.0
7440-47-3	CHROMIUM, TOTAL	21.9			MS	5	0.31	0.031	0.25
7440-48-4	COBALT, TOTAL	8.50			MS	5	0.063	0.0035	0.019
7440-50-8	COPPER, TOTAL	14.9			MS	5	0.19	0.044	0.12
7439-89-6	IRON, TOTAL	19900			MS	5	6.3	1.5	3.8
7439-92-1	LEAD, TOTAL	13.2			MS	5	0.063	0.0044	0.031
7439-95-4	MAGNESIUM, TOTAL	7860			MS	5	6.3	0.85	5.0
7439-96-5	MANGANESE, TOTAL	308			MS	5	0.12	0.026	0.063
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	24.8			MS	5	0.12	0.017	0.075
7440-09-7	POTASSIUM, TOTAL	5420			MS	5	63	2.9	25
7782-49-2	SELENIUM, TOTAL	0.491			MS	5	0.31	0.025	0.19
7440-22-4	SILVER, TOTAL	0.0960			MS	5	0.063	0.0041	0.025
7440-23-5	SODIUM, TOTAL	202			MS	5	63	1.6	25
7440-28-0	THALLIUM, TOTAL	0.377			MS	5	0.063	0.0060	0.025
7440-62-2	VANADIUM, TOTAL	42.4			MS	5	0.31	0.069	0.25
7440-66-6	ZINC, TOTAL	58.9			MS	5	0.63	0.082	0.50

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB06-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 75.2 **Lab Sample ID:** SL2133-013

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	18300			MS	5	8.6	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.183			MS	5	0.086	0.017	0.043
7440-38-2	ARSENIC, TOTAL	2.56			MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	282			MS	5	0.17	0.031	0.086
7440-41-7	BERYLLIUM, TOTAL	0.922			MS	5	0.086	0.0035	0.017
7440-43-9	CADMIUM, TOTAL	0.017	U		MS	5	0.086	0.0064	0.017
7440-70-2	CALCIUM, TOTAL	18100			MS	5	8.6	3.3	6.9
7440-47-3	CHROMIUM, TOTAL	18.6			MS	5	0.43	0.042	0.34
7440-48-4	COBALT, TOTAL	4.71			MS	5	0.086	0.0047	0.026
7440-50-8	COPPER, TOTAL	13.8			MS	5	0.26	0.060	0.17
7439-89-6	IRON, TOTAL	16400			MS	5	8.6	2.1	5.1
7439-92-1	LEAD, TOTAL	12.4			MS	5	0.086	0.0060	0.043
7439-95-4	MAGNESIUM, TOTAL	8080			MS	5	8.6	1.2	6.9
7439-96-5	MANGANESE, TOTAL	165			MS	5	0.17	0.036	0.086
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	12.1			MS	5	0.17	0.023	0.10
7440-09-7	POTASSIUM, TOTAL	4150			MS	5	86	3.9	34
7782-49-2	SELENIUM, TOTAL	0.432			MS	5	0.43	0.033	0.26
7440-22-4	SILVER, TOTAL	0.0978			MS	5	0.086	0.0056	0.034
7440-23-5	SODIUM, TOTAL	171			MS	5	86	2.2	34
7440-28-0	THALLIUM, TOTAL	0.321			MS	5	0.086	0.0081	0.034
7440-62-2	VANADIUM, TOTAL	34.6			MS	5	0.43	0.094	0.34
7440-66-6	ZINC, TOTAL	48.9			MS	5	0.86	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS01

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 84.6 **Lab Sample ID:** SL2133-014

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	14200			MS	5	8.6	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.16			MS	5	0.086	0.017	0.043
7440-38-2	ARSENIC, TOTAL	2.88			MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	158			MS	5	0.17	0.031	0.086
7440-41-7	BERYLLIUM, TOTAL	0.703			MS	5	0.086	0.0035	0.017
7440-43-9	CADMIUM, TOTAL	0.0666	J		MS	5	0.086	0.0064	0.017
7440-70-2	CALCIUM, TOTAL	2740			MS	5	8.6	3.3	6.8
7440-47-3	CHROMIUM, TOTAL	11.8			MS	5	0.43	0.042	0.34
7440-48-4	COBALT, TOTAL	4.57			MS	5	0.086	0.0047	0.026
7440-50-8	COPPER, TOTAL	8.23			MS	5	0.26	0.060	0.17
7439-89-6	IRON, TOTAL	11700			MS	5	8.6	2.1	5.1
7439-92-1	LEAD, TOTAL	9.94			MS	5	0.086	0.0060	0.043
7439-95-4	MAGNESIUM, TOTAL	3590			MS	5	8.6	1.2	6.8
7439-96-5	MANGANESE, TOTAL	206			MS	5	0.17	0.036	0.086
7439-97-6	MERCURY, TOTAL	0.010	J		CV	1	0.037	0.0057	0.019
7440-02-0	NICKEL, TOTAL	9.78			MS	5	0.17	0.023	0.10
7440-09-7	POTASSIUM, TOTAL	3680			MS	5	86	3.9	34
7782-49-2	SELENIUM, TOTAL	0.406	J		MS	5	0.43	0.033	0.26
7440-22-4	SILVER, TOTAL	0.0695	J		MS	5	0.086	0.0056	0.034
7440-23-5	SODIUM, TOTAL	91.2			MS	5	86	2.2	34
7440-28-0	THALLIUM, TOTAL	0.231			MS	5	0.086	0.0081	0.034
7440-62-2	VANADIUM, TOTAL	23.6			MS	5	0.43	0.094	0.34
7440-66-6	ZINC, TOTAL	32.7			MS	5	0.86	0.11	0.68

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS02

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 80.5 **Lab Sample ID:** SL2133-015

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12800			MS	5	8.7	0.43	3.5
7440-36-0	ANTIMONY, TOTAL	0.243			MS	5	0.087	0.017	0.043
7440-38-2	ARSENIC, TOTAL	2.43			MS	5	0.43	0.13	0.35
7440-39-3	BARIUM, TOTAL	169			MS	5	0.17	0.032	0.087
7440-41-7	BERYLLIUM, TOTAL	0.671			MS	5	0.087	0.0035	0.017
7440-43-9	CADMIUM, TOTAL	2.93			MS	5	0.087	0.0065	0.017
7440-70-2	CALCIUM, TOTAL	3930			MS	5	8.7	3.3	6.9
7440-47-3	CHROMIUM, TOTAL	12.6			MS	5	0.43	0.043	0.35
7440-48-4	COBALT, TOTAL	4.75			MS	5	0.087	0.0048	0.026
7440-50-8	COPPER, TOTAL	23.0			MS	5	0.26	0.061	0.17
7439-89-6	IRON, TOTAL	10700			MS	5	8.7	2.1	5.2
7439-92-1	LEAD, TOTAL	21.2			MS	5	0.087	0.0061	0.043
7439-95-4	MAGNESIUM, TOTAL	3590			MS	5	8.7	1.2	6.9
7439-96-5	MANGANESE, TOTAL	218			MS	5	0.17	0.036	0.087
7439-97-6	MERCURY, TOTAL	0.165			CV	1	0.031	0.0048	0.016
7440-02-0	NICKEL, TOTAL	10.2			MS	5	0.17	0.023	0.10
7440-09-7	POTASSIUM, TOTAL	4250			MS	5	87	4.0	35
7782-49-2	SELENIUM, TOTAL	0.447			MS	5	0.43	0.034	0.26
7440-22-4	SILVER, TOTAL	0.221			MS	5	0.087	0.0056	0.035
7440-23-5	SODIUM, TOTAL	89.9			MS	5	87	2.2	35
7440-28-0	THALLIUM, TOTAL	0.228			MS	5	0.087	0.0083	0.035
7440-62-2	VANADIUM, TOTAL	20.3			MS	5	0.43	0.096	0.35
7440-66-6	ZINC, TOTAL	56.3			MS	5	0.87	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS03

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.2 **Lab Sample ID:** SL2133-016

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	17000			MS	5	9.4	0.47	3.8
7440-36-0	ANTIMONY, TOTAL	0.494			MS	5	0.094	0.019	0.047
7440-38-2	ARSENIC, TOTAL	2.93			MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	202			MS	5	0.19	0.034	0.094
7440-41-7	BERYLLIUM, TOTAL	0.803			MS	5	0.094	0.0038	0.019
7440-43-9	CADMIUM, TOTAL	9.59			MS	5	0.094	0.0070	0.019
7440-70-2	CALCIUM, TOTAL	3290			MS	5	9.4	3.6	7.5
7440-47-3	CHROMIUM, TOTAL	18.2			MS	5	0.47	0.046	0.38
7440-48-4	COBALT, TOTAL	6.64			MS	5	0.094	0.0052	0.028
7440-50-8	COPPER, TOTAL	34.0			MS	5	0.28	0.066	0.19
7439-89-6	IRON, TOTAL	13000			MS	5	9.4	2.3	5.6
7439-92-1	LEAD, TOTAL	51.6			MS	5	0.094	0.0066	0.047
7439-95-4	MAGNESIUM, TOTAL	4920			MS	5	9.4	1.3	7.5
7439-96-5	MANGANESE, TOTAL	274			MS	5	0.19	0.039	0.094
7439-97-6	MERCURY, TOTAL	0.487			CV	1	0.038	0.0059	0.019
7440-02-0	NICKEL, TOTAL	13.8			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	5920			MS	5	94	4.3	38
7782-49-2	SELENIUM, TOTAL	0.534			MS	5	0.47	0.037	0.28
7440-22-4	SILVER, TOTAL	0.456			MS	5	0.094	0.0061	0.038
7440-23-5	SODIUM, TOTAL	198			MS	5	94	2.4	38
7440-28-0	THALLIUM, TOTAL	0.259			MS	5	0.094	0.0089	0.038
7440-62-2	VANADIUM, TOTAL	25.7			MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	87.4			MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS04

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.3 **Lab Sample ID:** SL2133-017

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12900			MS	5	10	0.52	4.2
7440-36-0	ANTIMONY, TOTAL	0.19			MS	5	0.10	0.021	0.052
7440-38-2	ARSENIC, TOTAL	2.20			MS	5	0.52	0.16	0.42
7440-39-3	BARIUM, TOTAL	137			MS	5	0.21	0.038	0.10
7440-41-7	BERYLLIUM, TOTAL	0.588			MS	5	0.10	0.0042	0.021
7440-43-9	CADMIUM, TOTAL	0.358			MS	5	0.10	0.0079	0.021
7440-70-2	CALCIUM, TOTAL	2400			MS	5	10	4.0	8.4
7440-47-3	CHROMIUM, TOTAL	11.2			MS	5	0.52	0.051	0.42
7440-48-4	COBALT, TOTAL	4.65			MS	5	0.10	0.0058	0.031
7440-50-8	COPPER, TOTAL	16.7			MS	5	0.31	0.073	0.21
7439-89-6	IRON, TOTAL	9750			MS	5	10	2.5	6.3
7439-92-1	LEAD, TOTAL	13.3			MS	5	0.10	0.0073	0.052
7439-95-4	MAGNESIUM, TOTAL	3560			MS	5	10	1.4	8.4
7439-96-5	MANGANESE, TOTAL	208			MS	5	0.21	0.044	0.10
7439-97-6	MERCURY, TOTAL	0.051			CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	8.79			MS	5	0.21	0.028	0.12
7440-09-7	POTASSIUM, TOTAL	4440			MS	5	100	4.8	42
7782-49-2	SELENIUM, TOTAL	0.502	J		MS	5	0.52	0.041	0.31
7440-22-4	SILVER, TOTAL	0.244			MS	5	0.10	0.0068	0.042
7440-23-5	SODIUM, TOTAL	108			MS	5	100	2.7	42
7440-28-0	THALLIUM, TOTAL	0.202			MS	5	0.10	0.0099	0.042
7440-62-2	VANADIUM, TOTAL	20.9			MS	5	0.52	0.12	0.42
7440-66-6	ZINC, TOTAL	39.6			MS	5	1.0	0.14	0.84

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS05

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.0 **Lab Sample ID:** SL2133-018

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14100			MS	5	9.6	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.203			MS	5	0.096	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.47			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	154			MS	5	0.19	0.035	0.096
7440-41-7	BERYLLIUM, TOTAL	0.688			MS	5	0.096	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.158			MS	5	0.096	0.0072	0.019
7440-70-2	CALCIUM, TOTAL	2540			MS	5	9.6	3.7	7.7
7440-47-3	CHROMIUM, TOTAL	12.2			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	5.05			MS	5	0.096	0.0053	0.029
7440-50-8	COPPER, TOTAL	9.96			MS	5	0.29	0.067	0.19
7439-89-6	IRON, TOTAL	11100			MS	5	9.6	2.3	5.8
7439-92-1	LEAD, TOTAL	13.0			MS	5	0.096	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	4200			MS	5	9.6	1.3	7.7
7439-96-5	MANGANESE, TOTAL	243			MS	5	0.19	0.040	0.096
7439-97-6	MERCURY, TOTAL	0.019	J		CV	1	0.033	0.0052	0.017
7440-02-0	NICKEL, TOTAL	10.0			MS	5	0.19	0.025	0.12
7440-09-7	POTASSIUM, TOTAL	5010			MS	5	96	4.4	38
7782-49-2	SELENIUM, TOTAL	0.504			MS	5	0.48	0.037	0.29
7440-22-4	SILVER, TOTAL	0.177			MS	5	0.096	0.0062	0.038
7440-23-5	SODIUM, TOTAL	196			MS	5	96	2.5	38
7440-28-0	THALLIUM, TOTAL	0.251			MS	5	0.096	0.0091	0.038
7440-62-2	VANADIUM, TOTAL	22.6			MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	35.6			MS	5	0.96	0.12	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14100		NA	MS	5	8.0	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.275		N	MS	5	0.080	0.016	0.040
7440-38-2	ARSENIC, TOTAL	2.45			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	206		NA	MS	5	0.16	0.029	0.080
7440-41-7	BERYLLIUM, TOTAL	0.726			MS	5	0.080	0.0032	0.016
7440-43-9	CADMIUM, TOTAL	2.46		E	MS	5	0.080	0.0060	0.016
7440-70-2	CALCIUM, TOTAL	4790		NA	MS	5	8.0	3.0	6.4
7440-47-3	CHROMIUM, TOTAL	13.5			MS	5	0.40	0.039	0.32
7440-48-4	COBALT, TOTAL	5.20		E	MS	5	0.080	0.0044	0.024
7440-50-8	COPPER, TOTAL	47.6		EA	MS	5	0.24	0.056	0.16
7439-89-6	IRON, TOTAL	11900		NEA	MS	5	8.0	1.9	4.8
7439-92-1	LEAD, TOTAL	29.2		A	MS	5	0.080	0.0056	0.040
7439-95-4	MAGNESIUM, TOTAL	4110		NA	MS	5	8.0	1.1	6.4
7439-96-5	MANGANESE, TOTAL	229		NEA	MS	5	0.16	0.033	0.080
7439-97-6	MERCURY, TOTAL	0.362		NA	CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	11.2		E	MS	5	0.16	0.021	0.096
7440-09-7	POTASSIUM, TOTAL	4860		N	MS	5	80	3.6	32
7782-49-2	SELENIUM, TOTAL	0.494			MS	5	0.40	0.031	0.24
7440-22-4	SILVER, TOTAL	0.249			MS	5	0.080	0.0052	0.032
7440-23-5	SODIUM, TOTAL	94.0			MS	5	80	2.0	32
7440-28-0	THALLIUM, TOTAL	0.246			MS	5	0.080	0.0076	0.032
7440-62-2	VANADIUM, TOTAL	21.4		E	MS	5	0.40	0.088	0.32
7440-66-6	ZINC, TOTAL	88.7		E	MS	5	0.80	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-EB-031518

Matrix: WATER **SDG Name:** SL2133

Percent Solids: 0.00 **Lab Sample ID:** SL2133-020

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.13	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	1.0	U		MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	82	J		MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	0.72	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	0.20	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	31	J		MS	5	100	13	60
7439-92-1	LEAD, TOTAL	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	13	J		MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	0.69	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	1.0	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	43	J		MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS102

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 81.4 **Lab Sample ID:** SL2133-021

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12900			MS	5	9.5	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.218			MS	5	0.095	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.79			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	165			MS	5	0.19	0.035	0.095
7440-41-7	BERYLLIUM, TOTAL	0.648			MS	5	0.095	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	2.49			MS	5	0.095	0.0071	0.019
7440-70-2	CALCIUM, TOTAL	3260			MS	5	9.5	3.6	7.6
7440-47-3	CHROMIUM, TOTAL	13.2			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	5.09			MS	5	0.095	0.0052	0.028
7440-50-8	COPPER, TOTAL	20.5			MS	5	0.28	0.067	0.19
7439-89-6	IRON, TOTAL	11000			MS	5	9.5	2.3	5.7
7439-92-1	LEAD, TOTAL	22.5			MS	5	0.095	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	3500			MS	5	9.5	1.3	7.6
7439-96-5	MANGANESE, TOTAL	246			MS	5	0.19	0.040	0.095
7439-97-6	MERCURY, TOTAL	0.172			CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	9.77			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	4220			MS	5	95	4.3	38
7782-49-2	SELENIUM, TOTAL	0.494			MS	5	0.48	0.037	0.28
7440-22-4	SILVER, TOTAL	0.182			MS	5	0.095	0.0062	0.038
7440-23-5	SODIUM, TOTAL	94.6	J		MS	5	95	2.4	38
7440-28-0	THALLIUM, TOTAL	0.227			MS	5	0.095	0.0091	0.038
7440-62-2	VANADIUM, TOTAL	21.9			MS	5	0.48	0.10	0.38
7440-66-6	ZINC, TOTAL	51.1			MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS104

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.0 **Lab Sample ID:** SL2133-022

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12500			MS	5	8.3	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.187			MS	5	0.083	0.017	0.042
7440-38-2	ARSENIC, TOTAL	2.14			MS	5	0.42	0.12	0.33
7440-39-3	BARIUM, TOTAL	147			MS	5	0.17	0.030	0.083
7440-41-7	BERYLLIUM, TOTAL	0.633			MS	5	0.083	0.0034	0.017
7440-43-9	CADMIUM, TOTAL	0.450			MS	5	0.083	0.0062	0.017
7440-70-2	CALCIUM, TOTAL	2520			MS	5	8.3	3.2	6.6
7440-47-3	CHROMIUM, TOTAL	11.5			MS	5	0.42	0.041	0.33
7440-48-4	COBALT, TOTAL	5.02			MS	5	0.083	0.0046	0.025
7440-50-8	COPPER, TOTAL	17.8			MS	5	0.25	0.058	0.17
7439-89-6	IRON, TOTAL	10400			MS	5	8.3	2.0	5.0
7439-92-1	LEAD, TOTAL	14.1			MS	5	0.083	0.0058	0.042
7439-95-4	MAGNESIUM, TOTAL	3900			MS	5	8.3	1.1	6.6
7439-96-5	MANGANESE, TOTAL	244			MS	5	0.17	0.035	0.083
7439-97-6	MERCURY, TOTAL	0.029	J		CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	9.55			MS	5	0.17	0.022	0.10
7440-09-7	POTASSIUM, TOTAL	4680			MS	5	83	3.8	33
7782-49-2	SELENIUM, TOTAL	0.451			MS	5	0.42	0.032	0.25
7440-22-4	SILVER, TOTAL	0.242			MS	5	0.083	0.0054	0.033
7440-23-5	SODIUM, TOTAL	107			MS	5	83	2.1	33
7440-28-0	THALLIUM, TOTAL	0.234			MS	5	0.083	0.0079	0.033
7440-62-2	VANADIUM, TOTAL	20.5			MS	5	0.42	0.092	0.33
7440-66-6	ZINC, TOTAL	43.5			MS	5	0.83	0.11	0.66

Comments:

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: HLC20A Mar 20, 2018 9:27

Analyte	True	Found	%R (1)
MERCURY	6.0	5.98	99.7

SAMPLE: CCV

File: HLC20A Mar 20, 2018 9:33

Analyte	True	Found	%R (1)
MERCURY	5.0	4.96	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20A Mar 20, 2018 10:00

Analyte	True	Found	%R (1)
MERCURY	5.0	5.13	102.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: HLC20B Mar 20, 2018 12:02

Analyte	True	Found	%R (1)
MERCURY	6.0	5.91	98.5

SAMPLE: CCV

File: HLC20B Mar 20, 2018 12:09

Analyte	True	Found	%R (1)
MERCURY	5.0	4.65	93.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20B Mar 20, 2018 12:28

Analyte	True	Found	%R (1)
MERCURY	5.0	5.33	106.6

SAMPLE: CCV

File: HLC20B Mar 20, 2018 12:56

Analyte	True	Found	%R (1)
MERCURY	5.0	5.39	107.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20B Mar 20, 2018 13:20

Analyte	True	Found	%R (1)
MERCURY	5.0	4.59	91.8

SAMPLE: CCV

File: HLC20B Mar 20, 2018 13:47

Analyte	True	Found	%R (1)
MERCURY	5.0	4.98	99.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20B Mar 20, 2018 14:11

Analyte	True	Found	%R (1)
MERCURY	5.0	4.71	94.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: HLC22A Mar 22, 2018 10:18

Analyte	True	Found	%R (1)
MERCURY	6.0	5.89	98.2

SAMPLE: CCV

File: HLC22A Mar 22, 2018 10:25

Analyte	True	Found	%R (1)
MERCURY	5.0	4.86	97.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC22A Mar 22, 2018 10:53

Analyte	True	Found	%R (1)
MERCURY	5.0	4.53	90.6

SAMPLE: CCV

File: HLC22A Mar 22, 2018 11:21

Analyte	True	Found	%R (1)
MERCURY	5.0	4.96	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC20C Mar 20, 2018 17:33

Analyte	True	Found	%R (1)
ALUMINUM	400.0	390.20	97.5
ANTIMONY	20.0	19.96	99.8
ARSENIC	20.0	20.09	100.4
BARIUM	20.0	20.22	101.1
BERYLLIUM	20.0	19.93	99.6
CADMIUM	20.0	20.45	102.3
CALCIUM	4000.0	4082.00	102.1
CHROMIUM	20.0	19.88	99.4
COBALT	20.0	20.16	100.8
COPPER	20.0	20.13	100.6
IRON	4000.0	4081.00	102.0
LEAD	20.0	19.80	99.0
MAGNESIUM	4000.0	3976.00	99.4
MANGANESE	20.0	19.96	99.8
MOLYBDENUM	40.0	39.30	98.3
NICKEL	20.0	20.31	101.5
POTASSIUM	4000.0	3895.00	97.4
SELENIUM	20.0	20.25	101.3
SILVER	20.0	20.10	100.5
SODIUM	4000.0	3961.00	99.0
THALLIUM	20.0	19.99	99.9
VANADIUM	20.0	20.11	100.6
ZINC	20.0	20.82	104.1

SAMPLE: CCV

File: JLC20C Mar 20, 2018 18:17

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.50	96.9
ANTIMONY	25.0	24.95	99.8
ARSENIC	25.0	25.03	100.1
BARIUM	25.0	25.45	101.8
BERYLLIUM	25.0	25.10	100.4
CADMIUM	25.0	25.59	102.4
CALCIUM	5000.0	5088.00	101.8
CHROMIUM	25.0	24.93	99.7
COBALT	25.0	24.92	99.7
COPPER	25.0	25.06	100.2
IRON	5000.0	5113.00	102.3
LEAD	25.0	24.69	98.8
MAGNESIUM	5000.0	4945.00	98.9
MANGANESE	25.0	24.82	99.3
MOLYBDENUM	25.0	25.31	101.2
NICKEL	25.0	25.08	100.3
POTASSIUM	5000.0	4901.00	98.0
SELENIUM	25.0	25.69	102.8
SILVER	25.0	25.66	102.6
SODIUM	5000.0	4913.00	98.3
THALLIUM	25.0	24.65	98.6
VANADIUM	25.0	24.69	98.8
ZINC	25.0	25.08	100.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC20C Mar 20, 2018 19:06

Analyte	True	Found	%R (1)
ALUMINUM	500.0	483.90	96.8
ANTIMONY	25.0	25.19	100.8
ARSENIC	25.0	24.87	99.5
BARIUM	25.0	25.80	103.2
BERYLLIUM	25.0	24.82	99.3
CADMIUM	25.0	25.11	100.4
CALCIUM	5000.0	5097.00	101.9
CHROMIUM	25.0	24.80	99.2
COBALT	25.0	25.00	100.0
COPPER	25.0	24.76	99.0
IRON	5000.0	5095.00	101.9
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	4897.00	97.9
MANGANESE	25.0	24.63	98.5
MOLYBDENUM	25.0	25.11	100.4
NICKEL	25.0	25.25	101.0
POTASSIUM	5000.0	4910.00	98.2
SELENIUM	25.0	25.11	100.4
SILVER	25.0	25.27	101.1
SODIUM	5000.0	4849.00	97.0
THALLIUM	25.0	24.70	98.8
VANADIUM	25.0	24.98	99.9
ZINC	25.0	24.81	99.2

SAMPLE: CCV

File: JLC20C Mar 20, 2018 19:56

Analyte	True	Found	%R (1)
ALUMINUM	500.0	486.70	97.3
ANTIMONY	25.0	24.98	99.9
ARSENIC	25.0	24.45	97.8
BARIUM	25.0	25.28	101.1
BERYLLIUM	25.0	24.80	99.2
CADMIUM	25.0	24.72	98.9
CALCIUM	5000.0	5108.00	102.2
CHROMIUM	25.0	24.78	99.1
COBALT	25.0	24.76	99.0
COPPER	25.0	24.69	98.8
IRON	5000.0	5088.00	101.8
LEAD	25.0	24.66	98.6
MAGNESIUM	5000.0	4972.00	99.4
MANGANESE	25.0	24.62	98.5
MOLYBDENUM	25.0	24.73	98.9
NICKEL	25.0	25.07	100.3
POTASSIUM	5000.0	4950.00	99.0
SELENIUM	25.0	24.34	97.4
SILVER	25.0	25.09	100.4
SODIUM	5000.0	4901.00	98.0
THALLIUM	25.0	24.47	97.9
VANADIUM	25.0	24.54	98.2
ZINC	25.0	24.77	99.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC20C Mar 20, 2018 20:47

Analyte	True	Found	%R (1)
ALUMINUM	500.0	486.90	97.4
ANTIMONY	25.0	25.06	100.2
ARSENIC	25.0	24.90	99.6
BARIUM	25.0	25.02	100.1
BERYLLIUM	25.0	24.51	98.0
CADMIUM	25.0	24.86	99.4
CALCIUM	5000.0	5103.00	102.1
CHROMIUM	25.0	24.62	98.5
COBALT	25.0	24.54	98.2
COPPER	25.0	24.85	99.4
IRON	5000.0	5065.00	101.3
LEAD	25.0	24.45	97.8
MAGNESIUM	5000.0	4923.00	98.5
MANGANESE	25.0	24.48	97.9
MOLYBDENUM	25.0	24.89	99.6
NICKEL	25.0	24.59	98.4
POTASSIUM	5000.0	4927.00	98.5
SELENIUM	25.0	25.01	100.0
SILVER	25.0	25.14	100.6
SODIUM	5000.0	4858.00	97.2
THALLIUM	25.0	24.37	97.5
VANADIUM	25.0	24.81	99.2
ZINC	25.0	24.53	98.1

SAMPLE: CCV

File: JLC20C Mar 20, 2018 21:37

Analyte	True	Found	%R (1)
ALUMINUM	500.0	487.40	97.5
ANTIMONY	25.0	25.04	100.2
ARSENIC	25.0	25.02	100.1
BARIUM	25.0	25.39	101.6
BERYLLIUM	25.0	24.66	98.6
CADMIUM	25.0	24.90	99.6
CALCIUM	5000.0	5074.00	101.5
CHROMIUM	25.0	25.02	100.1
COBALT	25.0	24.87	99.5
COPPER	25.0	24.91	99.6
IRON	5000.0	5159.00	103.2
LEAD	25.0	24.54	98.2
MAGNESIUM	5000.0	4905.00	98.1
MANGANESE	25.0	24.99	100.0
MOLYBDENUM	25.0	24.98	99.9
NICKEL	25.0	25.26	101.0
POTASSIUM	5000.0	4938.00	98.8
SELENIUM	25.0	25.15	100.6
SILVER	25.0	25.20	100.8
SODIUM	5000.0	4817.00	96.3
THALLIUM	25.0	24.50	98.0
VANADIUM	25.0	25.16	100.6
ZINC	25.0	24.84	99.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC20C Mar 20, 2018 22:28

Analyte	True	Found	%R (1)
ALUMINUM	500.0	493.20	98.6
ANTIMONY	25.0	25.30	101.2
ARSENIC	25.0	25.28	101.1
BARIUM	25.0	25.50	102.0
BERYLLIUM	25.0	25.22	100.9
CADMIUM	25.0	25.05	100.2
CALCIUM	5000.0	5160.00	103.2
CHROMIUM	25.0	25.22	100.9
COBALT	25.0	25.33	101.3
COPPER	25.0	25.27	101.1
IRON	5000.0	5218.00	104.4
LEAD	25.0	24.72	98.9
MAGNESIUM	5000.0	4973.00	99.5
MANGANESE	25.0	25.13	100.5
MOLYBDENUM	25.0	24.98	99.9
NICKEL	25.0	25.48	101.9
POTASSIUM	5000.0	5061.00	101.2
SELENIUM	25.0	25.28	101.1
SILVER	25.0	25.16	100.6
SODIUM	5000.0	4943.00	98.9
THALLIUM	25.0	24.56	98.2
VANADIUM	25.0	25.30	101.2
ZINC	25.0	25.32	101.3

SAMPLE: CCV

File: JLC20C Mar 20, 2018 23:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	491.40	98.3
ANTIMONY	25.0	25.24	101.0
ARSENIC	25.0	25.12	100.5
BARIUM	25.0	25.17	100.7
BERYLLIUM	25.0	25.25	101.0
CADMIUM	25.0	25.11	100.4
CALCIUM	5000.0	5161.00	103.2
CHROMIUM	25.0	25.17	100.7
COBALT	25.0	24.97	99.9
COPPER	25.0	25.27	101.1
IRON	5000.0	5205.00	104.1
LEAD	25.0	24.56	98.2
MAGNESIUM	5000.0	4942.00	98.8
MANGANESE	25.0	25.12	100.5
MOLYBDENUM	25.0	25.09	100.4
NICKEL	25.0	25.35	101.4
POTASSIUM	5000.0	4986.00	99.7
SELENIUM	25.0	25.31	101.2
SILVER	25.0	25.44	101.8
SODIUM	5000.0	4909.00	98.2
THALLIUM	25.0	24.71	98.8
VANADIUM	25.0	25.23	100.9
ZINC	25.0	25.02	100.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC21A Mar 21, 2018 14:56

Analyte	True	Found	%R (1)
ALUMINUM	400.0	396.10	99.0
CALCIUM	4000.0	4035.00	100.9
IRON	4000.0	4101.00	102.5
MAGNESIUM	4000.0	3918.00	98.0
MOLYBDENUM	40.0	38.63	96.6
POTASSIUM	4000.0	3903.00	97.6
SODIUM	4000.0	3874.00	96.9

SAMPLE: CCV

File: JLC21A Mar 21, 2018 15:37

Analyte	True	Found	%R (1)
ALUMINUM	500.0	504.10	100.8
CALCIUM	5000.0	5204.00	104.1
IRON	5000.0	5146.00	102.9
MAGNESIUM	5000.0	5069.00	101.4
MOLYBDENUM	25.0	25.59	102.4
POTASSIUM	5000.0	5069.00	101.4
SODIUM	5000.0	4971.00	99.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC21A Mar 21, 2018 16:23

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.70	100.5
CALCIUM	5000.0	5197.00	103.9
IRON	5000.0	5094.00	101.9
MAGNESIUM	5000.0	4952.00	99.0
MOLYBDENUM	25.0	25.19	100.8
POTASSIUM	5000.0	5029.00	100.6
SODIUM	5000.0	4845.00	96.9

SAMPLE: CCV

File: JLC21A Mar 21, 2018 17:11

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.80	100.6
CALCIUM	5000.0	5148.00	103.0
IRON	5000.0	5095.00	101.9
MAGNESIUM	5000.0	4935.00	98.7
MOLYBDENUM	25.0	24.97	99.9
POTASSIUM	5000.0	5032.00	100.6
SODIUM	5000.0	4840.00	96.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC21A Mar 21, 2018 18:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	516.40	103.3
CALCIUM	5000.0	5113.00	102.3
IRON	5000.0	5130.00	102.6
MAGNESIUM	5000.0	5018.00	100.4
MOLYBDENUM	25.0	24.95	99.8
POTASSIUM	5000.0	4985.00	99.7
SODIUM	5000.0	4872.00	97.4

SAMPLE: CCV

File: JLC21A Mar 21, 2018 18:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.00	99.6
CALCIUM	5000.0	5149.00	103.0
IRON	5000.0	5091.00	101.8
MAGNESIUM	5000.0	4973.00	99.5
MOLYBDENUM	25.0	24.79	99.2
POTASSIUM	5000.0	4973.00	99.5
SODIUM	5000.0	4915.00	98.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC22E Mar 22, 2018 17:17

Analyte	True	Found	%R (1)
ALUMINUM	400.0	397.80	99.5
ARSENIC	20.0	19.34	96.7
CADMIUM	20.0	19.99	99.9
CALCIUM	4000.0	4012.00	100.3
CHROMIUM	20.0	19.33	96.6
COBALT	20.0	19.42	97.1
COPPER	20.0	19.63	98.1
IRON	4000.0	4018.00	100.4
MAGNESIUM	4000.0	3890.00	97.3
MANGANESE	20.0	19.49	97.4
MOLYBDENUM	40.0	38.27	95.7
NICKEL	20.0	19.62	98.1
POTASSIUM	4000.0	3845.00	96.1
SELENIUM	20.0	19.90	99.5
SILVER	20.0	19.82	99.1
SODIUM	4000.0	3813.00	95.3
VANADIUM	20.0	19.51	97.5
ZINC	20.0	20.06	100.3

SAMPLE: CCV

File: JLC22E Mar 22, 2018 18:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	493.40	98.7
ARSENIC	25.0	24.82	99.3
CADMIUM	25.0	25.02	100.1
CALCIUM	5000.0	5013.00	100.3
CHROMIUM	25.0	24.86	99.4
COBALT	25.0	25.02	100.1
COPPER	25.0	25.20	100.8
IRON	5000.0	5019.00	100.4
MAGNESIUM	5000.0	4873.00	97.5
MANGANESE	25.0	24.98	99.9
MOLYBDENUM	25.0	24.60	98.4
NICKEL	25.0	24.92	99.7
POTASSIUM	5000.0	4939.00	98.8
SELENIUM	25.0	24.82	99.3
SILVER	25.0	24.98	99.9
SODIUM	5000.0	4836.00	96.7
VANADIUM	25.0	24.81	99.2
ZINC	25.0	25.09	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC22E Mar 22, 2018 18:50

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.80	99.2
ARSENIC	25.0	25.05	100.2
CADMIUM	25.0	25.49	102.0
CALCIUM	5000.0	5038.00	100.8
CHROMIUM	25.0	25.06	100.2
COBALT	25.0	24.97	99.9
COPPER	25.0	25.31	101.2
IRON	5000.0	5076.00	101.5
MAGNESIUM	5000.0	4847.00	96.9
MANGANESE	25.0	25.13	100.5
MOLYBDENUM	25.0	25.46	101.8
NICKEL	25.0	25.22	100.9
POTASSIUM	5000.0	5003.00	100.1
SELENIUM	25.0	25.25	101.0
SILVER	25.0	25.54	102.2
SODIUM	5000.0	4751.00	95.0
VANADIUM	25.0	25.18	100.7
ZINC	25.0	25.33	101.3

SAMPLE: CCV

File: JLC22E Mar 22, 2018 19:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.50	99.1
ARSENIC	25.0	25.08	100.3
CADMIUM	25.0	25.55	102.2
CALCIUM	5000.0	5138.00	102.8
CHROMIUM	25.0	25.46	101.8
COBALT	25.0	25.38	101.5
COPPER	25.0	25.40	101.6
IRON	5000.0	5137.00	102.7
MAGNESIUM	5000.0	4883.00	97.7
MANGANESE	25.0	25.52	102.1
MOLYBDENUM	25.0	25.85	103.4
NICKEL	25.0	25.46	101.8
POTASSIUM	5000.0	4940.00	98.8
SELENIUM	25.0	24.76	99.0
SILVER	25.0	25.82	103.3
SODIUM	5000.0	4787.00	95.7
VANADIUM	25.0	25.62	102.5
ZINC	25.0	25.27	101.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC22E Mar 22, 2018 20:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.50	98.9
ARSENIC	25.0	24.85	99.4
CADMIUM	25.0	25.65	102.6
CALCIUM	5000.0	5157.00	103.1
CHROMIUM	25.0	25.09	100.4
COBALT	25.0	25.15	100.6
COPPER	25.0	25.43	101.7
IRON	5000.0	5071.00	101.4
MAGNESIUM	5000.0	4817.00	96.3
MANGANESE	25.0	25.11	100.4
MOLYBDENUM	25.0	25.71	102.8
NICKEL	25.0	25.09	100.4
POTASSIUM	5000.0	4939.00	98.8
SELENIUM	25.0	25.42	101.7
SILVER	25.0	26.16	104.6
SODIUM	5000.0	4750.00	95.0
VANADIUM	25.0	25.19	100.8
ZINC	25.0	25.21	100.8

SAMPLE: CCV

File: JLC22E Mar 22, 2018 21:22

Analyte	True	Found	%R (1)
ALUMINUM	500.0	491.80	98.4
ARSENIC	25.0	25.06	100.2
CADMIUM	25.0	24.85	99.4
CALCIUM	5000.0	5145.00	102.9
CHROMIUM	25.0	25.55	102.2
COBALT	25.0	25.29	101.2
COPPER	25.0	25.61	102.4
IRON	5000.0	5124.00	102.5
MAGNESIUM	5000.0	4818.00	96.4
MANGANESE	25.0	25.32	101.3
MOLYBDENUM	25.0	25.37	101.5
NICKEL	25.0	25.53	102.1
POTASSIUM	5000.0	4977.00	99.5
SELENIUM	25.0	25.52	102.1
SILVER	25.0	25.36	101.4
SODIUM	5000.0	4776.00	95.5
VANADIUM	25.0	25.47	101.9
ZINC	25.0	25.11	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC22E Mar 22, 2018 22:13

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.10	99.0
ARSENIC	25.0	25.16	100.6
CADMIUM	25.0	25.50	102.0
CALCIUM	5000.0	5143.00	102.9
CHROMIUM	25.0	25.26	101.0
COBALT	25.0	25.29	101.2
COPPER	25.0	25.50	102.0
IRON	5000.0	5145.00	102.9
MAGNESIUM	5000.0	4862.00	97.2
MANGANESE	25.0	25.39	101.6
MOLYBDENUM	25.0	25.53	102.1
NICKEL	25.0	25.21	100.8
POTASSIUM	5000.0	5027.00	100.5
SELENIUM	25.0	25.44	101.8
SILVER	25.0	25.83	103.3
SODIUM	5000.0	4812.00	96.2
VANADIUM	25.0	25.34	101.4
ZINC	25.0	25.59	102.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC26B Mar 26, 2018 16:22

Analyte	True	Found	%R (1)
ALUMINUM	400.0	403.00	100.8
ARSENIC	20.0	19.53	97.7
CADMIUM	20.0	19.96	99.8
CALCIUM	4000.0	4003.00	100.1
CHROMIUM	20.0	19.40	97.0
COBALT	20.0	19.52	97.6
COPPER	20.0	19.59	98.0
IRON	4000.0	3993.00	99.8
MAGNESIUM	4000.0	4012.00	100.3
MANGANESE	20.0	19.46	97.3
MOLYBDENUM	40.0	38.12	95.3
NICKEL	20.0	19.67	98.4
POTASSIUM	4000.0	3930.00	98.3
SELENIUM	20.0	19.96	99.8
SILVER	20.0	19.61	98.0
SODIUM	4000.0	3930.00	98.3
VANADIUM	20.0	19.40	97.0
ZINC	20.0	20.16	100.8

SAMPLE: CCV

File: JLC26B Mar 26, 2018 17:05

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.10	102.0
ARSENIC	25.0	25.14	100.6
CADMIUM	25.0	25.64	102.6
CALCIUM	5000.0	5134.00	102.7
CHROMIUM	25.0	25.17	100.7
COBALT	25.0	25.09	100.4
COPPER	25.0	25.34	101.4
IRON	5000.0	5116.00	102.3
MAGNESIUM	5000.0	5127.00	102.5
MANGANESE	25.0	25.18	100.7
MOLYBDENUM	25.0	24.97	99.9
NICKEL	25.0	25.33	101.3
POTASSIUM	5000.0	5053.00	101.1
SELENIUM	25.0	25.50	102.0
SILVER	25.0	25.53	102.1
SODIUM	5000.0	5011.00	100.2
VANADIUM	25.0	24.80	99.2
ZINC	25.0	25.62	102.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC26B Mar 26, 2018 17:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	518.10	103.6
ARSENIC	25.0	25.50	102.0
CADMIUM	25.0	25.38	101.5
CALCIUM	5000.0	5144.00	102.9
CHROMIUM	25.0	25.14	100.6
COBALT	25.0	25.12	100.5
COPPER	25.0	25.39	101.6
IRON	5000.0	5142.00	102.8
MAGNESIUM	5000.0	5057.00	101.1
MANGANESE	25.0	25.38	101.5
MOLYBDENUM	25.0	25.05	100.2
NICKEL	25.0	25.29	101.2
POTASSIUM	5000.0	5014.00	100.3
SELENIUM	25.0	25.57	102.3
SILVER	25.0	25.70	102.8
SODIUM	5000.0	4974.00	99.5
VANADIUM	25.0	24.93	99.7
ZINC	25.0	25.79	103.2

SAMPLE: CCV

File: JLC26B Mar 26, 2018 18:42

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.40	101.5
ARSENIC	25.0	25.74	103.0
CADMIUM	25.0	25.58	102.3
CALCIUM	5000.0	5130.00	102.6
CHROMIUM	25.0	25.41	101.6
COBALT	25.0	25.42	101.7
COPPER	25.0	25.50	102.0
IRON	5000.0	5181.00	103.6
MAGNESIUM	5000.0	5106.00	102.1
MANGANESE	25.0	25.22	100.9
MOLYBDENUM	25.0	25.22	100.9
NICKEL	25.0	25.54	102.2
POTASSIUM	5000.0	5077.00	101.5
SELENIUM	25.0	25.63	102.5
SILVER	25.0	25.58	102.3
SODIUM	5000.0	4934.00	98.7
VANADIUM	25.0	25.14	100.6
ZINC	25.0	25.72	102.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: HLC20A Mar 20, 2018 09:31

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.17	85.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: HLC20B Mar 20, 2018 12:07

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.20	100.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: HLC22A Mar 22, 2018 10:23

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.20	100.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC20C Mar 20, 2018 17:40

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.06	100.3
ANTIMONY	0.2	0.20	100.0
ARSENIC	1.0	1.02	102.0
BARIUM	0.4	0.41	102.5
BERYLLIUM	0.2	0.20	100.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	20.39	102.0
CHROMIUM	1.0	0.98	98.0
COBALT	0.2	0.21	105.0
COPPER	0.6	0.71	118.3
IRON	20.0	21.35	106.8
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.47	102.3
MANGANESE	0.4	0.40	100.0
MOLYBDENUM	1.0	1.05	105.0
NICKEL	0.4	0.42	105.0
POTASSIUM	200.0	198.10	99.0
SELENIUM	1.0	1.13	113.0
SILVER	0.2	0.22	110.0
SODIUM	200.0	207.40	103.7
THALLIUM	0.2	0.19	95.0
VANADIUM	1.0	1.01	101.0
ZINC	2.0	2.43	121.5•

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC21A Mar 21, 2018 15:03

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.23	101.2
CALCIUM	20.0	18.96	94.8
IRON	20.0	18.68	93.4
MAGNESIUM	20.0	19.76	98.8
MOLYBDENUM	1.0	0.99	99.0
POTASSIUM	200.0	199.40	99.7
SODIUM	200.0	208.70	104.3

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC22E Mar 22, 2018 17:25

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.04	100.2
ARSENIC	1.0	1.15	115.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	21.81	109.1
CHROMIUM	1.0	0.94	94.0
COBALT	0.2	0.21	105.0
COPPER	0.6	0.61	101.7
IRON	20.0	22.97	114.8
MAGNESIUM	20.0	19.83	99.1
MANGANESE	0.4	0.38	95.0
MOLYBDENUM	1.0	0.98	98.0
NICKEL	0.4	0.43	107.5
POTASSIUM	200.0	192.60	96.3
SELENIUM	1.0	1.20	120.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	198.30	99.2
VANADIUM	1.0	0.98	98.0
ZINC	2.0	2.09	104.5

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC26B Mar 26, 2018 16:29

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.04	95.2
ARSENIC	1.0	1.04	104.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	19.97	99.8
CHROMIUM	1.0	1.02	102.0
COBALT	0.2	0.22	110.0
COPPER	0.6	0.64	106.7
IRON	20.0	17.40	87.0
MAGNESIUM	20.0	20.22	101.1
MANGANESE	0.4	0.40	100.0
MOLYBDENUM	1.0	0.95	95.0
NICKEL	0.4	0.39	97.5
POTASSIUM	200.0	201.30	100.6
SELENIUM	1.0	1.19	119.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	210.10	105.1
VANADIUM	1.0	0.97	97.0
ZINC	2.0	2.06	103.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: HLC20A Mar 20, 2018 9:29

Analyte	Result	C
MERCURY	-0.040	U

SAMPLE: CCB

File: HLC20A Mar 20, 2018 9:35

Analyte	Result	C
MERCURY	-0.035	U

SAMPLE: CCB

File: HLC20A Mar 20, 2018 10:02

Analyte	Result	C
MERCURY	-0.034	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: HLC20B Mar 20, 2018 12:04

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC20B Mar 20, 2018 12:11

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC20B Mar 20, 2018 12:30

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB
File: HLC20B Mar 20, 2018 12:59

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB
File: HLC20B Mar 20, 2018 13:22

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB
File: HLC20B Mar 20, 2018 13:50

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: HLC20B Mar 20, 2018 14:13

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: HLC22A Mar 22, 2018 10:21

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC22A Mar 22, 2018 10:27

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC22A Mar 22, 2018 10:55

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: HLC22A Mar 22, 2018 11:23

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB
File: JLC20C Mar 20, 2018 17:37

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.011	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 18:21

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.010	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.037	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 19:10

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB
File: JLC20C Mar 20, 2018 20:00

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.024	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 20:51

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.007	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 21:41

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.007	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: JLC20C Mar 20, 2018 22:32

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.009	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.037	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB

File: JLC20C Mar 20, 2018 23:23

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.009	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.038	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: JLC21A Mar 21, 2018 15:00

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.036	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLC21A Mar 21, 2018 15:40

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	-5.579	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.045	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLC21A Mar 21, 2018 16:27

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	-4.412	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB
File: JLC21A Mar 21, 2018 17:15

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB
File: JLC21A Mar 21, 2018 18:04

Analyte	Result	C
ALUMINUM	14.670	B
CALCIUM	9.193	J
IRON	6.456	J
MAGNESIUM	8.290	J
MOLYBDENUM	0.058	J
POTASSIUM	7.900	U
SODIUM	5.128	J

SAMPLE: CCB
File: JLC21A Mar 21, 2018 18:53

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: JLC22E Mar 22, 2018 17:21

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB

File: JLC22E Mar 22, 2018 18:05

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.035	J
NICKEL	0.018	U
POTASSIUM	-10.590	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB

File: JLC22E Mar 22, 2018 18:54

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB
File: JLC22E Mar 22, 2018 19:44

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.568	J
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC22E Mar 22, 2018 20:35

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	-0.191	U
CADMIUM	0.007	U
CALCIUM	5.702	J
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC22E Mar 22, 2018 21:27

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	-0.307	U
CADMIUM	0.007	U
CALCIUM	5.622	J
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.027	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: JLC22E Mar 22, 2018 22:17

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.008	J
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: JLC26B Mar 26, 2018 16:26

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB

File: JLC26B Mar 26, 2018 17:09

Analyte	Result	C
ALUMINUM	49.710	B
ARSENIC	0.350	J
CADMIUM	0.105	B
CALCIUM	44.900	B
CHROMIUM	0.201	J
COBALT	0.110	B
COPPER	0.188	J
IRON	27.730	B
MAGNESIUM	67.070	B
MANGANESE	0.200	J
MOLYBDENUM	0.360	J
NICKEL	0.122	J
POTASSIUM	48.810	J
SELENIUM	0.470	U
SILVER	0.015	J
SODIUM	55.320	J
VANADIUM	0.098	J
ZINC	0.430	J

SAMPLE: CCB

File: JLC26B Mar 26, 2018 17:57

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: JLC26B Mar 26, 2018 18:46

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.012	J
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.030	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC19HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC19IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19IMS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
ALUMINUM	1.4	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	8.0	U
CHROMIUM	0.12	J
COBALT	0.030	U
COPPER	0.075	J
IRON	6.0	U
LEAD	0.031	J
MAGNESIUM	1.7	J
MANGANESE	0.10	U
NICKEL	0.052	J
POTASSIUM	40	U
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	4.0	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.80	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC20HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC20IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20IMS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
ALUMINUM	1.1	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	5.4	J
CHROMIUM	0.13	J
COBALT	0.030	U
COPPER	0.20	U
IRON	6.0	U
LEAD	0.030	J
MAGNESIUM	8.0	U
MANGANESE	0.049	J
NICKEL	0.063	J
POTASSIUM	40	U
SELENIUM	0.044	J
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.26	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC21HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC21HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLC19HGW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19HGW2

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLC19IMW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	8.3	J
ANTIMONY	0.10	J
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	80	U
CHROMIUM	0.66	J
COBALT	0.30	U
COPPER	2.0	U
IRON	14	J
LEAD	0.50	U
MAGNESIUM	80	U
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	400	U
SELENIUM	1.2	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC20C Mar 20, 2018 17:48

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95700.00	95.7
ANTIMONY	0	0.07	
ARSENIC	0	0.34	
BARIUM	0	0.09	
BERYLLIUM	0	0.00	
CADMIUM	0	0.02	
CALCIUM	100000.00	98950.00	99.0
CHROMIUM	0	0.88	
COBALT	0	0.10	
COPPER	0	0.97	
IRON	100000.00	95490.00	95.5
LEAD	0	0.09	
MAGNESIUM	100000.00	96440.00	96.4
MANGANESE	0	0.33	
MOLYBDENUM	2000.00	1966.00	98.3
NICKEL	0	-0.09	
POTASSIUM	100000.00	98660.00	98.7
SELENIUM	0	0.20	
SILVER	0	0.03	
SODIUM	100000.00	97650.00	97.7
THALLIUM	0	0.00	
VANADIUM	0	0.20	
ZINC	0	2.28	

SAMPLE: ICSAB

File: JLC20C Mar 20, 2018 17:53

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96200.00	96.2
ANTIMONY	20.00	20.65	105.0
ARSENIC	20.00	21.27	105.0
BARIUM	21.00	21.34	100.0
BERYLLIUM	20.00	20.99	105.0
CADMIUM	20.00	19.62	100.0
CALCIUM	100000.00	100000.00	100.0
CHROMIUM	20.00	21.50	110.0
COBALT	20.00	20.49	100.0
COPPER	20.00	20.60	105.0
IRON	100000.00	97530.00	97.5
LEAD	20.00	21.68	110.0
MAGNESIUM	100000.00	97350.00	97.4
MANGANESE	20.00	20.70	105.0
MOLYBDENUM	2000.00	1998.00	99.9
NICKEL	20.00	19.86	100.0
POTASSIUM	100000.00	99710.00	99.7
SELENIUM	20.00	20.57	105.0
SILVER	20.00	19.27	95.0
SODIUM	100000.00	98390.00	98.4
THALLIUM	20.00	21.78	110.0
VANADIUM	20.00	21.28	105.0
ZINC	20.00	21.47	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC21A Mar 21, 2018 15:11

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	94680.00	94.7
CALCIUM	100000.00	95910.00	95.9
IRON	100000.00	93650.00	93.7
MAGNESIUM	100000.00	94340.00	94.3
MOLYBDENUM	2000.00	1885.00	94.3
POTASSIUM	100000.00	96960.00	97.0
SODIUM	100000.00	94290.00	94.3

SAMPLE: ICSAB

File: JLC21A Mar 21, 2018 15:15

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93340.00	93.3
CALCIUM	100000.00	95000.00	95.0
IRON	100000.00	92240.00	92.2
MAGNESIUM	100000.00	92740.00	92.7
MOLYBDENUM	2000.00	1887.00	94.3
POTASSIUM	100000.00	95980.00	96.0
SODIUM	100000.00	92720.00	92.7

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC22E Mar 22, 2018 17:33

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95920.00	95.9
ARSENIC	0	0.33	
CADMIUM	0	0.09	
CALCIUM	100000.00	97010.00	97.0
CHROMIUM	0	0.85	
COBALT	0	0.10	
COPPER	0	0.99	
IRON	100000.00	90580.00	90.6
MAGNESIUM	100000.00	94160.00	94.2
MANGANESE	0	0.33	
MOLYBDENUM	2000.00	1841.00	92.0
NICKEL	0	-0.07	
POTASSIUM	100000.00	97790.00	97.8
SELENIUM	0	0.34	
SILVER	0	0.02	
SODIUM	100000.00	95480.00	95.5
VANADIUM	0	0.19	
ZINC	0	2.38	

SAMPLE: ICSAB

File: JLC22E Mar 22, 2018 17:37

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95880.00	95.9
ARSENIC	20.00	20.07	100.0
CADMIUM	20.00	18.83	95.0
CALCIUM	100000.00	97010.00	97.0
CHROMIUM	20.00	20.45	100.0
COBALT	20.00	19.40	95.0
COPPER	20.00	19.57	100.0
IRON	100000.00	91780.00	91.8
MAGNESIUM	100000.00	93700.00	93.7
MANGANESE	20.00	19.91	100.0
MOLYBDENUM	2000.00	1880.00	94.0
NICKEL	20.00	18.72	95.0
POTASSIUM	100000.00	97430.00	97.4
SELENIUM	20.00	19.53	100.0
SILVER	20.00	18.51	95.0
SODIUM	100000.00	94740.00	94.7
VANADIUM	20.00	20.28	100.0
ZINC	20.00	20.67	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC26B Mar 26, 2018 16:37

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95400.00	95.4
ARSENIC	0	0.38	
CADMIUM	0	0.08	
CALCIUM	100000.00	94520.00	94.5
CHROMIUM	0	0.74	
COBALT	0	0.09	
COPPER	0	0.88	
IRON	100000.00	89940.00	89.9
MAGNESIUM	100000.00	95140.00	95.1
MANGANESE	0	0.29	
MOLYBDENUM	2000.00	1802.00	90.1
NICKEL	0	-0.11	
POTASSIUM	100000.00	96960.00	97.0
SELENIUM	0	0.18	
SILVER	0	0.02	
SODIUM	100000.00	96140.00	96.1
VANADIUM	0	0.20	
ZINC	0	2.26	

SAMPLE: ICSAB

File: JLC26B Mar 26, 2018 16:41

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96870.00	96.9
ARSENIC	20.00	19.72	100.0
CADMIUM	20.00	18.64	95.0
CALCIUM	100000.00	96200.00	96.2
CHROMIUM	20.00	20.08	100.0
COBALT	20.00	19.01	95.0
COPPER	20.00	19.10	95.0
IRON	100000.00	89700.00	89.7
MAGNESIUM	100000.00	95310.00	95.3
MANGANESE	20.00	19.49	95.0
MOLYBDENUM	2000.00	1839.00	92.0
NICKEL	20.00	18.54	95.0
POTASSIUM	100000.00	98350.00	98.4
SELENIUM	20.00	19.21	95.0
SILVER	20.00	18.49	90.0
SODIUM	100000.00	96010.00	96.0
VANADIUM	20.00	19.84	100.0
ZINC	20.00	20.51	105.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06S

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019P

Concentration Units : mg/Kg drywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	17200		14100		160.17	1917.0	N	78	124	MS
ANTIMONY, TOTAL	3.13		0.275		8.01	35.7	N	72	124	MS
ARSENIC, TOTAL	9.57		2.45		8.01	88.9		82	118	MS
BARIUM, TOTAL	395		206		160.17	117.8	N	86	116	MS
BERYLLIUM, TOTAL	4.78		0.726		4	101.5		80	120	MS
CADMIUM, TOTAL	20.2		2.46		20.02	88.7		84	116	MS
CALCIUM, TOTAL	5210		4790		200.21	209.6	N	86	118	MS
CHROMIUM, TOTAL	31.7		13.5		16.02	113.6		83	119	MS
COBALT, TOTAL	42.1		5.20		40.04	92.1		84	115	MS
COPPER, TOTAL	69.9		47.6		20.02	111.5		84	119	MS
IRON, TOTAL	13400		11900		80.09	1870.9	N	81	124	MS
LEAD, TOTAL	38.3		29.2		8.01	113.4		84	118	MS
MAGNESIUM, TOTAL	4820		4110		400.43	177.6	N	80	123	MS
MANGANESE, TOTAL	282		229		40.04	131.9	N	85	116	MS
MERCURY, TOTAL	0.452		0.362		0.18	50.2	N	80	124	CV
NICKEL, TOTAL	47.8		11.2		40.04	91.3		84	119	MS
POTASSIUM, TOTAL	6330		4860		800.86	183.2	N	85	119	MS
SELENIUM, TOTAL	7.15		0.494		8.01	83.1		80	119	MS
SILVER, TOTAL	3.83		0.249		4	89.6		83	118	MS
SODIUM, TOTAL	693		94.0		600.64	99.8		79	125	MS
THALLIUM, TOTAL	8.37		0.246		8.01	101.4		83	118	MS
VANADIUM, TOTAL	63.9		21.4		40.04	106.3		82	116	MS
ZINC, TOTAL	127		88.7		40.04	96.7		82	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06S

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019S

Concentration Units : mg/Kg drywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	16800		14100		160.17	1679.5	N	78	124	MS
ANTIMONY, TOTAL	3.16		0.275		8.01	36.0	N	72	124	MS
ARSENIC, TOTAL	9.39		2.45		8.01	86.7		82	118	MS
BARIUM, TOTAL	386		206		160.17	112.7		86	116	MS
BERYLLIUM, TOTAL	4.56		0.726		4	96.0		80	120	MS
CADMIUM, TOTAL	20.3		2.46		20.02	89.3		84	116	MS
CALCIUM, TOTAL	4440		4790		200.21	-174.4	N	86	118	MS
CHROMIUM, TOTAL	31.1		13.5		16.02	109.9		83	119	MS
COBALT, TOTAL	42.0		5.20		40.04	91.8		84	115	MS
COPPER, TOTAL	66.1		47.6		20.02	92.5		84	119	MS
IRON, TOTAL	12800		11900		80.09	1070.9	N	81	124	MS
LEAD, TOTAL	36.1		29.2		8.01	86.4		84	118	MS
MAGNESIUM, TOTAL	4600		4110		400.43	123.6	N	80	123	MS
MANGANESE, TOTAL	270		229		40.04	103.1		85	116	MS
MERCURY, TOTAL	0.480		0.362		0.19	62.2	N	80	124	CV
NICKEL, TOTAL	47.0		11.2		40.04	89.4		84	119	MS
POTASSIUM, TOTAL	6050		4860		800.86	148.2	N	85	119	MS
SELENIUM, TOTAL	7.26		0.494		8.01	84.5		80	119	MS
SILVER, TOTAL	3.86		0.249		4	90.4		83	118	MS
SODIUM, TOTAL	684		94.0		600.64	98.2		79	125	MS
THALLIUM, TOTAL	8.40		0.246		8.01	101.8		83	118	MS
VANADIUM, TOTAL	64.0		21.4		40.04	106.4		82	116	MS
ZINC, TOTAL	122		88.7		40.04	84.2		82	119	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06S

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	35600		35500		200	45.0	A	80	120	MS
ANTIMONY, TOTAL	2.87		0.692		2	108.7		80	120	MS
ARSENIC, TOTAL	16.6		6.16		10	104.6		80	120	MS
BARIUM, TOTAL	510		519		4	-235.0	A	80	120	MS
BERYLLIUM, TOTAL	4.19		1.82		2	118.4		80	120	MS
CADMIUM, TOTAL	7.95		6.18		2	88.4		80	120	MS
CALCIUM, TOTAL	11900		12000		200	-40.0	A	80	120	MS
CHROMIUM, TOTAL	43.3		34.0		10	92.7		80	120	MS
COBALT, TOTAL	14.7		13.1		2	82.0		80	120	MS
COPPER, TOTAL	123		120		6	45.0	A	80	120	MS
IRON, TOTAL	29400		29900		200	-250.0	A	80	120	MS
LEAD, TOTAL	73.3		73.3		2	2.0	A	80	120	MS
MAGNESIUM, TOTAL	10000		10300		200	-135.0	A	80	120	MS
MANGANESE, TOTAL	564		574		4	-255.0	A	80	120	MS
MERCURY, TOTAL	1.64		1.93		1	-29.2	A	80	120	CV
NICKEL, TOTAL	31.8		28.2		4	89.8		80	120	MS
POTASSIUM, TOTAL	14300		12200		2000	104.0		80	120	MS
SELENIUM, TOTAL	11.2		1.24		10	99.9		80	120	MS
SILVER, TOTAL	2.72		0.627		2	104.9		80	120	MS
SODIUM, TOTAL	2510		236		2000	113.7		80	120	MS
THALLIUM, TOTAL	2.81		0.618		2	109.5		80	120	MS
VANADIUM, TOTAL	65.2		53.6		10	115.7		80	120	MS
ZINC, TOTAL	239		223		20	80.5		80	120	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019

Concentration Units : mg/Kg drywt

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, TOTAL		16800		17200		2.2		MS
ANTIMONY, TOTAL		3.16		3.13		0.8		MS
ARSENIC, TOTAL		9.39		9.57		1.9		MS
BARIUM, TOTAL		386		395		2.1		MS
BERYLLIUM, TOTAL		4.56		4.78		4.7		MS
CADMIUM, TOTAL		20.3		20.2		0.5		MS
CALCIUM, TOTAL		4440		5210		15.9		MS
CHROMIUM, TOTAL		31.1		31.7		1.9		MS
COBALT, TOTAL		42.0		42.1		0.3		MS
COPPER, TOTAL		66.1		69.9		5.6		MS
IRON, TOTAL		12800		13400		4.9		MS
LEAD, TOTAL		36.1		38.3		5.8		MS
MAGNESIUM, TOTAL		4600		4820		4.6		MS
MANGANESE, TOTAL		270		282		4.2		MS
MERCURY, TOTAL		0.480		0.452		6.0		CV
NICKEL, TOTAL		47.0		47.8		1.6		MS
POTASSIUM, TOTAL		6050		6330		4.5		MS
SELENIUM, TOTAL		7.26		7.15		1.6		MS
SILVER, TOTAL		3.86		3.83		0.9		MS
SODIUM, TOTAL		684		693		1.3		MS
THALLIUM, TOTAL		8.40		8.37		0.4		MS
VANADIUM, TOTAL		64.0		63.9		0.1		MS
ZINC, TOTAL		122		127		4.0		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OLC20HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.807	97.6	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC19HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.884	106.0	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC19IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19IMS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200	198	99.0	78	124
ANTIMONY	10.0	10.2	102.5	72	124
ARSENIC	10.0	10.0	100.0	82	118
BARIUM	200	205	102.6	86	116
BERYLLIUM	5.00	4.93	98.6	80	120
CADMIUM	25.0	25.5	102.0	84	116
CALCIUM	250	253	101.0	86	118
CHROMIUM	20.0	19.4	97.0	83	119
COBALT	50.0	50.2	100.3	84	115
COPPER	25.0	24.7	98.7	84	119
IRON	100	97.3	97.3	81	124
LEAD	10.0	10.2	102.3	84	118
MAGNESIUM	500	508	101.5	80	123
MANGANESE	50.0	48.8	97.7	85	116
NICKEL	50.0	50.5	101.0	84	119
POTASSIUM	1000	976	97.5	85	119
SELENIUM	10.0	9.78	97.8	80	119
SILVER	5.00	5.11	102.2	83	118
SODIUM	750	731	97.5	79	125
THALLIUM	10.0	10.0	100.6	83	118
VANADIUM	50.0	49.0	98.1	82	116
ZINC	50.0	47.9	95.8	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC20HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.864	103.6	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC20IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20IMS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200	209	104.5	78	124
ANTIMONY	10.0	10.3	102.6	72	124
ARSENIC	10.0	10.1	101.1	82	118
BARIUM	200	207	103.7	86	116
BERYLLIUM	5.00	4.93	98.6	80	120
CADMIUM	25.0	25.4	101.6	84	116
CALCIUM	250	258	103.3	86	118
CHROMIUM	20.0	19.7	98.6	83	119
COBALT	50.0	51.0	102.0	84	115
COPPER	25.0	24.8	99.0	84	119
IRON	100	98.0	98.0	81	124
LEAD	10.0	10.3	103.1	84	118
MAGNESIUM	500	524	104.8	80	123
MANGANESE	50.0	49.9	99.7	85	116
NICKEL	50.0	50.4	100.8	84	119
POTASSIUM	1000	1000	100.1	85	119
SELENIUM	10.0	10.0	100.2	80	119
SILVER	5.00	5.14	103.0	83	118
SODIUM	750	735	98.0	79	125
THALLIUM	10.0	10.2	101.8	83	118
VANADIUM	50.0	50.1	100.2	82	116
ZINC	50.0	48.2	96.3	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC21HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC21HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.839	101.2	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLC19HGW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19HGW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	4.60	92.0	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLC19IMW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000	2240	111.9	84	117
ANTIMONY	100	112	112.1	85	117
ARSENIC	100	111	110.9	84	116
BARIUM	2000	2260	113.1	86	114
BERYLLIUM	50.0	53.4	106.9	83	121
CADMIUM	250	278	111.4	87	115
CALCIUM	2500	2790	111.6	87	118
CHROMIUM	200	220	109.9	85	116
COBALT	500	572	114.4	86	115
COPPER	250	277	110.8	85	118
IRON	1000	1120	111.9	87	118
LEAD	100	111	110.9	88	115
MAGNESIUM	5000	5780	115.6	83	118
MANGANESE	500	560	112.0	87	115
NICKEL	500	563	112.6	85	117
POTASSIUM	10000	10900	108.6	87	115
SELENIUM	100	108	108.2	80	120
SILVER	50.0	56.2	112.4	85	116
SODIUM	7500	8060	107.4	85	117
THALLIUM	100	108	107.9	82	116
VANADIUM	500	570	113.9	86	115
ZINC	500	502	100.5	83	119

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1 **Lab Sample ID:** LCSOLC20HGS1

Concentration Units: mg/Kg drywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.864	0.807	6.8	

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06L

Matrix: SOIL **SDG Name:** SL2133

Lab Sample ID: SL2133-019L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	35500		37400		5.4		MS
ANTIMONY, TOTAL	0.692		0.82	J	18.5		MS
ARSENIC, TOTAL	6.16		7.2		16.9		MS
BARIUM, TOTAL	519		541		4.2		MS
BERYLLIUM, TOTAL	1.82		1.98		8.8		MS
CADMIUM, TOTAL	6.18		7.38		19.4	E	MS
CALCIUM, TOTAL	12000		13000		8.3		MS
CHROMIUM, TOTAL	34.0		39.1		15.0		MS
COBALT, TOTAL	13.1		15.4		17.6	E	MS
COPPER, TOTAL	120		142		18.3	E	MS
IRON, TOTAL	29900		36000		20.4	E	MS
LEAD, TOTAL	73.3		75.1		2.5		MS
MAGNESIUM, TOTAL	10300		11100		7.8		MS
MANGANESE, TOTAL	574		684		19.2	E	MS
MERCURY, TOTAL	1.93		1.96		1.6		CV
NICKEL, TOTAL	28.2		33.2		17.7	E	MS
POTASSIUM, TOTAL	12200		12900		5.7		MS
SELENIUM, TOTAL	1.24		2.0	J	61.3		MS
SILVER, TOTAL	0.627		0.732	J	16.7		MS
SODIUM, TOTAL	236		220	J	6.8		MS
THALLIUM, TOTAL	0.618		0.64	J	3.6		MS
VANADIUM, TOTAL	53.6		61.9		15.5	E	MS
ZINC, TOTAL	223		270		21.1	E	MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/11/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.024	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/15/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	20	1.9	MS
ANTIMONY	0.20	0.0056	MS
ARSENIC	1.0	0.18	MS
BARIUM	0.40	0.075	MS
BERYLLIUM	0.20	0.0037	MS
CADMIUM	0.20	0.0069	MS
CALCIUM	20	5.3	MS
CHROMIUM	1.0	0.062	MS
COBALT	0.20	0.0062	MS
COPPER	0.60	0.030	MS
IRON	20	4.3	MS
LEAD	0.20	0.010	MS
MAGNESIUM	20	1.3	MS
MANGANESE	0.40	0.021	MS
MOLYBDENUM	1.0	0.034	MS
NICKEL	0.40	0.018	MS
POTASSIUM	200	7.9	MS
SELENIUM	1.0	0.47	MS
SILVER	0.20	0.0030	MS
SODIUM	200	4.4	MS
THALLIUM	0.20	0.0084	MS
VANADIUM	1.0	0.063	MS
ZINC	2.0	0.27	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.017	mg/Kg	CV	SW846 7471B / SW846 7471B

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / SW846 7470A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.0	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.20	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.060	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
IRON	12	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.20	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.24	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.60	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.080	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.080	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	1.6	ug/L	MS	SW846 3010A / SW846 6020A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.010	mg/kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.080	mg/kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.020	mg/kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.0040	mg/Kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.0040	mg/kg	MS	SW846 3050B / SW846 6020A
CALCIUM	1.6	mg/kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.080	mg/kg	MS	SW846 3050B / SW846 6020A
COBALT	0.0060	mg/kg	MS	SW846 3050B / SW846 6020A
COPPER	0.040	mg/kg	MS	SW846 3050B / SW846 6020A
IRON	1.2	mg/kg	MS	SW846 3050B / SW846 6020A
LEAD	0.010	mg/Kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	1.6	mg/kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.020	mg/kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.024	mg/kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	8.0	mg/Kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.060	mg/kg	MS	SW846 3050B / SW846 6020A
SILVER	0.0080	mg/kg	MS	SW846 3050B / SW846 6020A
SODIUM	8.0	mg/kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.0080	mg/kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.080	mg/Kg	MS	SW846 3050B / SW846 6020A
ZINC	0.16	mg/kg	MS	SW846 3050B / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.0052	mg/Kg	CV	SW846 7471B / SW846 7471B

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.013	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.011	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.054	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.0067	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.0059	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	4.1	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.044	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.012	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.037	ug/L	MS	SW846 3010A / SW846 6020A
IRON	2.6	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.015	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	1.6	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.070	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.030	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	6.1	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.037	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.010	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	3.7	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.012	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.0040	mg/kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.029	mg/kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.0073	mg/kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.00081	mg/kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.0015	mg/kg	MS	SW846 3050B / SW846 6020A
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.0098	mg/kg	MS	SW846 3050B / SW846 6020A
COBALT	0.0011	mg/kg	MS	SW846 3050B / SW846 6020A
COPPER	0.014	mg/kg	MS	SW846 3050B / SW846 6020A
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020A
LEAD	0.0014	mg/kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.0084	mg/kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.0053	mg/kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.0078	mg/kg	MS	SW846 3050B / SW846 6020A
SILVER	0.0013	mg/kg	MS	SW846 3050B / SW846 6020A
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.0019	mg/kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.022	mg/kg	MS	SW846 3050B / SW846 6020A
ZINC	0.026	mg/kg	MS	SW846 3050B / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/31/2018

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	2000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	1000	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	2000	MS
COBALT	0.10	1000	MS
COPPER	0.10	2000	MS
IRON	0.03	100000	MS
LEAD	0.10	2000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	2000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	1000	MS
SILVER	0.10	100	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	2000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19HGS1

Matrix: SOIL **SDG Name:** SL2133

Method: CV **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC19HGS1	LCSOLC19HGS1	0.6	0.1	
PBSLC19HGS1	PBSLC19HGS1	0.6	0.1	
CHAAP-20B-SB01-11	SL2133-001	0.8	0.1	A
CHAAP-20B-SB01-4	SL2133-002	0.73	0.1	A
CHAAP-20B-SB01-8	SL2133-003	0.66	0.1	A
CHAAP-20B-SB02-4	SL2133-004	0.75	0.1	A
CHAAP-20B-SB02-8	SL2133-005	0.68	0.1	A
CHAAP-20B-SB03-4	SL2133-006	0.65	0.1	A
CHAAP-20B-SB03-8	SL2133-007	0.73	0.1	A
CHAAP-20B-SB04-4	SL2133-008	0.71	0.1	A
CHAAP-20B-SB04-8	SL2133-009	0.74	0.1	A
CHAAP-20B-SB05-4	SL2133-010	0.62	0.1	A
CHAAP-20B-SB05-8	SL2133-011	0.74	0.1	A
CHAAP-20B-SB06-4	SL2133-012	0.68	0.1	A
CHAAP-20B-SB06-8	SL2133-013	0.71	0.1	A
CHAAP-20B-SS01	SL2133-014	0.64	0.1	A
CHAAP-20B-SS02	SL2133-015	0.8	0.1	A
CHAAP-20B-SS03	SL2133-016	0.68	0.1	A
CHAAP-20B-SS04	SL2133-017	0.72	0.1	A
CHAAP-20B-SS05	SL2133-018	0.78	0.1	A
CHAAP-20B-SS06	SL2133-019	0.68	0.1	A
CHAAP-20B-SS06P	SL2133-019P	0.68	0.1	A
CHAAP-20B-SS06S	SL2133-019S	0.68	0.1	A
CHAAP-20B-SS102	SL2133-021	0.66	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19HGW2

Matrix: WATER **SDG Name:** SL2133

Method: CV **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLC19HGW2	LCSWLC19HGW2	0.025	0.025	
PBWLC19HGW2	PBWLC19HGW2	0.025	0.025	
CHAAP-20B-EB-031518	SL2133-020	0.025	0.025	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19IMS1

Matrix: SOIL **SDG Name:** SL2133

Method: MS **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC19IMS1	LCSOLC19IMS1	1	0.1	
PBSLC19IMS1	PBSLC19IMS1	1	0.1	
CHAAP-20B-SB01-11	SL2133-001	1.76	0.1	A
CHAAP-20B-SB01-4	SL2133-002	1.41	0.1	A
CHAAP-20B-SB01-8	SL2133-003	1.34	0.1	A
CHAAP-20B-SB02-4	SL2133-004	1.56	0.1	A
CHAAP-20B-SB02-8	SL2133-005	1.61	0.1	A
CHAAP-20B-SB03-4	SL2133-006	1.19	0.1	A
CHAAP-20B-SB03-8	SL2133-007	1.38	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19IMW2

Matrix: WATER **SDG Name:** SL2133

Method: MS **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLC19IMW2	LCSWLC19IMW2	0.05	0.05	
PBWLC19IMW2	PBWLC19IMW2	0.05	0.05	
CHAAP-20B-EB-031518	SL2133-020	0.05	0.05	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC20HGS1

Matrix: SOIL **SDG Name:** SL2133

Method: CV **Prep Date:** 03/20/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OLC20HGS1	LC2OLC20HGS1	0.6	0.1	
LCSOLC20HGS1	LCSOLC20HGS1	0.6	0.1	
PBSLC20HGS1	PBSLC20HGS1	0.6	0.1	
CHAAP-20B-SS104	SL2133-022	0.68	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC20IMS1

Matrix: SOIL **SDG Name:** SL2133

Method: MS **Prep Date:** 03/20/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC20IMS1	LCSOLC20IMS1	1	0.1	
PBSLC20IMS1	PBSLC20IMS1	1	0.1	
CHAAP-20B-SB04-4	SL2133-008	2.01	0.1	A
CHAAP-20B-SB04-8	SL2133-009	1.82	0.1	A
CHAAP-20B-SB05-4	SL2133-010	1.83	0.1	A
CHAAP-20B-SB05-8	SL2133-011	1.68	0.1	A
CHAAP-20B-SB06-4	SL2133-012	2.01	0.1	A
CHAAP-20B-SB06-8	SL2133-013	1.55	0.1	A
CHAAP-20B-SS01	SL2133-014	1.38	0.1	A
CHAAP-20B-SS02	SL2133-015	1.43	0.1	A
CHAAP-20B-SS03	SL2133-016	1.38	0.1	A
CHAAP-20B-SS04	SL2133-017	1.22	0.1	A
CHAAP-20B-SS05	SL2133-018	1.35	0.1	A
CHAAP-20B-SS06	SL2133-019	1.6	0.1	A
CHAAP-20B-SS06P	SL2133-019P	1.59	0.1	A
CHAAP-20B-SS06S	SL2133-019S	1.59	0.1	A
CHAAP-20B-SS102	SL2133-021	1.29	0.1	A
CHAAP-20B-SS104	SL2133-022	1.52	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC21HGS1

Matrix: SOIL **SDG Name:** SL2133

Method: CV **Prep Date:** 03/21/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC21HGS1	LCSOLC21HGS1	0.6	0.1	
PBSLC21HGS1	PBSLC21HGS1	0.6	0.1	
CHAAP-20B-SS06P	SL2133-019RP	0.69	0.1	A
CHAAP-20B-SS06S	SL2133-019RS	0.68	0.1	A

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20A

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	9:14	Hg
Standard #1 (0.2 ppb		1	9:16	Hg
Standard #2 (0.5 ppb		1	9:18	Hg
Standard #3 (1.0 ppb		1	9:20	Hg
Standard #4 (5.0 ppb		1	9:22	Hg
Standard #5 (10.0 pp		1	9:25	Hg
ICV		1	9:27	HG
ICB		1	9:29	HG
PQL		1	9:31	HG
CCV		1	9:33	HG
CCB		1	9:35	HG
PBWLC19HGW2		1	9:37	HG
LCSWLC19HGW2		1	9:39	HG
SL2133-020	CHAAP-20B-EB-031518	1	9:42	HG
ZZZZZZ		1	9:44	
ZZZZZZ		1	9:46	
ZZZZZZ		1	9:48	
ZZZZZZ		1	9:50	
ZZZZZZ		1	9:54	
ZZZZZZ		1	9:56	
ZZZZZZ		1	9:58	
CCV		1	10:00	HG
CCB		1	10:02	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20B

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	11:48	Hg
Standard #1 (0.2 ppb		1	11:50	Hg
Standard #2 (0.5 ppb		1	11:53	Hg
Standard #3 (1.0 ppb		1	11:55	Hg
Standard #4 (5.0 ppb		1	11:57	Hg
Standard #5 (10.0 pp		1	11:59	Hg
ICV		1	12:02	HG
ICB		1	12:04	HG
PQL		1	12:07	HG
CCV		1	12:09	HG
CCB		1	12:11	HG
PBSLC19HGS1		1	12:13	HG
LCSOLC19HGS1		1	12:15	HG
SL2133-001	CHAAP-20B-SB01-11	1	12:17	HG
SL2133-002	CHAAP-20B-SB01-4	1	12:19	HG
SL2133-003	CHAAP-20B-SB01-8	1	12:21	HG
SL2133-004	CHAAP-20B-SB02-4	1	12:24	HG
SL2133-005	CHAAP-20B-SB02-8	1	12:26	HG
CCV		1	12:28	HG
CCB		1	12:30	HG
SL2133-006	CHAAP-20B-SB03-4	1	12:35	HG
SL2133-007	CHAAP-20B-SB03-8	1	12:37	HG
SL2133-008	CHAAP-20B-SB04-4	1	12:39	HG
SL2133-009	CHAAP-20B-SB04-8	1	12:41	HG
SL2133-010	CHAAP-20B-SB05-4	1	12:44	HG
SL2133-011	CHAAP-20B-SB05-8	1	12:46	HG
SL2133-012	CHAAP-20B-SB06-4	1	12:48	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20B

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SL2133-013	CHAAP-20B-SB06-8	1	12:50	HG
SL2133-014	CHAAP-20B-SS01	1	12:52	HG
SL2133-015	CHAAP-20B-SS02	1	12:54	HG
CCV		1	12:56	HG
CCB		1	12:59	HG
SL2133-016	CHAAP-20B-SS03	1	13:01	HG
SL2133-017	CHAAP-20B-SS04	1	13:03	HG
SL2133-018	CHAAP-20B-SS05	1	13:05	HG
SL2133-019	CHAAP-20B-SS06	1	13:07	HG
SL2133-019L	CHAAP-20B-SS06L	5	13:09	HG
ZZZZZZ		1	13:11	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
SL2133-021	CHAAP-20B-SS102	1	13:18	HG
CCV		1	13:20	HG
CCB		1	13:22	HG
PBSLC20HGS1		1	13:24	HG
LCSOLC20HGS1		1	13:26	HG
LC2OLC20HGS1		1	13:30	HG
SL2133-022	CHAAP-20B-SS104	1	13:32	HG
ZZZZZZ		1	13:34	
ZZZZZZ		1	13:37	
ZZZZZZ		1	13:39	
ZZZZZZ		1	13:41	
ZZZZZZ		1	13:43	
ZZZZZZ		1	13:45	
CCV		1	13:47	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20B

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	13:50	HG
ZZZZZZ		1	13:52	
ZZZZZZ		1	13:54	
ZZZZZZ		1	13:56	
ZZZZZZ		1	13:58	
ZZZZZZ		1	14:00	
ZZZZZZ		1	14:03	
SL2133-019A	CHAAP-20B-SS06A	2	14:05	HG
ZZZZZZ		2	14:07	
ZZZZZZ		2	14:09	
CCV		1	14:11	HG
CCB		1	14:13	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC22A

Date: 3/22/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	10:06	Hg
Standard #1 (0.2 ppb		1	10:08	Hg
Standard #2 (0.5 ppb		1	10:10	Hg
Standard #3 (1.0 ppb		1	10:12	Hg
Standard #4 (5.0 ppb		1	10:14	Hg
Standard #5 (10.0 pp		1	10:16	Hg
ICV		1	10:18	HG
ICB		1	10:21	HG
PQL		1	10:23	HG
CCV		1	10:25	HG
CCB		1	10:27	HG
PBSLC21HGS1		1	10:29	HG
LCSOLC21HGS1		1	10:34	HG
ZZZZZZ		1	10:36	
ZZZZZZ		5	10:38	
ZZZZZZ		1	10:40	
ZZZZZZ		1	10:42	
ZZZZZZ		1	10:45	
ZZZZZZ		1	10:47	
ZZZZZZ		1	10:49	
ZZZZZZ		1	10:51	
CCV		1	10:53	HG
CCB		1	10:55	HG
SL2133-019RP	CHAAP-20B-SS06P	1	10:57	HG
SL2133-019RS	CHAAP-20B-SS06S	1	11:00	HG
ZZZZZZ		1	11:02	
ZZZZZZ		1	11:04	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC22A

Date: 3/22/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	11:06	
ZZZZZZ		1	11:08	
ZZZZZZ		1	11:10	
ZZZZZZ		1	11:14	
ZZZZZZ		1	11:16	
ZZZZZZ		1	11:18	
CCV		1	11:21	HG
CCB		1	11:23	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:01	
200.8 TUNE		1	14:04	
Cal Blank		1	17:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 6		1	17:29	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	17:33	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	17:37	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	17:40	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	17:44	
ICSA		1	17:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	17:53	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	17:57	
ZZZZZZ		1	18:01	
ZZZZZZ		1	18:04	
ZZZZZZ		1	18:09	
ZZZZZZ		1	18:13	
CCV		1	18:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSLC19IMS1		5	18:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSOLC19IMS1		5	18:29	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:33	
ZZZZZZ		5	18:37	
ZZZZZZ		5	18:41	
ZZZZZZ		5	18:45	
ZZZZZZ		5	18:50	
ZZZZZZ		5	18:54	
ZZZZZZ		5	18:58	
ZZZZZZ		1	19:02	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	19:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	19:14	
ZZZZZZ		5	19:19	
ZZZZZZ		25	19:23	
ZZZZZZ		5	19:27	
ZZZZZZ		5	19:31	
ZZZZZZ		5	19:35	
ZZZZZZ		5	19:40	
ZZZZZZ		5	19:44	
ZZZZZZ		5	19:48	
ZZZZZZ		1	19:52	
CCV		1	19:56	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	20:04	
SL2133-001	CHAAP-20B-SB01-11	5	20:09	Al Sb Ba Be Ca Pb Mg K Na Tl
SL2133-002	CHAAP-20B-SB01-4	5	20:13	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-003	CHAAP-20B-SB01-8	5	20:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-004	CHAAP-20B-SB02-4	5	20:21	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-005	CHAAP-20B-SB02-8	5	20:25	Al Sb Ba Be Ca Pb Mg K Na Tl
SL2133-006	CHAAP-20B-SB03-4	5	20:30	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-007	CHAAP-20B-SB03-8	5	20:34	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	20:38	
ZZZZZZ		5	20:42	
CCV		1	20:47	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:51	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSLC20IMS1		5	20:55	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
LCSOLC20IMS1		5	20:59	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-008	CHAAP-20B-SB04-4	5	21:03	Sb Ba Be Pb Mg K Na Tl
SL2133-009	CHAAP-20B-SB04-8	5	21:07	Sb Ba Be Ca Pb Mg K Na Tl
SL2133-010	CHAAP-20B-SB05-4	5	21:12	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-011	CHAAP-20B-SB05-8	5	21:16	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-012	CHAAP-20B-SB06-4	5	21:20	Sb Ba Be Ca Pb Mg K Na Tl
SL2133-013	CHAAP-20B-SB06-8	5	21:24	Sb Ba Be Ca Pb Mg K Na Tl
SL2133-014	CHAAP-20B-SS01	5	21:29	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	21:33	
CCV		1	21:37	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	21:41	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL2133-015	CHAAP-20B-SS02	5	21:46	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-016	CHAAP-20B-SS03	5	21:50	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-017	CHAAP-20B-SS04	5	21:54	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-018	CHAAP-20B-SS05	5	21:58	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019	CHAAP-20B-SS06	5	22:03	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019L	CHAAP-20B-SS06L	25	22:07	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019A	CHAAP-20B-SS06A	5	22:11	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019S	CHAAP-20B-SS06S	5	22:15	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019P	CHAAP-20B-SS06P	5	22:20	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	22:24	
CCV		1	22:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	22:32	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL2133-021	CHAAP-20B-SS102	5	22:37	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-022	CHAAP-20B-SS104	5	22:41	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	22:45	
ZZZZZZ		1	22:49	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
PBWLC19IMW2		5	22:53	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
LCSWLC19IMW2		5	22:58	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
SL2133-020	CHAAP-20B-EB-031518	5	23:02	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
ZZZZZZ		5	23:06	
ZZZZZZ		5	23:10	
ZZZZZZ		1	23:14	
CCV		1	23:18	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	23:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC21A

Date: 3/21/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	14:00							
200.8 TUNE		1	14:03							
Cal Blank		1	14:49	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std 6		1	14:53	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	14:56	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	15:00	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	15:03	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:07							
ICSA		1	15:11	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	15:15	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:18							
ZZZZZZ		1	15:22							
ZZZZZZ		1	15:25							
ZZZZZZ		1	15:29							
ZZZZZZ		1	15:33							
CCV		1	15:37	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	15:40	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	15:44							
ZZZZZZ		10	15:48							
ZZZZZZ		5	15:52							
ZZZZZZ		10	15:56							
ZZZZZZ		5	16:00							
ZZZZZZ		10	16:04							
SL2133-004	CHAAP-20B-SB02-4	10	16:08		Ca					
ZZZZZZ		5	16:11							
ZZZZZZ		10	16:15							
ZZZZZZ		1	16:19							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC21A

Date: 3/21/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
CCV		1	16:23	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	16:27	Al	Ca	Fe	Mg	Mo	K	Na
PBSLC20IMS1		5	16:31	Al						
LCSOLC20IMS1		5	16:35	Al						
SL2133-008	CHAAP-20B-SB04-4	5	16:39	Al						
SL2133-008	CHAAP-20B-SB04-4	10	16:43		Ca					
SL2133-009	CHAAP-20B-SB04-8	5	16:47	Al						
ZZZZZZ		10	16:51							
SL2133-010	CHAAP-20B-SB05-4	5	16:55	Al						
SL2133-011	CHAAP-20B-SB05-8	5	16:59	Al						
SL2133-012	CHAAP-20B-SB06-4	5	17:03	Al						
ZZZZZZ		1	17:07							
CCV		1	17:11	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	17:15	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		10	17:19							
SL2133-013	CHAAP-20B-SB06-8	5	17:23	Al						
ZZZZZZ		10	17:27							
SL2133-014	CHAAP-20B-SS01	5	17:31	Al						
SL2133-015	CHAAP-20B-SS02	5	17:36	Al						
SL2133-016	CHAAP-20B-SS03	5	17:40	Al						
SL2133-017	CHAAP-20B-SS04	5	17:44	Al						
SL2133-018	CHAAP-20B-SS05	5	17:48	Al						
SL2133-019	CHAAP-20B-SS06	5	17:52	Al						
ZZZZZZ		1	17:56							
CCV		1	18:00	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	18:04	Al	Ca	Fe	Mg	Mo	K	Na
SL2133-019L	CHAAP-20B-SS06L	25	18:08	Al						

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC21A

Date: 3/21/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
SL2133-019A	CHAAP-20B-SS06A	5	18:12	Al						
SL2133-019S	CHAAP-20B-SS06S	5	18:16	Al						
SL2133-019P	CHAAP-20B-SS06P	5	18:20	Al						
SL2133-021	CHAAP-20B-SS102	5	18:25	Al						
SL2133-022	CHAAP-20B-SS104	5	18:29	Al						
ZZZZZZ		1	18:33							
ZZZZZZ		1	18:37							
ZZZZZZ		5	18:41							
ZZZZZZ		5	18:45							
CCV		1	18:49	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	18:53	Al	Ca	Fe	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC22E

Date: 3/22/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	13:55	
200.8 TUNE		1	13:57	
Cal Blank		1	17:09	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std 6		1	17:13	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	17:17	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	17:21	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	17:25	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	17:29	
ICSA		1	17:33	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	17:37	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	17:41	
ZZZZZZ		1	17:45	
ZZZZZZ		1	17:49	
ZZZZZZ		1	17:53	
ZZZZZZ		1	17:57	
CCV		1	18:01	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	18:05	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	18:09	
ZZZZZZ		5	18:13	
ZZZZZZ		5	18:18	
SL2133-005	CHAAP-20B-SB02-8	5	18:22	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-008	CHAAP-20B-SB04-4	5	18:26	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-009	CHAAP-20B-SB04-8	5	18:30	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-012	CHAAP-20B-SB06-4	5	18:34	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-013	CHAAP-20B-SB06-8	5	18:38	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
ZZZZZZ		1	18:42	
ZZZZZZ		1	18:46	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC22E

Date: 3/22/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																			
CCV		1	18:50	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
CCB		1	18:54	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
ZZZZZZ		5	18:58																				
ZZZZZZ		5	19:03																				
ZZZZZZ		5	19:06																				
ZZZZZZ		5	19:11																				
ZZZZZZ		5	19:15																				
ZZZZZZ		5	19:19																				
ZZZZZZ		1	19:24																				
ZZZZZZ		1	19:28																				
ZZZZZZ		5	19:32																				
ZZZZZZ		5	19:36																				
CCV		1	19:40	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
CCB		1	19:44	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
ZZZZZZ		5	19:48																				
ZZZZZZ		5	19:53																				
ZZZZZZ		5	19:57																				
ZZZZZZ		5	20:01																				
ZZZZZZ		5	20:05																				
ZZZZZZ		5	20:10																				
ZZZZZZ		5	20:14																				
ZZZZZZ		5	20:18																				
ZZZZZZ		25	20:23																				
ZZZZZZ		1	20:27																				
CCV		1	20:31	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
CCB		1	20:35	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
ZZZZZZ		5	20:39																				

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC22E

Date: 3/22/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	20:44	
ZZZZZZ		5	20:48	
ZZZZZZ		5	20:52	
ZZZZZZ		5	20:57	
ZZZZZZ		5	21:01	
ZZZZZZ		5	21:05	
ZZZZZZ		5	21:10	
ZZZZZZ		5	21:14	
ZZZZZZ		1	21:18	
CCV		1	21:22	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	21:27	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	21:31	
ZZZZZZ		5	21:35	
ZZZZZZ		1	21:39	
PBWLC19IMW2		5	21:43	Zn
LCSWLC19IMW2		5	21:48	Zn
ZZZZZZ		5	21:52	
ZZZZZZ		5	21:56	
SL2133-020	CHAAP-20B-EB-031518	5	22:00	Zn
ZZZZZZ		1	22:04	
ZZZZZZ		1	22:08	
CCV		1	22:13	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	22:17	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC26B

Date: 3/26/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	13:56	
200.8 TUNE		1	13:59	
Cal Blank		1	16:14	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std 6		1	16:18	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	16:22	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	16:26	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	16:29	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	16:33	
ICSA		1	16:37	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	16:41	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	16:46	
ZZZZZZ		1	16:49	
ZZZZZZ		1	16:53	
ZZZZZZ		1	16:57	
ZZZZZZ		1	17:01	
CCV		1	17:05	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	17:09	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	17:13	
ZZZZZZ		1	17:17	
ZZZZZZ		1	17:21	
ZZZZZZ		1	17:25	
ZZZZZZ		1	17:29	
ZZZZZZ		1	17:33	
ZZZZZZ		1	17:37	
ZZZZZZ		1	17:41	
ZZZZZZ		5	17:45	
ZZZZZZ		10	17:49	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC26B

Date: 3/26/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																				
CCV		1	17:53	Al	As		Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na		V	Zn	
CCB		1	17:57	Al	As		Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na		V	Zn	
ZZZZZZ		20	18:02																					
SL2133-001	CHAAP-20B-SB01-11	5	18:06		As		Cd		Cr	Co	Cu	Fe		Mn		Ni		Se	Ag			V	Zn	
ZZZZZZ		10	18:10																					
ZZZZZZ		20	18:14																					
ZZZZZZ		1	18:18																					
ZZZZZZ		1	18:22																					
ZZZZZZ		5	18:26																					
ZZZZZZ		1	18:30																					
ZZZZZZ		1	18:34																					
ZZZZZZ		1	18:38																					
CCV		1	18:42	Al	As		Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na		V	Zn	
CCB		1	18:46	Al	As		Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na		V	Zn	

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-1
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB01-11	SL	15-MAR-18 11:45:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:32:24	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000277

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-2
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB01-4	SL	15-MAR-18 11:35:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.38 mg/Kgdrywt	0.63	0.19	0.38	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	80. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:32:49	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000278

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-3
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB01-8	SL	15-MAR-18 11:40:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:32:57	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000279

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-4
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB02-4	SL	15-MAR-18 12:25:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.35 mg/Kgdrywt	0.58	0.17	0.35	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	81. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:03	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000280

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-5
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB02-8	SL	15-MAR-18 12:30:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	74. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:11	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000281

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-6
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB03-4	SL	15-MAR-18 13:10:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.19 mg/Kgdrywt	0.64	0.19	0.39	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:20	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000282

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-7
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB03-8	SL	15-MAR-18 13:15:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:27	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000283

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-8
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB04-4	SL	15-MAR-18 10:35:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.40 mg/Kgdrywt	0.59	0.18	0.35	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	79. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:38	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000284

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-9
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB04-8	SL	15-MAR-18 10:40:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:47	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000285

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-10
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB05-4	SL	15-MAR-18 09:55:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.42 mg/Kgdrywt	0.63	0.19	0.38	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:55	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000286

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-11
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB05-8	SL	15-MAR-18 10:05:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:03	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000287

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-12
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB06-4	SL	15-MAR-18 12:05:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	79. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:12	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000288

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-13
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB06-8	SL	15-MAR-18 12:10:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	75. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:20	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000289

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-14
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS01	SL	15-MAR-18 10:45:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.34 mg/Kgdrywt	0.56	0.17	0.34	SW846 7196A	WG225555	27-MAR-18 16:36:00	SW846 3060A	26-MAR-18	
Total Solids	85. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:28	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000290

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-15
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS02	SL	15-MAR-18 12:40:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.60	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	80. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:37	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000291

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-16
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS03	SL	15-MAR-18 12:45:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.57 mg/Kgdrywt	0.61	0.18	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:46	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000292

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-17
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS04	SL	15-MAR-18 10:25:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.37 mg/Kgdrywt	0.62	0.19	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:53	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000293

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-18
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS05	SL	15-MAR-18 09:50:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:38:02	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000294

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-19
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS06	SL	15-MAR-18 11:10:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.41 mg/Kgdrywt	0.61	0.18	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:37:49	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000295

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-21
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS102	SL	15-MAR-18 12:00:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.33 mg/Kgdrywt	0.59	0.18	0.36	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	81. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:37:41	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000296

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-22
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS104	SL	15-MAR-18 12:00:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.37 mg/Kgdrywt	0.62	0.19	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	79. %	1		N/A	SW3540C	WG224935	19-MAR-18 09:44:36	SW3540C	16-MAR-18	

Katahdin Analytical Services A0000297

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG225318	SW846 7196A	22-MAR-18	21-MAR-18	U 0.29 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29
MBLANK	WG225319	SW846 7196A	22-MAR-18	21-MAR-18	U 0.29 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29
MBLANK	WG225555	SW846 7196A	27-MAR-18	26-MAR-18	J 0.26 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG224928	SW3540C	19-MAR-18	16-MAR-18	100 %	1 %	N/A
MBLANK	WG224935	SW3540C	19-MAR-18	16-MAR-18	100 %	1 %	N/A

Quality Control Report

Laboratory Control Sample Summary Report

Chromium, Hexavalent

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG225318-2	LCS	WG225318	22-MAR-18	21-MAR-18	mg/Kgdrywt	40	38.	94	80-120	
WG225319-2	LCS	WG225319	22-MAR-18	21-MAR-18	mg/Kgdrywt	40	36.	91	80-120	
WG225555-2	LCS	WG225555	27-MAR-18	26-MAR-18	mg/Kgdrywt	40	38.	95	80-120	

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG224928-2	LCS	WG224928	19-MAR-18	16-MAR-18	%	90	90.	100	90-110	
WG224935-2	LCS	WG224935	19-MAR-18	16-MAR-18	%	90	90.	100	90-110	

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG224928-4	SL2133-19	WG224928	19-MAR-18	%	78.	79.	0	20
WG224928-3	SL2133-18	WG224928	19-MAR-18	%	77.	80.	3	20

Quality Control Report

Matrix Spike Sample Summary Report

Chromium, Hexavalent

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG225319-4	MS	SL2133-19	WG225319	22-MAR-18	mg/Kgdrywt	1210.69	J 0.41	1200	99	75 - 125
WG225319-3	MS	SL2133-19	WG225319	22-MAR-18	mg/Kgdrywt	52.91	J 0.41	36.	68*	75 - 125

SW8270 SIM
POLYNUCLEAR AROMATIC HYDROCARBONS DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-20B-SB01-11	SL2133-1		43.7		50.0		54.5	
CHAAP-20B-SB05-4	SL2133-10		47.6		58.5		67.5	
CHAAP-20B-SB05-8	SL2133-11		31.1		43.2		52.0	
CHAAP-20B-SB06-4	SL2133-12		41.0		52.0		60.0	
CHAAP-20B-SB06-8	SL2133-13		23.9		39.4		46.4	
CHAAP-20B-SS01	SL2133-14		46.1		49.4		44.4	
CHAAP-20B-SS02	SL2133-15		44.3		46.2		45.0	
CHAAP-20B-SS03	SL2133-16		41.8		50.5		48.6	
CHAAP-20B-SS04	SL2133-17		58.0		56.0		44.2	
CHAAP-20B-SS05	SL2133-18		49.1		48.2		39.5	
CHAAP-20B-SS06	SL2133-19		45.2		48.4		45.2	
CHAAP-20B-SB01-4	SL2133-2		35.0		44.3		57.0	
CHAAP-20B-SS102	SL2133-21		47.6		50.5		42.9	
CHAAP-20B-SS104	SL2133-22		45.6		45.0		33.3	
CHAAP-20B-SB01-8	SL2133-3		44.2		49.1		56.0	
CHAAP-20B-SB02-4	SL2133-4		40.6		53.0		62.0	
CHAAP-20B-SB02-8	SL2133-5		46.6		53.0		62.0	
CHAAP-20B-SB03-4	SL2133-6		34.0		46.8		53.0	
CHAAP-20B-SB03-8	SL2133-7		29.8		41.2		55.5	
CHAAP-20B-SB04-4	SL2133-8		29.5		44.0		56.0	
CHAAP-20B-SB04-8	SL2133-9		36.1		44.6		56.0	
Method Blank Sample	WG225021-1		77.4		67.6		83.8	
Laboratory Control S	WG225021-2		91.3		66.6		66.2	
Method Blank Sample	WG225022-1		66.9		62.5		63.3	
Laboratory Control S	WG225022-2		106.		64.0		67.6	
Matrix Spike	WG225022-3		75.4		59.9		63.8	
Matrix Spike Duplica	WG225022-4		67.8		57.0		59.3	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	19-125
FLO	FLUORENE-D10	20-125
PYR	PYRENE-D10	31-128

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
CHAAP-20B-EB-031518	SL2133-20		84.4		78.5		95.8	
Method Blank Sample	WG225023-1		82.6		78.7		106.	
Laboratory Control S	WG225023-2		86.8		83.6		86.8	

		QC Limits
FLO	FLUORENE-D10	29-120
PYR	PYRENE-D10	53-166
2MN	2-METHYLNAPHTHALENE-D10	43-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8029.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225021-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 13:18

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225021-2	N8030.D	03/20/18	13:50
CHAAP-20B-SB01-11	SL2133-1	N8042.D	03/20/18	20:11
CHAAP-20B-SB01-4	SL2133-2	N8043.D	03/20/18	20:43
CHAAP-20B-SB01-8	SL2133-3	N8044.D	03/20/18	21:16
CHAAP-20B-SB02-4	SL2133-4	N8064.D	03/21/18	17:58

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8058.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225022-1
Date Extracted : 19-MAR-18
Date Analyzed : 21-MAR-18
Time Analyzed : 14:49

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225022-2	N8059.D	03/21/18	15:20
CHAAP-20B-SB02-8	SL2133-5	N8067.D	03/21/18	19:35
CHAAP-20B-SB03-4	SL2133-6	N8068.D	03/21/18	20:08
CHAAP-20B-SB03-8	SL2133-7	N8069.D	03/21/18	20:40
CHAAP-20B-SB04-4	SL2133-8	N8070.D	03/21/18	21:12
CHAAP-20B-SB04-8	SL2133-9	N8071.D	03/21/18	21:45
CHAAP-20B-SB05-4	SL2133-10	N8084.D	03/22/18	10:27
CHAAP-20B-SB05-8	SL2133-11	N8085.D	03/22/18	10:58
CHAAP-20B-SB06-4	SL2133-12	N8086.D	03/22/18	11:30
CHAAP-20B-SB06-8	SL2133-13	N8087.D	03/22/18	12:01
CHAAP-20B-SS01	SL2133-14	N8088.D	03/22/18	12:33
CHAAP-20B-SS02	SL2133-15	N8089.D	03/22/18	13:05
CHAAP-20B-SS03	SL2133-16	N8090.D	03/22/18	13:37
CHAAP-20B-SS04	SL2133-17	N8091.D	03/22/18	14:09
CHAAP-20B-SS05	SL2133-18	N8092.D	03/22/18	14:40
CHAAP-20B-SS06	SL2133-19	N8093.D	03/22/18	15:12
Matrix Spike	WG225022-3	N8094.D	03/22/18	15:44
Matrix Spike Duplica	WG225022-4	N8095.D	03/22/18	16:16
CHAAP-20B-SS102	SL2133-21	N8096.D	03/22/18	16:48
CHAAP-20B-SS104	SL2133-22	N8097.D	03/22/18	17:20

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : N8025.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SL2133
Lab Sample ID : WG225023-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 11:11

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225023-2	N8026.D	03/20/18	11:44
CHAAP-20B-EB-031518	SL2133-20	N8028.D	03/20/18	12:47

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND493.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 16-MAR-18
Time Analyzed : 11:43

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	43.5		
68	Less than 2.0% of mass 69	0.6	1.66	1
69	Less than 100.0% of mass 198	37.5		
70	Less than 2.0% of mass 69	0.2	0.44	1
127	40.0 - 60.0% of mass 198	55.9		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.1		
275	10.0 - 30.0% of mass 198	24.3		
365	1.0 - 100.0% of mass 198	3.0		
441	0.0 - 100.0% of mass 443	11.0	76.73	2
442	40.0 - 100.0% of mass 198	79.3		
443	17.0 - 23.0% of mass 442	14.4	18.13	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG224895-4	N7968.D	03/16/18	11:59
Initial Calibration	WG224895-2	N7969.D	03/16/18	12:30
Initial Calibration	WG224895-3	N7970.D	03/16/18	13:03
Initial Calibration	WG224895-5	N7971.D	03/16/18	13:34
Initial Calibration	WG224895-6	N7972.D	03/16/18	14:06
Initial Calibration	WG224895-7	N7973.D	03/16/18	14:38
Independent Source	WG224895-8	N7974.D	03/16/18	15:10

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND495.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 20-MAR-18
Time Analyzed : 10:23

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	41.0		
68	Less than 2.0% of mass 69	0.5	1.35	1
69	Less than 100.0% of mass 198	37.5		
70	Less than 2.0% of mass 69	0.1	0.21	1
127	40.0 - 60.0% of mass 198	53.9		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.7		
275	10.0 - 30.0% of mass 198	22.0		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	11.4	80.16	2
442	40.0 - 100.0% of mass 198	77.9		
443	17.0 - 23.0% of mass 442	14.2	18.21	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225084-2	N8024.D	03/20/18	10:39
Method Blank Sample	WG225023-1	N8025.D	03/20/18	11:11
Laboratory Control S	WG225023-2	N8026.D	03/20/18	11:44
CHAAP-20B-EB-031518	SL2133-20	N8028.D	03/20/18	12:47
Method Blank Sample	WG225021-1	N8029.D	03/20/18	13:18
Laboratory Control S	WG225021-2	N8030.D	03/20/18	13:50
CHAAP-20B-SB01-11	SL2133-1	N8042.D	03/20/18	20:11
CHAAP-20B-SB01-4	SL2133-2	N8043.D	03/20/18	20:43
CHAAP-20B-SB01-8	SL2133-3	N8044.D	03/20/18	21:16
Continuing Calibrati	WG225084-3	N8045.D	03/20/18	21:48

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND496.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 21-MAR-18
Time Analyzed : 10:41

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	31.2		
68	Less than 2.0% of mass 69	0.6	1.70	1
69	Less than 100.0% of mass 198	37.0		
70	Less than 2.0% of mass 69	0.2	0.61	1
127	40.0 - 60.0% of mass 198	57.5		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.1		
275	10.0 - 30.0% of mass 198	22.0		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	12.1	72.78	2
442	40.0 - 100.0% of mass 198	87.2		
443	17.0 - 23.0% of mass 442	16.6	19.00	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG225136-4	N8051.D	03/21/18	10:57
Initial Calibration	WG225136-2	N8052.D	03/21/18	11:30
Initial Calibration	WG225136-3	N8053.D	03/21/18	12:02
Initial Calibration	WG225136-5	N8054.D	03/21/18	12:34
Initial Calibration	WG225136-6	N8055.D	03/21/18	13:06
Initial Calibration	WG225136-7	N8056.D	03/21/18	13:37
Independent Source	WG225136-8	N8057.D	03/21/18	14:08
Method Blank Sample	WG225022-1	N8058.D	03/21/18	14:49
Laboratory Control S	WG225022-2	N8059.D	03/21/18	15:20
CHAAP-20B-SB02-4	SL2133-4	N8064.D	03/21/18	17:58
CHAAP-20B-SB02-8	SL2133-5	N8067.D	03/21/18	19:35
CHAAP-20B-SB03-4	SL2133-6	N8068.D	03/21/18	20:08
CHAAP-20B-SB03-8	SL2133-7	N8069.D	03/21/18	20:40
CHAAP-20B-SB04-4	SL2133-8	N8070.D	03/21/18	21:12
CHAAP-20B-SB04-8	SL2133-9	N8071.D	03/21/18	21:45
Continuing Calibrati	WG225136-9	N8072.D	03/21/18	22:17

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : ND497.D
Instrument ID : GCMS-N

SDG : SL2133
Date Analyzed : 22-MAR-18
Time Analyzed : 09:38

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	33.2		
68	Less than 2.0% of mass 69	0.7	1.73	1
69	Less than 100.0% of mass 198	39.5		
70	Less than 2.0% of mass 69	0.2	0.42	1
127	40.0 - 60.0% of mass 198	59.3		
197	Less than 1.0% of mass 198	0.4		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.8		
275	10.0 - 30.0% of mass 198	21.0		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	11.7	77.14	2
442	40.0 - 100.0% of mass 198	80.7		
443	17.0 - 23.0% of mass 442	15.1	18.74	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225233-2	N8083.D	03/22/18	09:54
CHAAP-20B-SB05-4	SL2133-10	N8084.D	03/22/18	10:27
CHAAP-20B-SB05-8	SL2133-11	N8085.D	03/22/18	10:58
CHAAP-20B-SB06-4	SL2133-12	N8086.D	03/22/18	11:30
CHAAP-20B-SB06-8	SL2133-13	N8087.D	03/22/18	12:01
CHAAP-20B-SS01	SL2133-14	N8088.D	03/22/18	12:33
CHAAP-20B-SS02	SL2133-15	N8089.D	03/22/18	13:05
CHAAP-20B-SS03	SL2133-16	N8090.D	03/22/18	13:37
CHAAP-20B-SS04	SL2133-17	N8091.D	03/22/18	14:09
CHAAP-20B-SS05	SL2133-18	N8092.D	03/22/18	14:40
CHAAP-20B-SS06	SL2133-19	N8093.D	03/22/18	15:12
Matrix Spike	WG225022-3	N8094.D	03/22/18	15:44
Matrix Spike Duplica	WG225022-4	N8095.D	03/22/18	16:16
CHAAP-20B-SS102	SL2133-21	N8096.D	03/22/18	16:48
CHAAP-20B-SS104	SL2133-22	N8097.D	03/22/18	17:20
Continuing Calibrati	WG225233-3	N8104.D	03/22/18	21:06

Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG224895-4
Lab File ID : N7968.D

SDG: SL2133
Analytical Date: 03/16/18 11:59
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	49167		6.98		153512		8.63		60609		10.95	
	Upper Limit	98334		7.14		307024		8.79		121218		11.12	
	Lower Limit	24583.5		6.81		76756		8.46		30304.5		10.79	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG225084-2	49920		6.94		161126		8.59		67002		10.93	
Method Blank Sample	WG225023-1	51696		6.94		175691		8.61		78341		10.93	
Laboratory Control S	WG225023-2	51394		6.94		177263		8.59		77880		10.93	
CHAAP-20B-EB-0315	SL2133-20	55126		6.94		186411		8.60		83959		10.93	
Method Blank Sample	WG225021-1	55702		6.94		188335		8.60		83863		10.93	
Laboratory Control S	WG225021-2	58278		6.94		197151		8.59		90454		10.93	
CHAAP-20B-SB01-11	SL2133-1	55079		6.94		188300		8.59		84634		10.93	
CHAAP-20B-SB01-4	SL2133-2	56125		6.94		189359		8.59		84641		10.93	
CHAAP-20B-SB01-8	SL2133-3	54564		6.94		180700		8.59		76713		10.93	
Continuing Calibrati	WG225084-3	53555		6.94		178719		8.59		72827		10.92	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG224895-4
Lab File ID : N7968.D

SDG: SL2133
Analytical Date: 03/16/18 11:59
Instrument ID: GCMS-N

		PHENANTHRENE-D10				CHRYSENE-D12				PERYLENE-D12			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	88968		12.94		42741		16.62		36674		19.51	
	Upper Limit	177936		13.11		85482		16.78		73348		19.67	
	Lower Limit	44484		12.78		21370.5		16.45		18337		19.34	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG225084-2	93335		12.91		31368		16.55		23549		19.42	
Method Blank Sample	WG225023-1	114343		12.92		38046		16.57		23785		19.42	
Laboratory Control S	WG225023-2	119760		12.91		56639		16.55		34854		19.41	
CHAAP-20B-EB-0315	SL2133-20	124654		12.91		51896		16.57		30026		19.42	
Method Blank Sample	WG225021-1	123576		12.91		48547		16.55		31056		19.41	
Laboratory Control S	WG225021-2	139517		12.91		74011		16.55		48980		19.40	
CHAAP-20B-SB01-11	SL2133-1	130859		12.91		67866		16.56		43767		19.40	
CHAAP-20B-SB01-4	SL2133-2	126572		12.91		61176		16.56		38904		19.40	
CHAAP-20B-SB01-8	SL2133-3	105612		12.91		49648		16.56		32246		19.41	
Continuing Calibrati	WG225084-3	101327		12.90		52131		16.55		36096		19.41	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225136-4
Lab File ID : N8051.D

SDG: SL2133
Analytical Date: 03/21/18 10:57
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	67704		6.94		211188		8.58		90519		10.92	
	Upper Limit	135408		7.11		422376		8.75		181038		11.08	
	Lower Limit	33852		6.77		105594		8.41		45259.5		10.75	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG225022-1	60364		6.94		190258		8.60		82987		10.93	
Laboratory Control S	WG225022-2	59547		6.94		193810		8.59		85463		10.92	
CHAAP-20B-SB02-4	SL2133-4	59804		6.94		193137		8.59		87461		10.92	
CHAAP-20B-SB02-8	SL2133-5	55453		6.94		174349		8.59		74734		10.92	
CHAAP-20B-SB03-4	SL2133-6	61372		6.94		196296		8.59		84049		10.92	
CHAAP-20B-SB03-8	SL2133-7	58505		6.94		186350		8.59		81557		10.92	
CHAAP-20B-SB04-4	SL2133-8	63413		6.93		200620		8.59		87177		10.92	
CHAAP-20B-SB04-8	SL2133-9	60320		6.94		190665		8.59		84098		10.92	
Continuing Calibrati	WG225136-9	63632		6.93		206220		8.59		86741		10.92	
Continuing Calibrati	WG225233-2	76438		6.93		240654		8.58		104258		10.92	
CHAAP-20B-SB05-4	SL2133-10	64636		6.93		201000		8.59		86066		10.92	
CHAAP-20B-SB05-8	SL2133-11	64669		6.93		197112		8.59		84536		10.92	
CHAAP-20B-SB06-4	SL2133-12	66038		6.93		204933		8.59		90361		10.92	
CHAAP-20B-SB06-8	SL2133-13	66857		6.93		211843		8.59		92213		10.92	
CHAAP-20B-SS01	SL2133-14	63726		6.93		200424		8.59		88914		10.92	
CHAAP-20B-SS02	SL2133-15	66348		6.93		206429		8.59		93504		10.90	
CHAAP-20B-SS03	SL2133-16	61206		6.93		193802		8.59		84232		10.90	
CHAAP-20B-SS04	SL2133-17	60962		6.93		195440		8.58		87371		10.90	
CHAAP-20B-SS05	SL2133-18	63921		6.93		201950		8.58		87846		10.90	
CHAAP-20B-SS06	SL2133-19	63451		6.93		204859		8.58		90085		10.90	
Matrix Spike	WG225022-3	62605		6.93		195309		8.58		83109		10.90	
Matrix Spike Duplica	WG225022-4	63787		6.93		202857		8.58		87049		10.90	
CHAAP-20B-SS102	SL2133-21	60939		6.93		198782		8.58		85667		10.90	
CHAAP-20B-SS104	SL2133-22	59799		6.93		191898		8.59		83201		10.90	
Continuing Calibrati	WG225233-3	77265		6.93		245997		8.58		108740		10.90	

Area Upper Limit = +100% of internal standard area
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* Values outside of QC limits.

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Katahdin
ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225136-4
Lab File ID : N8051.D

SDG: SL2133
Analytical Date: 03/21/18 10:57
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	128283	12.90	55605	16.55	32614	19.42
	Upper Limit	256566	13.06	111210	16.72	65228	19.59
	Lower Limit	64141.5	12.73	27802.5	16.39	16307	19.26
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG225022-1	118337	12.91	48310	16.57	27460	19.43
Laboratory Control S	WG225022-2	120851	12.91	51265	16.56	25958	19.42
CHAAP-20B-SB02-4	SL2133-4	130640	12.91	49720	16.56	23245	19.42
CHAAP-20B-SB02-8	SL2133-5	104840	12.91	36758	16.57	17648	19.42
CHAAP-20B-SB03-4	SL2133-6	123340	12.91	46522	16.56	22828	19.42
CHAAP-20B-SB03-8	SL2133-7	114465	12.91	39141	16.57	18098	19.42
CHAAP-20B-SB04-4	SL2133-8	127426	12.91	43670	16.56	19991	19.43
CHAAP-20B-SB04-8	SL2133-9	119077	12.91	41783	16.57	20633	19.42
Continuing Calibrati	WG225136-9	129377	12.90	44618	16.55	20549	19.42
Continuing Calibrati	WG225233-2	145592	12.90	52808	16.54	33030	19.40
CHAAP-20B-SB05-4	SL2133-10	123177	12.90	41202	16.55	23440	19.40
CHAAP-20B-SB05-8	SL2133-11	119072	12.90	39534	16.55	23280	19.39
CHAAP-20B-SB06-4	SL2133-12	129579	12.90	45579	16.55	27388	19.39
CHAAP-20B-SB06-8	SL2133-13	130737	12.90	44692	16.55	26440	19.39
CHAAP-20B-SS01	SL2133-14	126117	12.90	39255	16.55	22926	19.39
CHAAP-20B-SS02	SL2133-15	133581	12.90	42453	16.54	24625	19.39
CHAAP-20B-SS03	SL2133-16	122311	12.90	40294	16.54	25945	19.39
CHAAP-20B-SS04	SL2133-17	127033	12.90	40731	16.54	25461	19.38
CHAAP-20B-SS05	SL2133-18	120101	12.90	37097	16.54	21737	19.39
CHAAP-20B-SS06	SL2133-19	127936	12.90	41249	16.54	26285	19.39
Matrix Spike	WG225022-3	117226	12.88	39814	16.54	24422	19.38
Matrix Spike Duplica	WG225022-4	126496	12.88	44520	16.54	26944	19.38
CHAAP-20B-SS102	SL2133-21	124798	12.90	40173	16.54	25023	19.39
CHAAP-20B-SS104	SL2133-22	120030	12.90	43844	16.54	27587	19.38
Continuing Calibrati	WG225233-3	160431	12.88	62817	16.54	38929	19.38

Area Upper Limit = +100% of internal standard area
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Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-1
Client ID: CHAAP-20B-SB01-11
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8042.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	26.	3.4	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	26.	2.9	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	26.	2.0	13.
Fluorene	U	13	ug/Kgdrywt	1	20	26.	4.2	13.
Phenanthrene	J	3.1	ug/Kgdrywt	1	20	26.	2.4	13.
Anthracene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Fluoranthene	J	3.4	ug/Kgdrywt	1	20	26.	2.4	13.
Pyrene	J	3.2	ug/Kgdrywt	1	20	26.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Chrysene	U	13	ug/Kgdrywt	1	20	26.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	3.1	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	26.	4.0	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	26.	4.3	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	26.	2.6	13.
2-Methylnaphthalene-D10		43.7	%					
Fluorene-D10		50.0	%					
Pyrene-D10		54.5	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8042.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8042.D
Lab Smp Id: SL2133-1 Client Smp ID: CHAAP-20B-SB01-11
Inj Date : 20-MAR-2018 20:11 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-1
Misc Info : WG225084,WG225021,WG224895-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

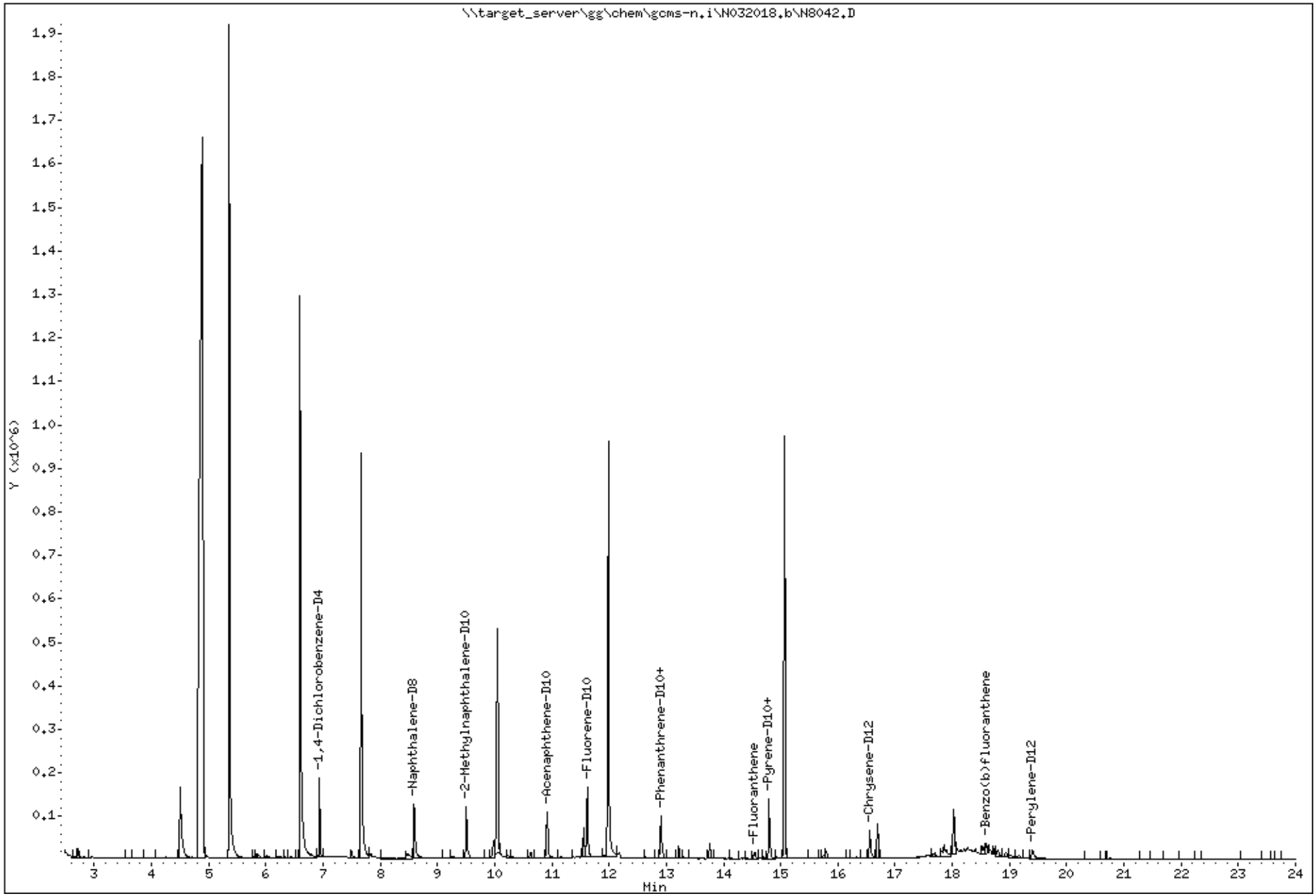
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03010	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	23.663	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	55079	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	188300	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.107)	96862	0.87436	38.0	
*	47 Acenaphthene-D10	164	10.926	10.926	(1.000)	84634	0.80000		
$	55 Fluorene-D10	174	11.623	11.623	(1.064)	104421	1.00164	43.6	
*	65 Phenanthrene-D10	188	12.906	12.906	(1.000)	130859	0.80000		
	66 Phenanthrene	178	12.938	12.927	(1.002)	14389	0.07117	3.10(a)	
	70 Fluoranthene	202	14.537	14.527	(1.126)	15087	0.07938	3.45(a)	
$	71 Pyrene-D10	212	14.799	14.799	(0.894)	130601	1.08963	47.4	
	72 Pyrene	202	14.818	14.827	(0.895)	15340	0.07348	3.20(a)	
*	76 Chrysene-D12	240	16.563	16.563	(1.000)	67866	0.80000		
*	83 Perylene-D12	264	19.400	19.422	(1.000)	43767	0.80000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8042.D
Date : 20-MAR-2018 20:11
Client ID: CHAAP-20B-SB01-11 Instrument: gcms-n.i
Sample Info: SL2133-1



Katahdin Analytical Services 1000022

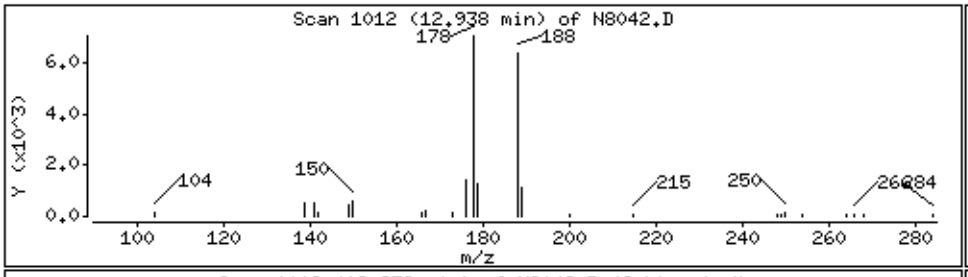
Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8042.D

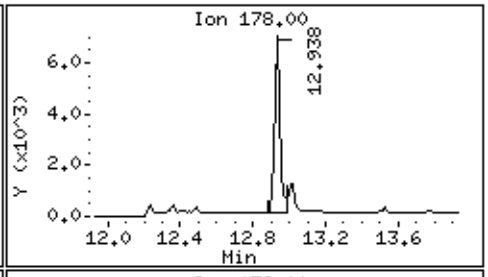
Date : 20-MAR-2018 20:11

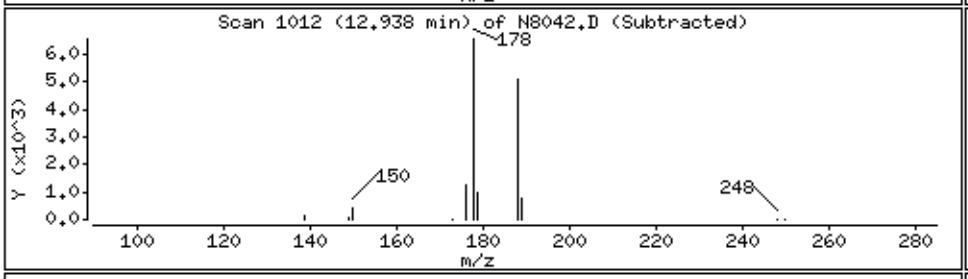
Client ID: CHAAP-20B-SB01-11 Instrument: gcms-n.i

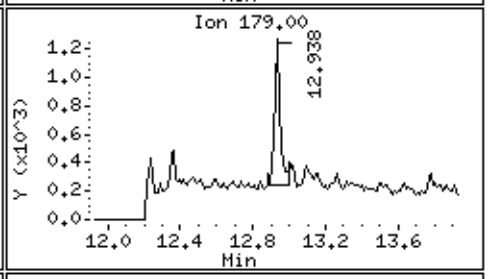
Sample Info: SL2133-1

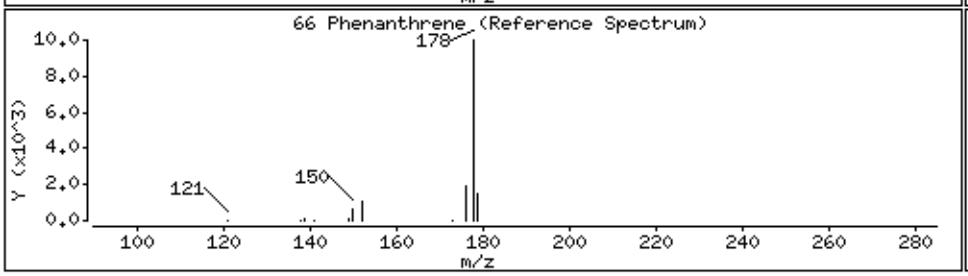
66 Phenanthrene Concentration: 3.10 ug/Kgdrywt

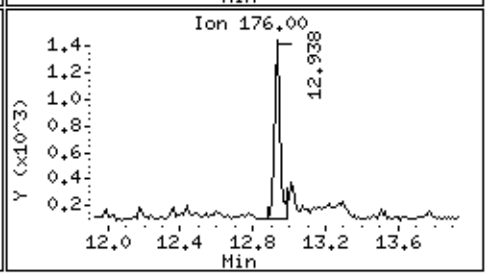




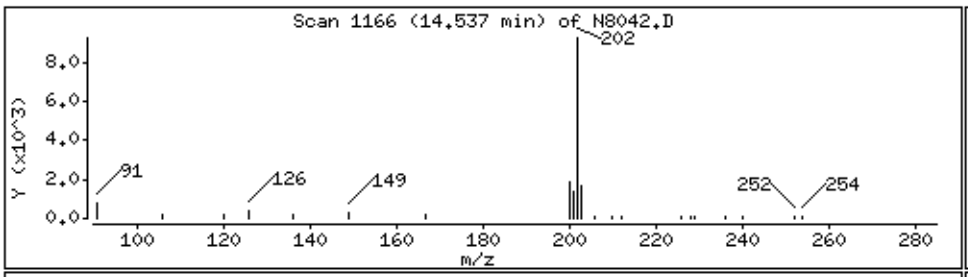


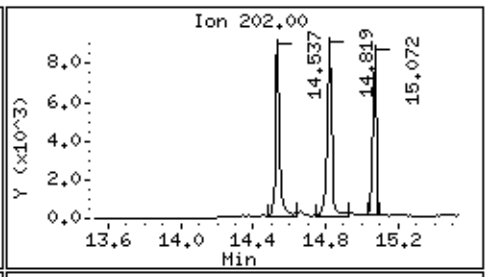


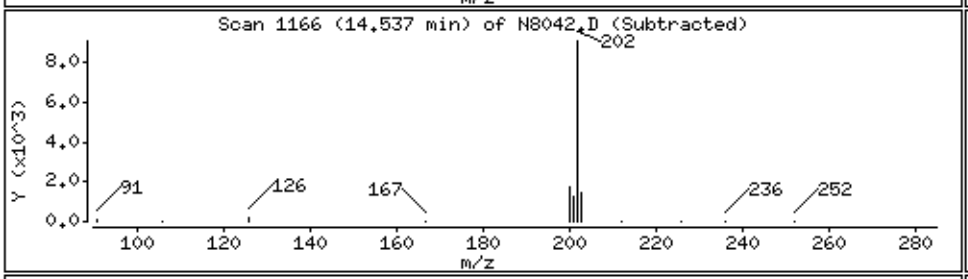


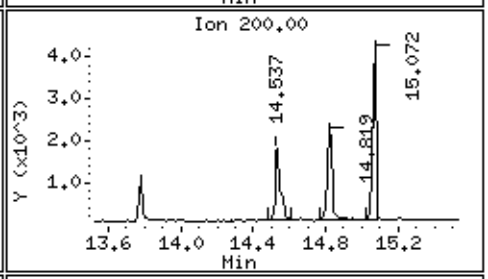


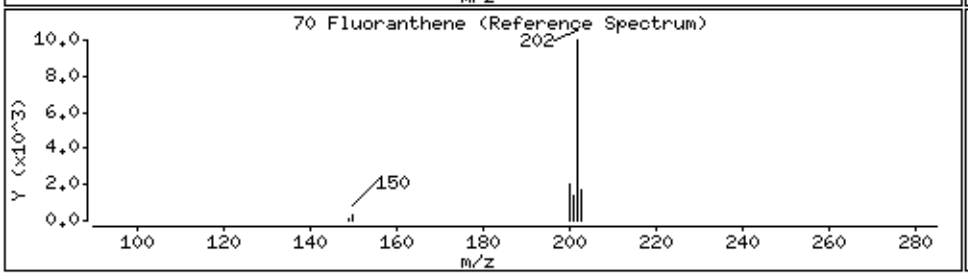
70 Fluoranthene Concentration: 3.45 ug/Kgdrywt

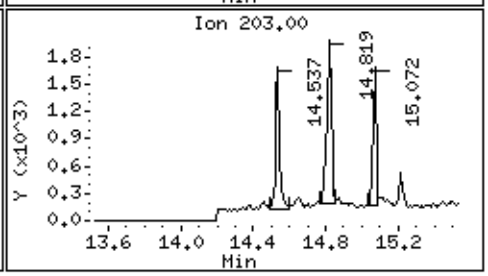












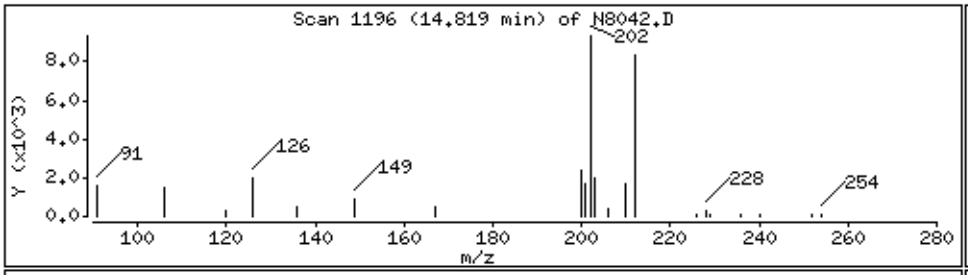
Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8042.D

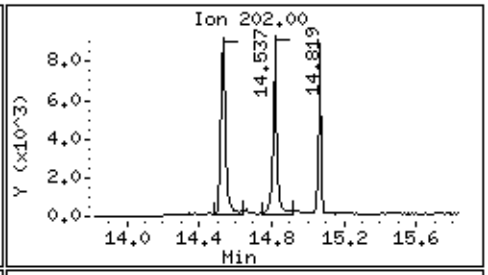
Date : 20-MAR-2018 20:11

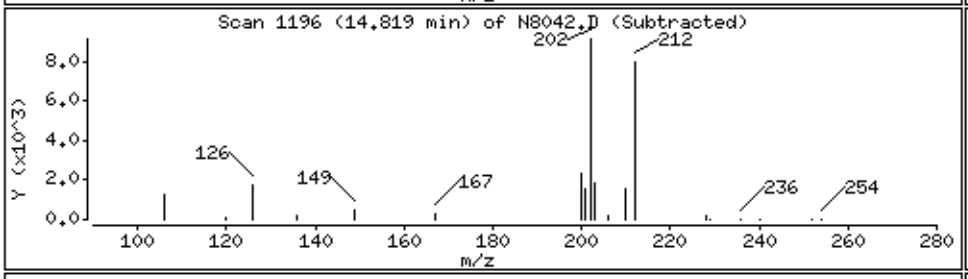
Client ID: CHAAP-20B-SB01-11 Instrument: gcms-n.i

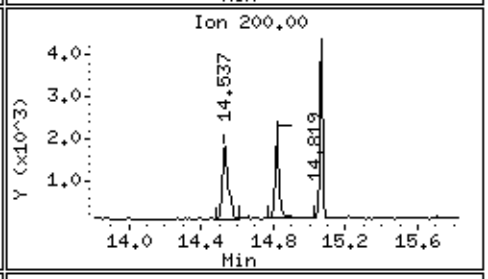
Sample Info: SL2133-1

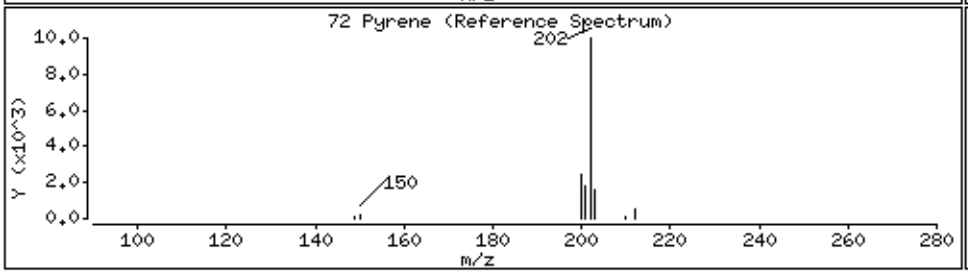
72 Pyrene Concentration: 3.20 ug/Kgdrywt

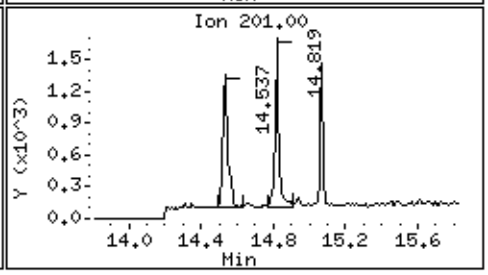




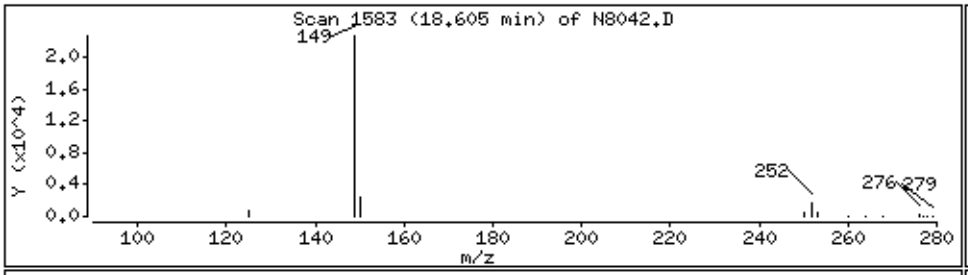


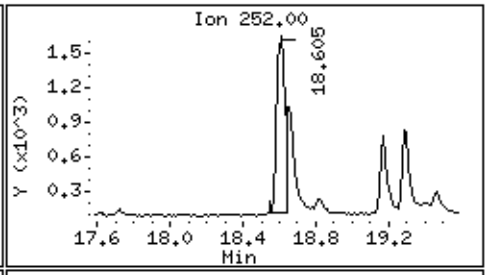


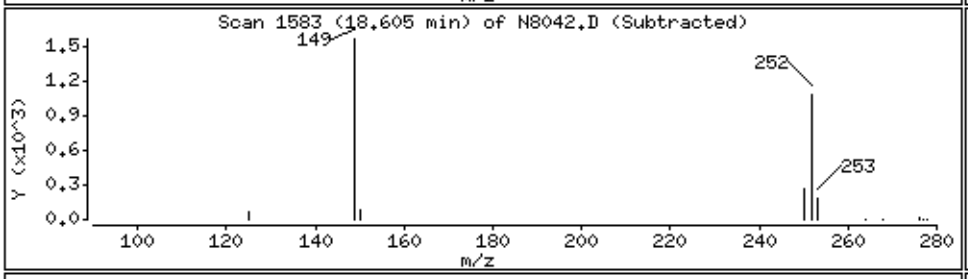


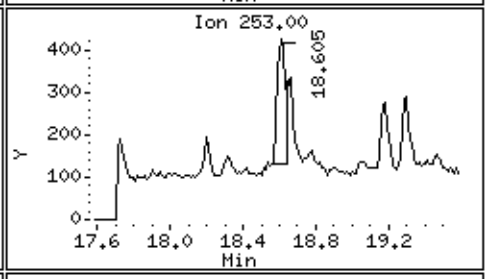


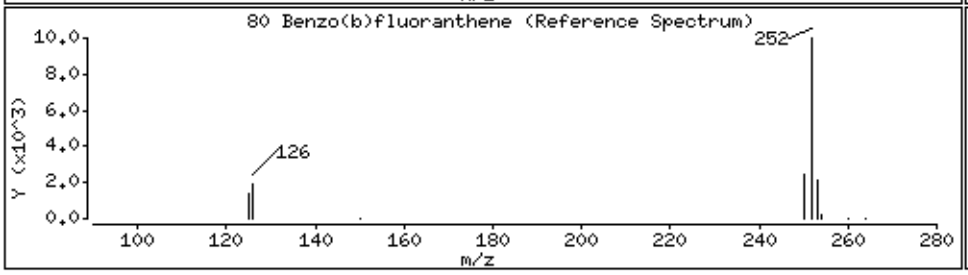
80 Benzo(b)fluoranthene Concentration: 2.68 ug/Kgdrywt

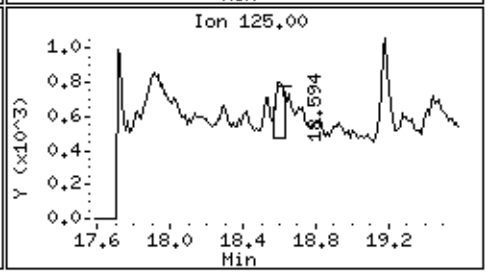












Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-2
Client ID: CHAAP-20B-SB01-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8043.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 80.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.9	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Fluoranthene	J	2.4	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	J	2.6	ug/Kgdrywt	1	20	24.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		35.0	%					
Fluorene-D10		44.3	%					
Pyrene-D10		57.0	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8043.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8043.D
Lab Smp Id: SL2133-2 Client Smp ID: CHAAP-20B-SB01-4
Inj Date : 20-MAR-2018 20:43 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-2
Misc Info : WG225084,WG225021,WG224895-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

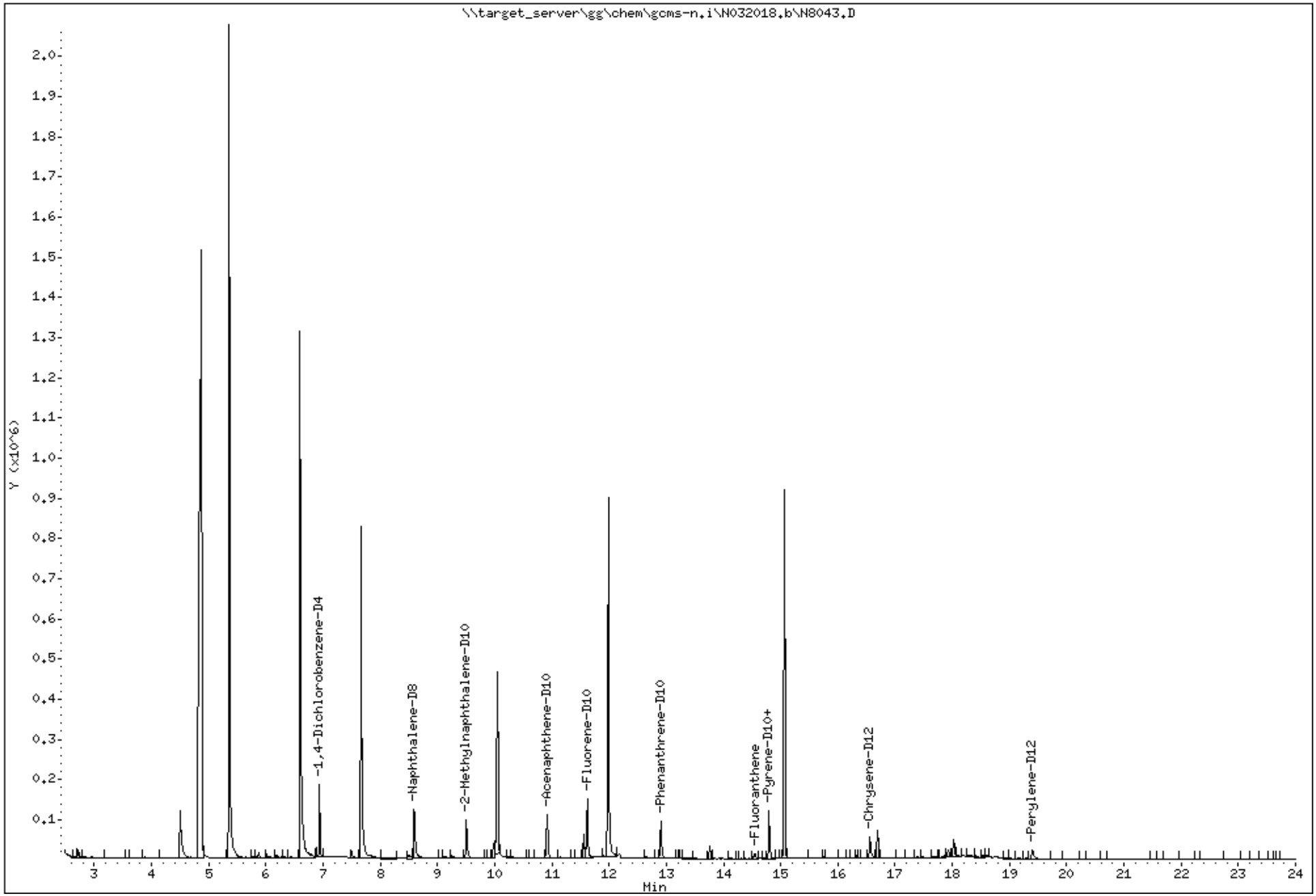
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03100	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	20.498	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	56125	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	189359	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.107)	78139	0.70140	28.4	
*	47 Acenaphthene-D10	164	10.926	10.926	(1.000)	84641	0.80000		
$	55 Fluorene-D10	174	11.623	11.623	(1.064)	92414	0.88639	36.0	
*	65 Phenanthrene-D10	188	12.906	12.906	(1.000)	126572	0.80000		
	70 Fluoranthene	202	14.537	14.527	(1.126)	10793	0.05871	2.38(a)	
$	71 Pyrene-D10	212	14.799	14.799	(0.894)	123059	1.13898	46.2	
	72 Pyrene	202	14.818	14.827	(0.895)	12289	0.06530	2.65(a)	
*	76 Chrysene-D12	240	16.563	16.563	(1.000)	61176	0.80000		
*	83 Perylene-D12	264	19.400	19.422	(1.000)	38904	0.80000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8043.D
Date : 20-MAR-2018 20:43
Client ID: CHAAP-20B-SB01-4 Instrument: gcms-n.i
Sample Info: SL2133-2



Katahdin Analytical Services 1000027

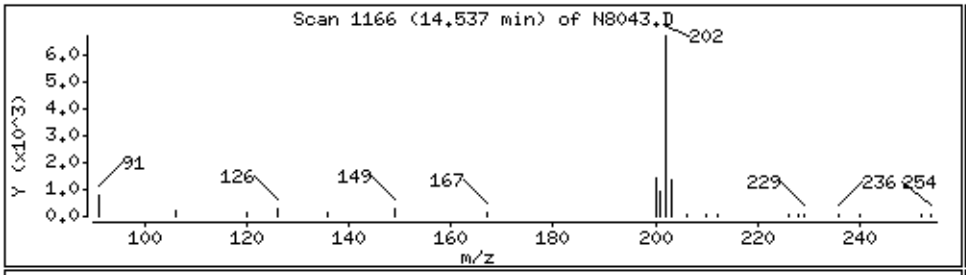
Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8043.D

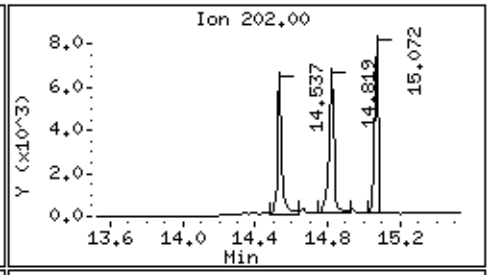
Date : 20-MAR-2018 20:43

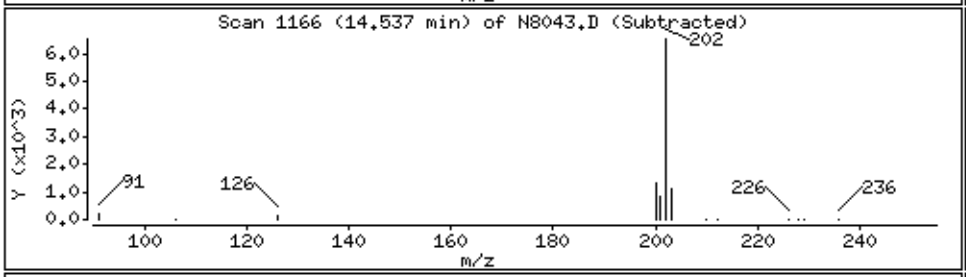
Client ID: CHAAP-20B-SB01-4 Instrument: gcms-n.i

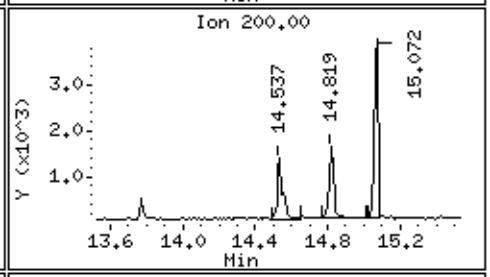
Sample Info: SL2133-2

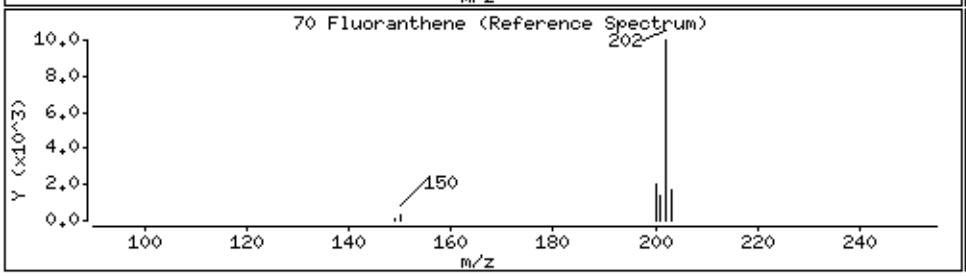
70 Fluoranthene Concentration: 2.38 ug/Kgdrywt

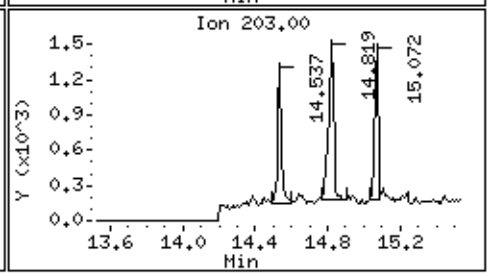




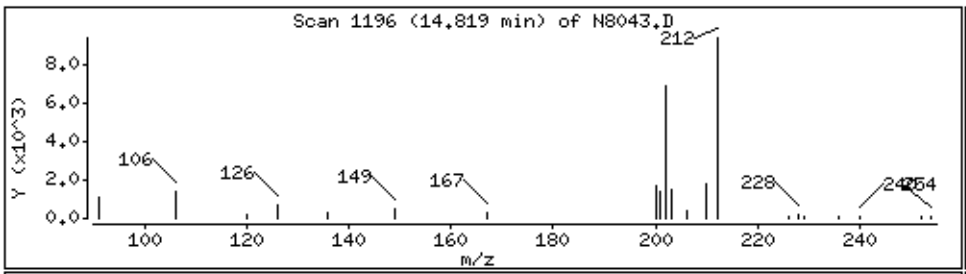


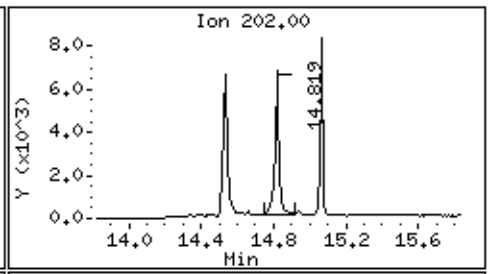


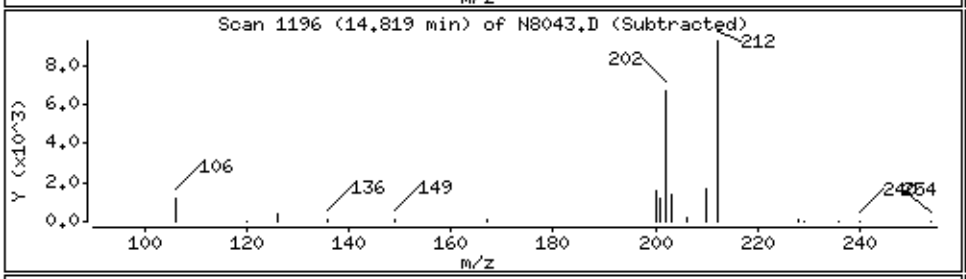


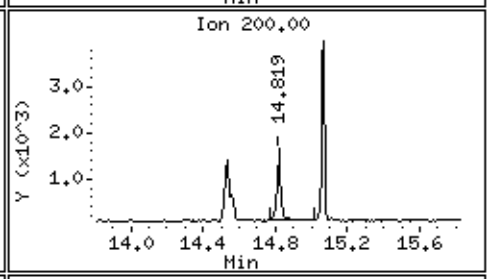


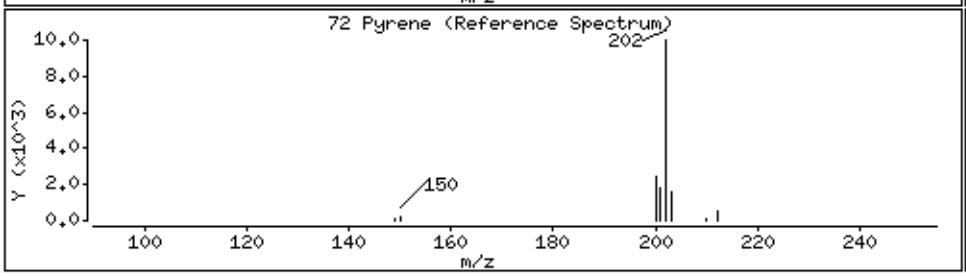
72 Pyrene Concentration: 2.65 ug/Kgdrywt

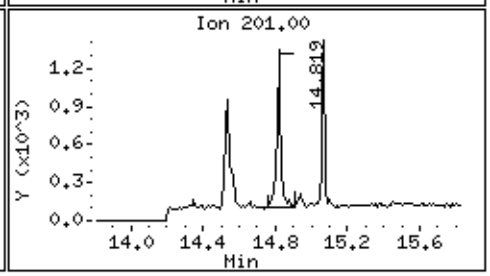












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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-3
Client ID: CHAAP-20B-SB01-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8044.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		44.2	%					
Fluorene-D10		49.1	%					
Pyrene-D10		56.0	%					

600 Technology Way
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Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8044.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8044.D
Lab Smp Id: SL2133-3 Client Smp ID: CHAAP-20B-SB01-8
Inj Date : 20-MAR-2018 21:16 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-3
Misc Info : WG225084,WG225021,WG224895-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

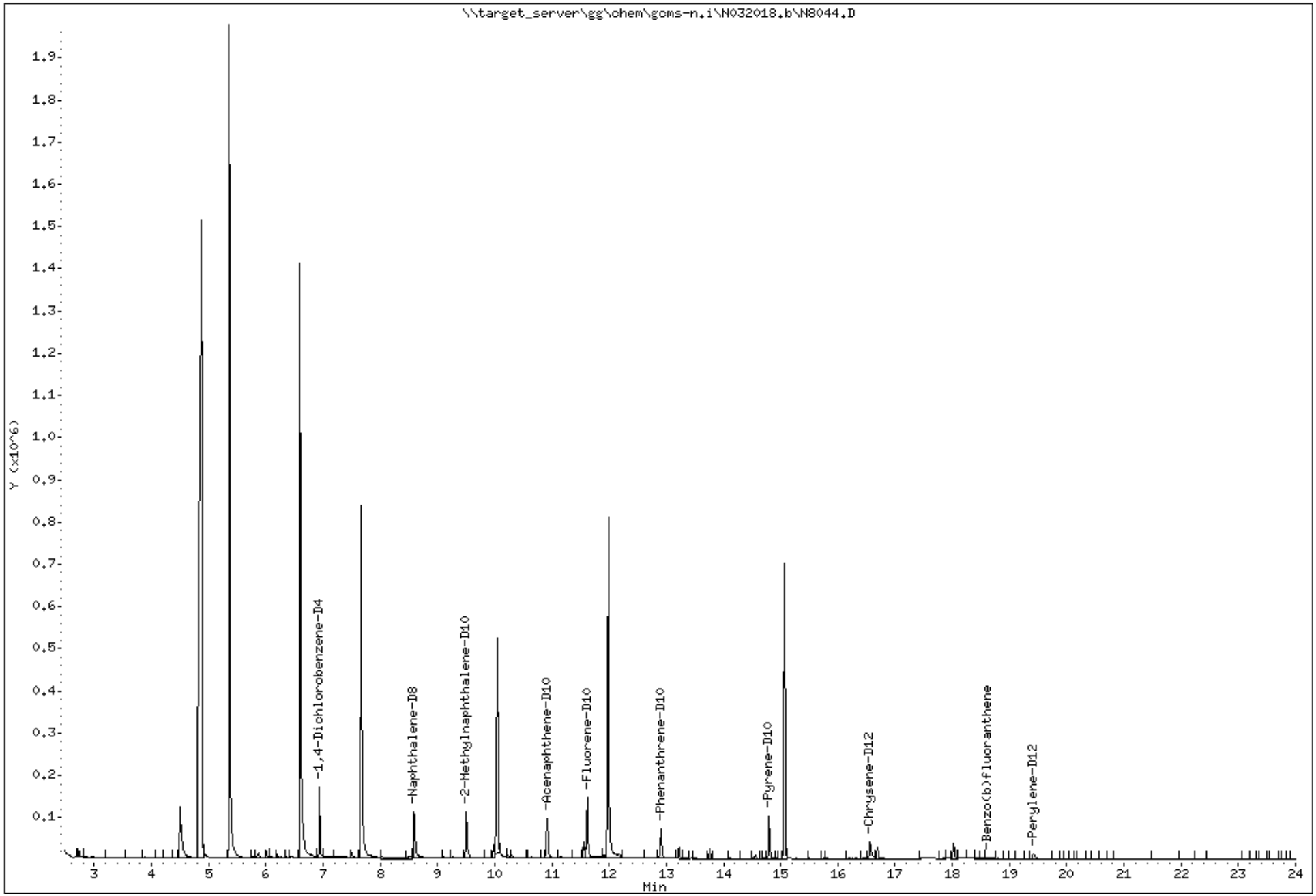
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03070	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	22.016	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	54564	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	180700	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.107)	94114	0.88528	37.0	
*	47 Acenaphthene-D10	164	10.926	10.926	(1.000)	76713	0.80000		
$	55 Fluorene-D10	174	11.623	11.623	(1.064)	92803	0.98211	41.0	
*	65 Phenanthrene-D10	188	12.906	12.906	(1.000)	105612	0.80000		
$	71 Pyrene-D10	212	14.799	14.799	(0.894)	98668	1.12528	47.0	
*	76 Chrysene-D12	240	16.563	16.563	(1.000)	49648	0.80000		
*	83 Perylene-D12	264	19.411	19.422	(1.000)	32246	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8044.D
Date : 20-MAR-2018 21:16
Client ID: CHAAP-20B-SB01-8 Instrument: gcms-n.i
Sample Info: SL2133-3



Katahdin Analytical Services 1000031

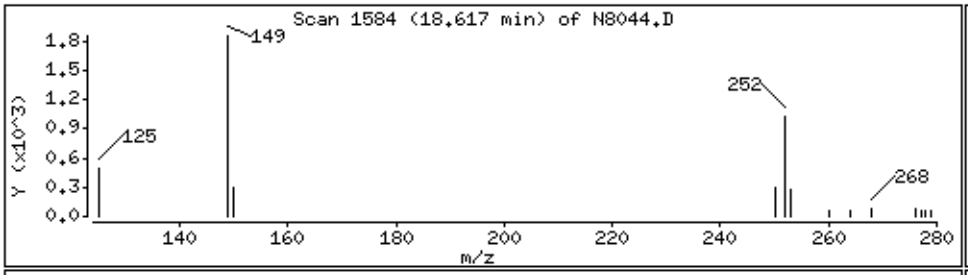
Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8044.D

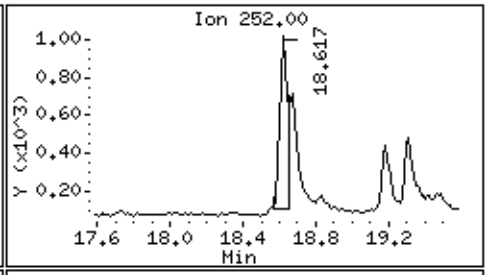
Date : 20-MAR-2018 21:16

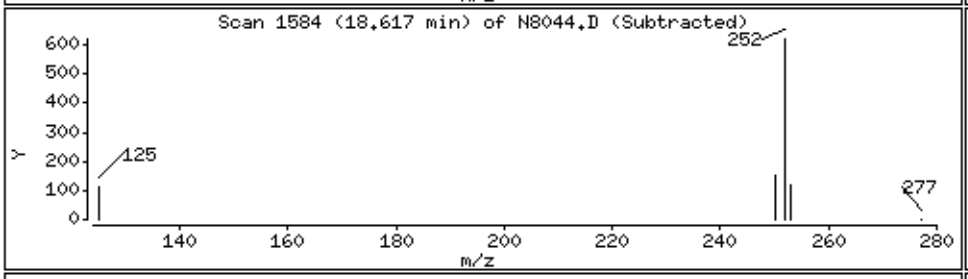
Client ID: CHAAP-20B-SB01-8 Instrument: gcms-n.i

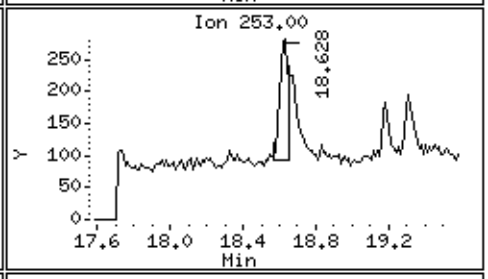
Sample Info: SL2133-3

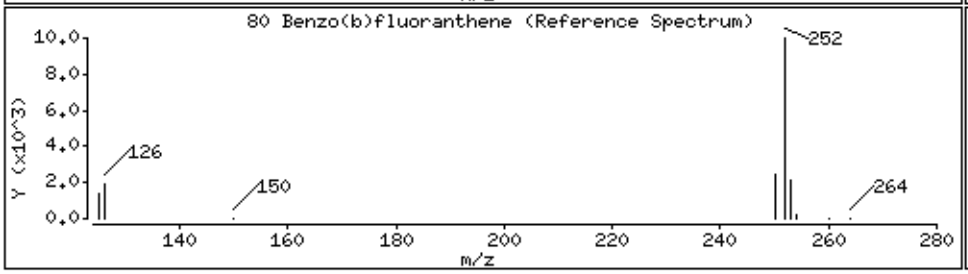
80 Benzo(b)fluoranthene Concentration: 2.00 ug/Kgdrywt

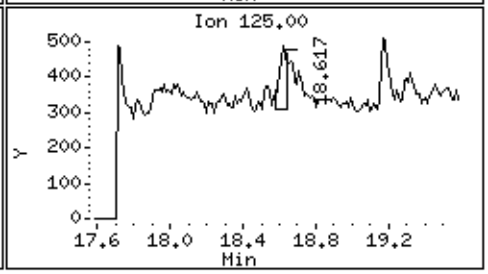












Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-4
Client ID: CHAAP-20B-SB02-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8064.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 81.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.1	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.6	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	24.	2.5	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.7	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		40.6	%					
Fluorene-D10		53.0	%					
Pyrene-D10		62.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8064.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8064.D
Lab Smp Id: SL2133-4 Client Smp ID: CHAAP-20B-SB02-4
Inj Date : 21-MAR-2018 17:58 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-4
Misc Info : WG225136,WG225021,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

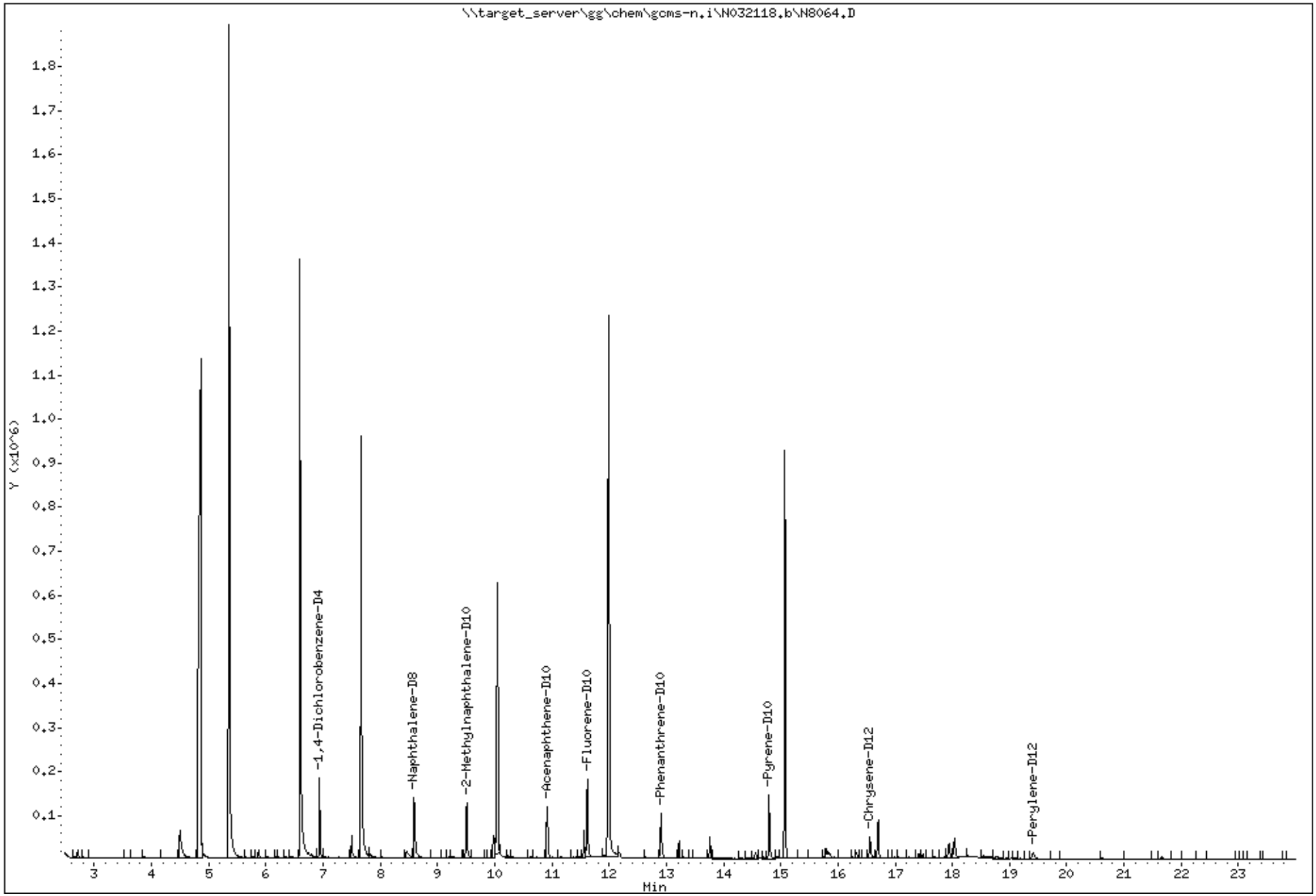
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03090	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	19.291	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	59804	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	193137	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	93893	0.81277	32.6	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	87461	0.80000		
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	113393	1.06028	42.5	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	130640	0.80000		
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	123399	1.23787	49.6	
*	76 Chrysene-D12	240	16.563	16.544	(1.000)	49720	0.80000		
*	83 Perylene-D12	264	19.421	19.400	(1.000)	23245	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8064.D
Date : 21-MAR-2018 17:58
Client ID: CHAAP-20B-SB02-4 Instrument: gcms-n.i
Sample Info: SL2133-4



Katahdin Analytical Services 1000035

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-5
Client ID: CHAAP-20B-SB02-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8067.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 74.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	26.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	26.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	26.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	26.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	26.	4.1	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	26.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	26.	1.5	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	2.3	13.
Pyrene	U	13	ug/Kgdrywt	1	20	26.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	26.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	3.1	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	26.	4.0	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	26.	4.2	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.3	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	26.	2.6	13.
2-Methylnaphthalene-D10		46.6	%					
Fluorene-D10		53.0	%					
Pyrene-D10		62.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8067.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8067.D
Lab Smp Id: SL2133-5 Client Smp ID: CHAAP-20B-SB02-8
Inj Date : 21-MAR-2018 19:35 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-5
Misc Info : WG225136,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

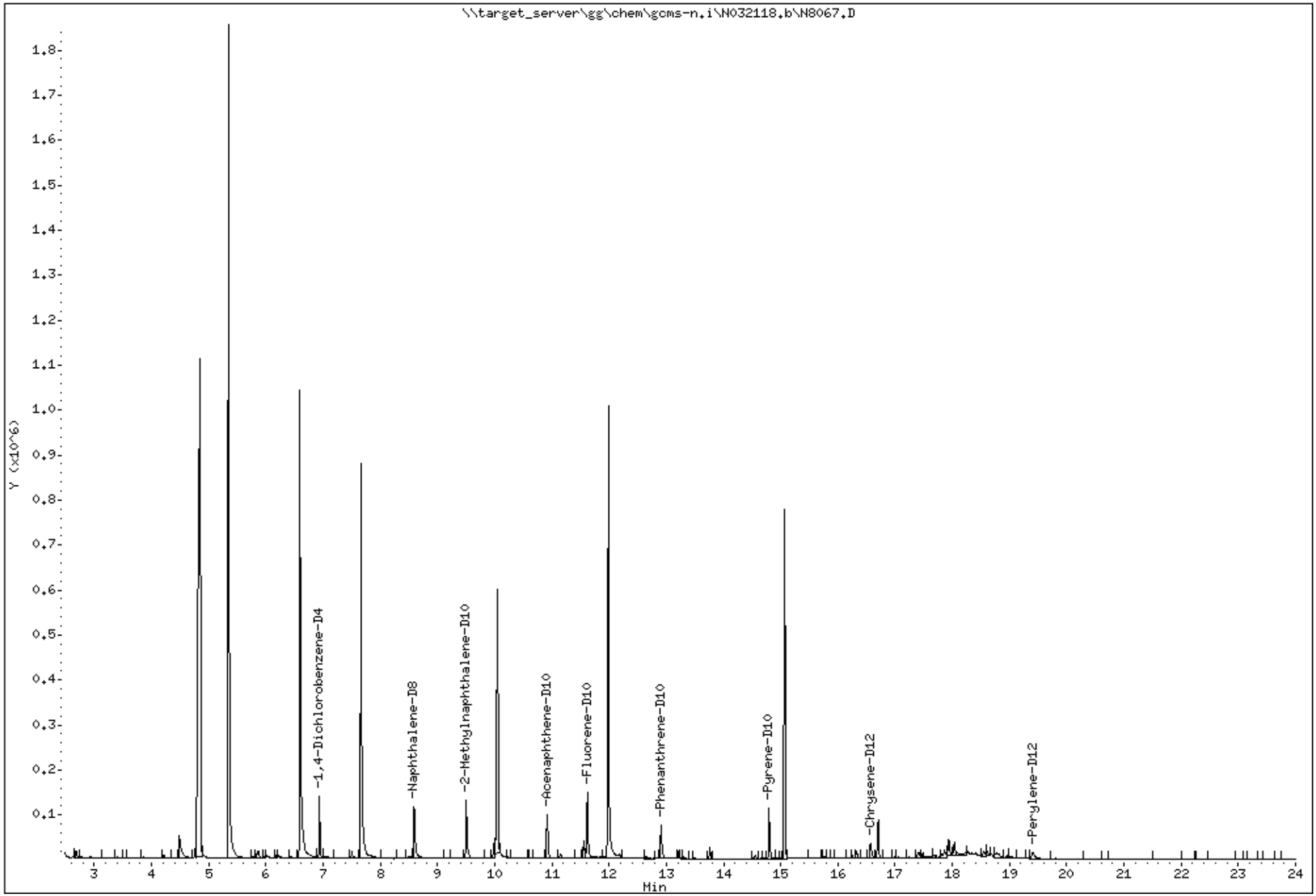
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03130	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	25.421	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	55453	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	174349	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	97186	0.93193	39.9	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	74734	0.80000		
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	96568	1.05673	45.3	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	104840	0.80000		
$	71 Pyrene-D10	212	14.799	14.790	(0.893)	91526	1.24190	53.2	
*	76 Chrysene-D12	240	16.573	16.544	(1.000)	36758	0.80000		
*	83 Perylene-D12	264	19.423	19.400	(1.000)	17648	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8067.D
Date : 21-MAR-2018 19:35
Client ID: CHAAP-20B-SB02-8 Instrument: gcms-n.i
Sample Info: SL2133-5



Katahdin Analytical Services 1000038

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-6
Client ID: CHAAP-20B-SB03-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8068.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.3	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		34.0	%					
Fluorene-D10		46.8	%					
Pyrene-D10		53.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8068.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8068.D
Lab Smp Id: SL2133-6 Client Smp ID: CHAAP-20B-SB03-4
Inj Date : 21-MAR-2018 20:08 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-6
Misc Info : WG225136,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

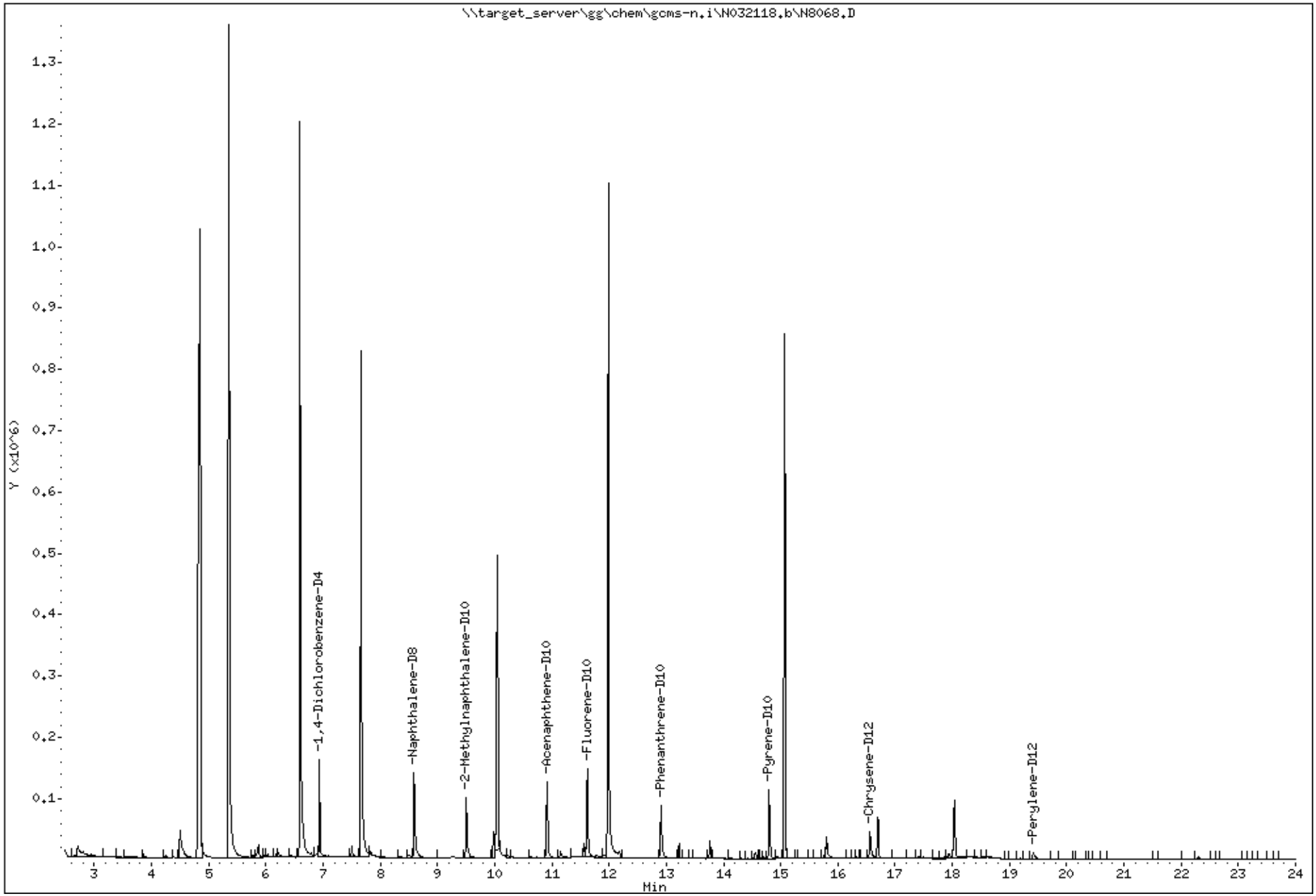
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03100	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	23.018	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	61372	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	196296	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	79878	0.68033	28.5	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	84049	0.80000		
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	96211	0.93614	39.2	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	123340	0.80000		
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	98716	1.05834	44.3	
*	76 Chrysene-D12	240	16.563	16.544	(1.000)	46522	0.80000		
*	83 Perylene-D12	264	19.423	19.400	(1.000)	22828	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8068.D
Date : 21-MAR-2018 20:08
Client ID: CHAAP-20B-SB03-4 Instrument: gcms-n.i
Sample Info: SL2133-6



Katahdin Analytical Services 1000041

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-7
Client ID: CHAAP-20B-SB03-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8069.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.3	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.2	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		29.8	%					
Fluorene-D10		41.2	%					
Pyrene-D10		55.5	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8069.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8069.D
Lab Smp Id: SL2133-7 Client Smp ID: CHAAP-20B-SB03-8
Inj Date : 21-MAR-2018 20:40 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-7
Misc Info : WG225136,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

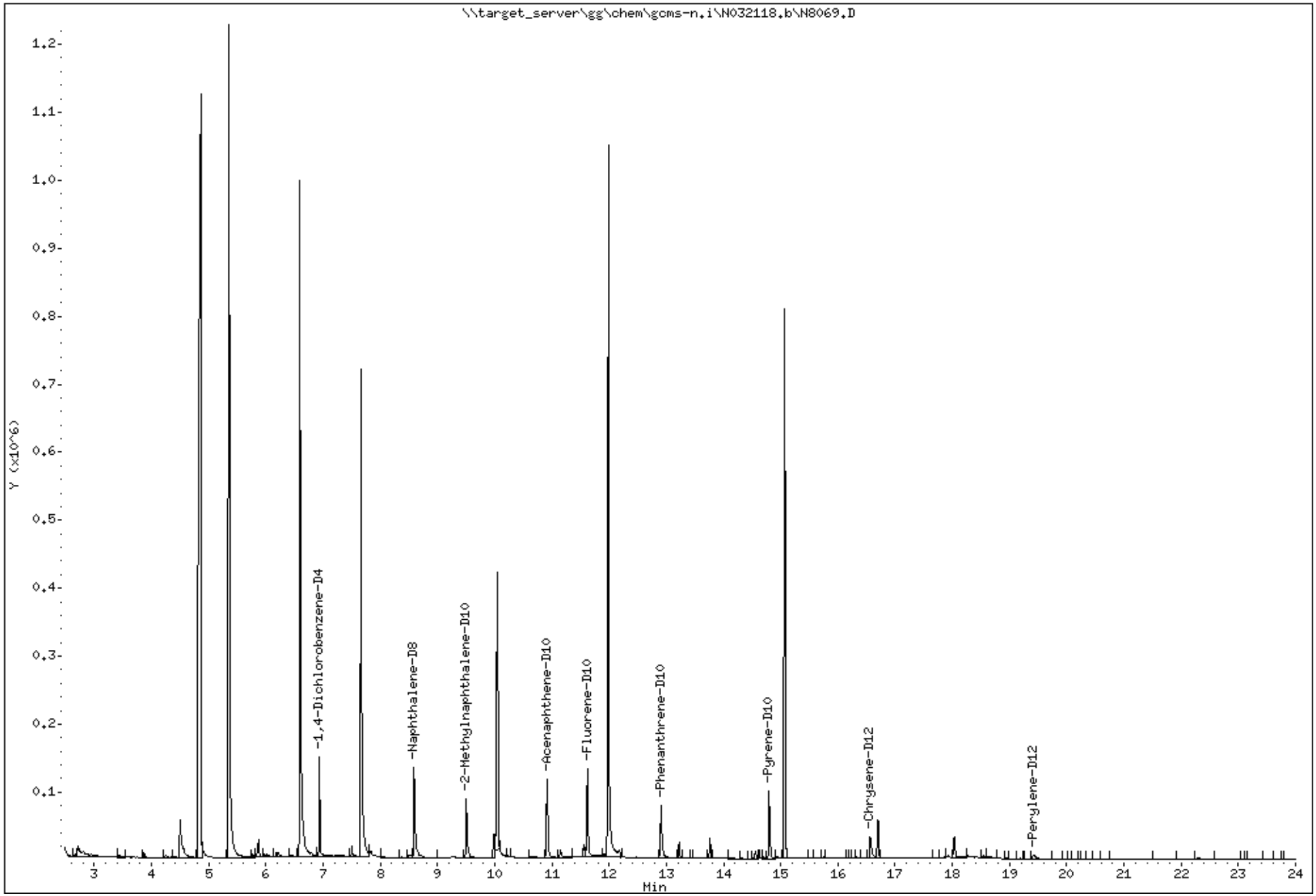
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03130	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	23.876	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	58505	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	186350	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	66383	0.59556	25.0	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	81557	0.80000		
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	82175	0.82400	34.6	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	114465	0.80000		
$	71 Pyrene-D10	212	14.799	14.790	(0.893)	87391	1.11360	46.7	
*	76 Chrysene-D12	240	16.572	16.544	(1.000)	39141	0.80000		
*	83 Perylene-D12	264	19.422	19.400	(1.000)	18098	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8069.D
Date : 21-MAR-2018 20:40
Client ID: CHAAP-20B-SB03-8 Instrument: gcms-n.i
Sample Info: SL2133-7



Katahdin Analytical Services 1000044

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-8
Client ID: CHAAP-20B-SB04-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8070.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 79.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.8	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		29.5	%					
Fluorene-D10		44.0	%					
Pyrene-D10		56.0	%					

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P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8070.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8070.D
Lab Smp Id: SL2133-8 Client Smp ID: CHAAP-20B-SB04-4
Inj Date : 21-MAR-2018 21:12 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-8
Misc Info : WG225136,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

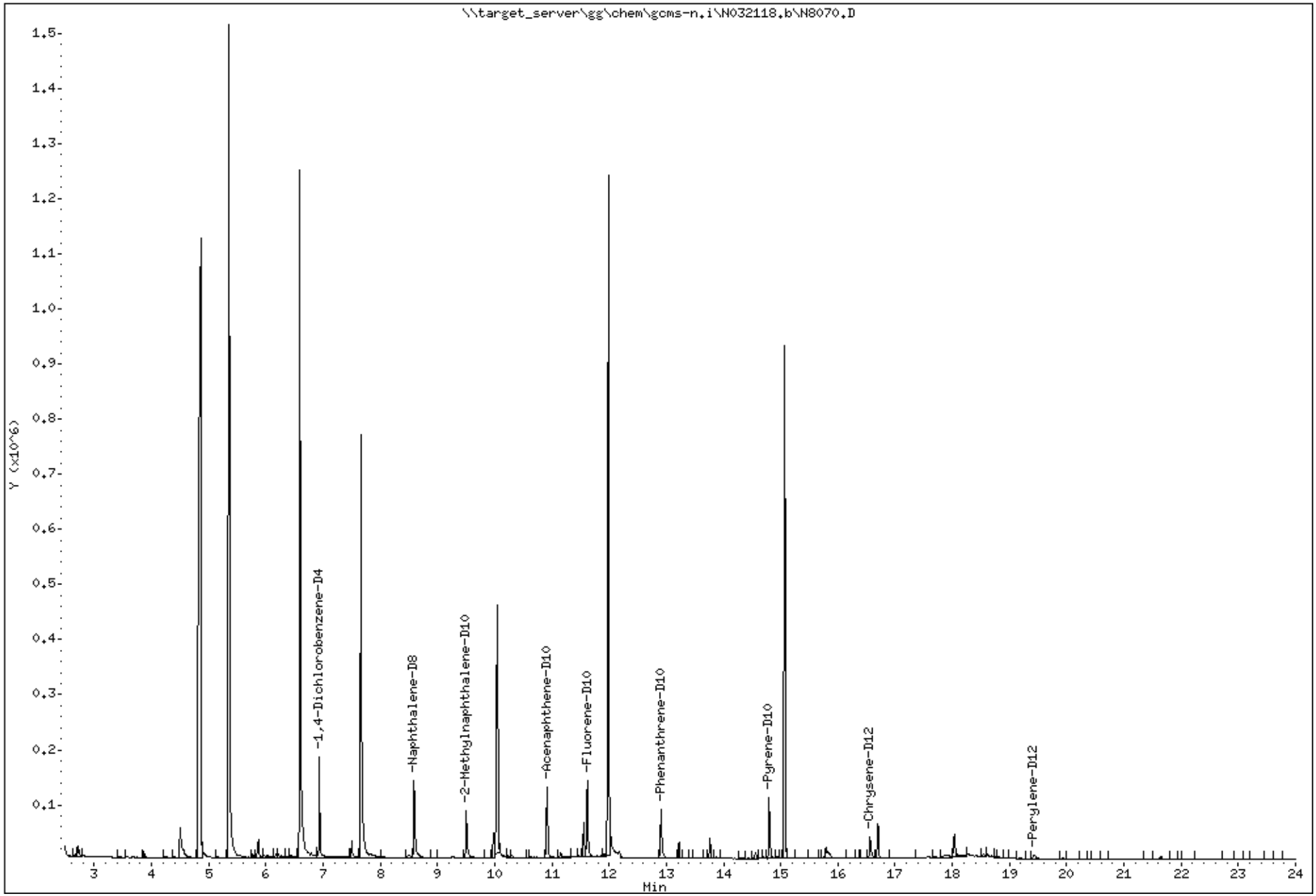
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03070	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	20.593	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.930	(1.000)	63413	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	200620	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	70776	0.58981	24.2	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	87177	0.80000		
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	93901	0.88088	36.1	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	127426	0.80000		
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	97901	1.11815	45.9	
*	76 Chrysene-D12	240	16.563	16.544	(1.000)	43670	0.80000		
*	83 Perylene-D12	264	19.434	19.400	(1.000)	19991	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8070.D
Date : 21-MAR-2018 21:12
Client ID: CHAAP-20B-SB04-4 Instrument: gcms-n.i
Sample Info: SL2133-8



Katahdin Analytical Services 1000047

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-9
Client ID: CHAAP-20B-SB04-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8071.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.9	12.
Phenanthrene	J	3.6	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.5	12.
Fluoranthene	J	5.8	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	J	5.4	ug/Kgdrywt	1	20	24.	2.6	12.
Benzo(a)anthracene	J	2.6	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	J	2.7	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		36.1	%					
Fluorene-D10		44.6	%					
Pyrene-D10		56.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8071.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8071.D
Lab Smp Id: SL2133-9 Client Smp ID: CHAAP-20B-SB04-8
Inj Date : 21-MAR-2018 21:45 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-9
Misc Info : WG225136,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

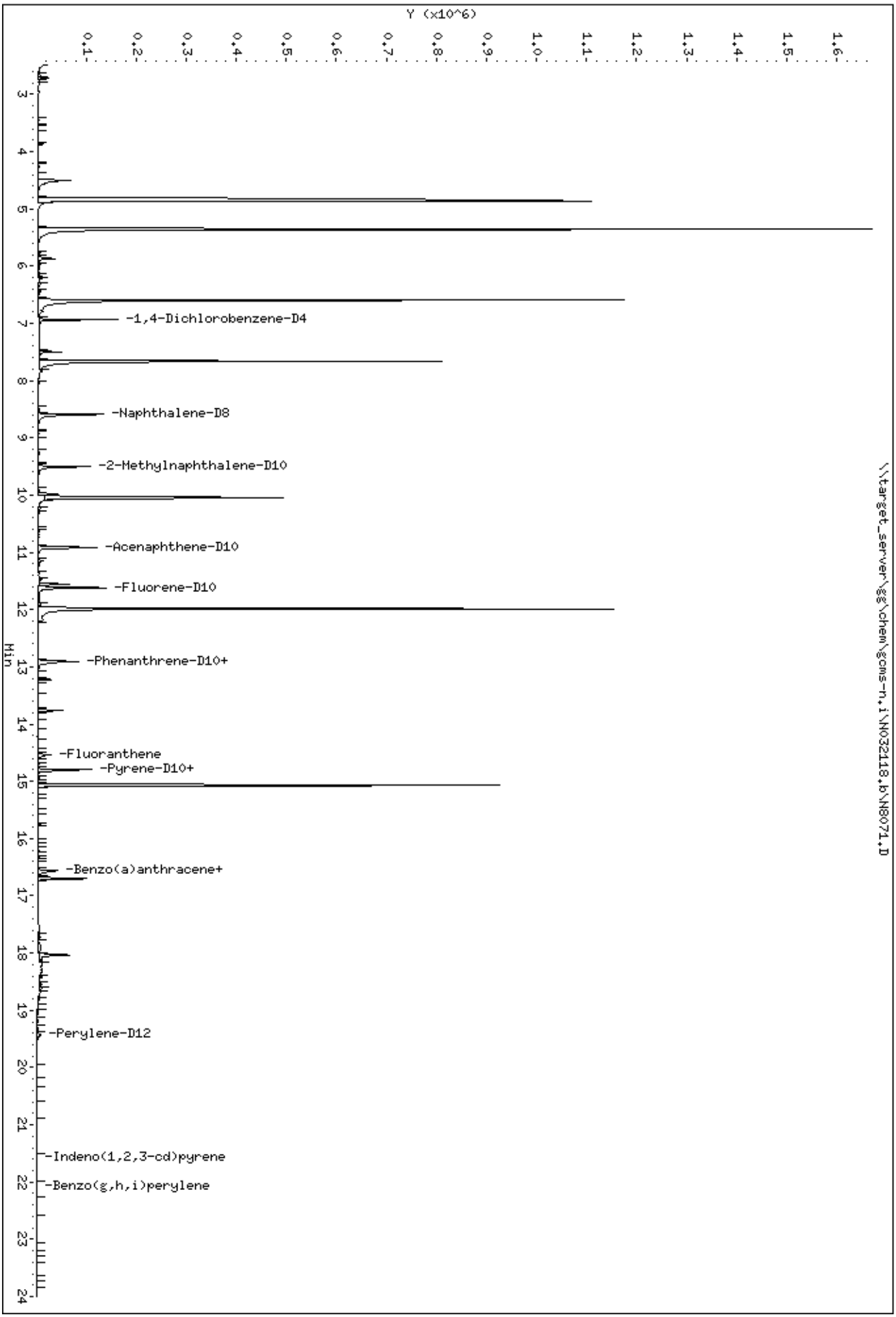
Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03200	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	23.338	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	60320	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	190665	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	82334	0.72195	29.4	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	84098	0.80000		
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	91695	0.89168	36.3	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	119077	0.80000		
	66 Phenanthrene	178	12.938	12.916	(1.002)	16954	0.08752	3.57(a)	
	70 Fluoranthene	202	14.536	14.518	(1.126)	23395	0.14188	5.78(a)	
$	71 Pyrene-D10	212	14.799	14.790	(0.893)	93938	1.12134	45.7	
	72 Pyrene	202	14.827	14.809	(0.895)	20220	0.13215	5.39(a)	
	74 Benzo(a)anthracene	228	16.554	16.535	(0.999)	4997	0.06485	2.64(a)	
*	76 Chrysene-D12	240	16.572	16.544	(1.000)	41783	0.80000		
*	83 Perylene-D12	264	19.422	19.400	(1.000)	20633	0.80000		
	87 Benzo(g,h,i)perylene	276	22.069	21.978	(1.136)	1410	0.06587	2.68(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.


Data File: \\target_server\gg\chem\gcms-n,i\N032118,b\N8071.D
Date : 21-MAR-2018 21:45
Client ID: CHAAP-20B-SB04-8
Sample Info: SL2133-9
Instrument: gcms-n,i
\\target_server\gg\chem\gcms-n,i\N032118,b\N8071.D
Y (x10^6)
Min
-1,4-Dichlorobenzene-D4
-Naphthalene-D8
-2-Methylnaphthalene-D10
-Acenaphthene-D10
-Fluorene-D10
-Phenanthrene-D10+
-Fluoranthene
-Pyrene-D10+
-Benzo(a)anthracene+
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
-Benzo(g,h,i)perylene

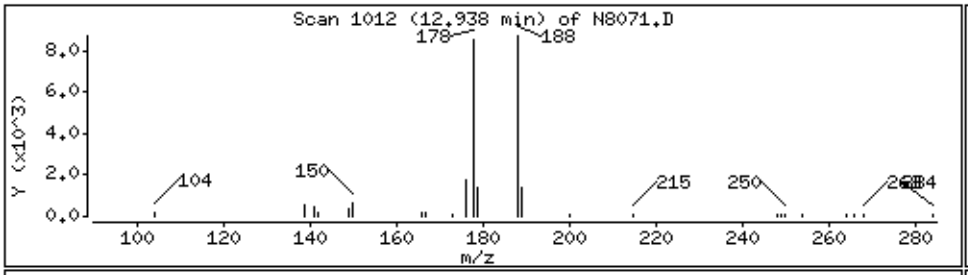
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8071.D

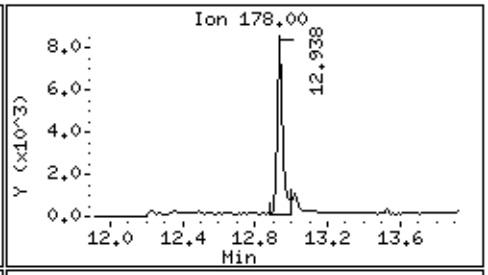
Date : 21-MAR-2018 21:45

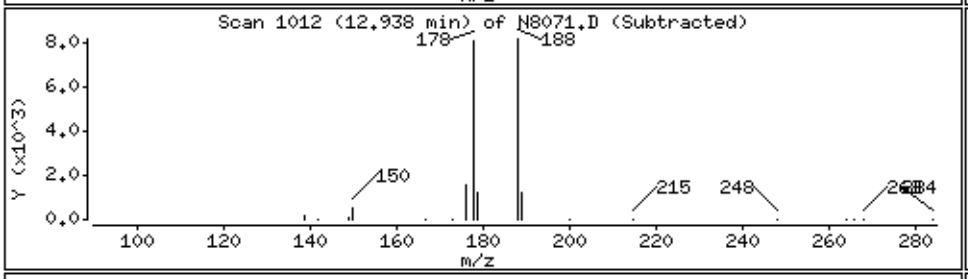
Client ID: CHAAP-20B-SB04-8 Instrument: gcms-n.i

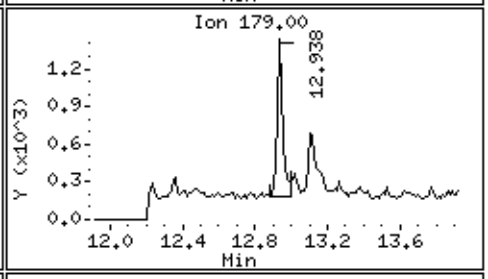
Sample Info: SL2133-9

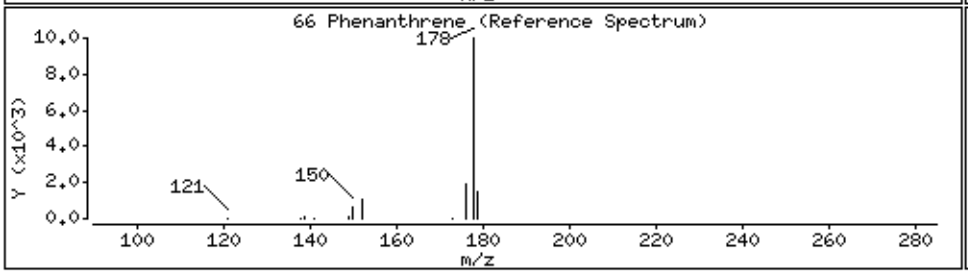
66 Phenanthrene Concentration: 3.57 ug/Kgdrywt

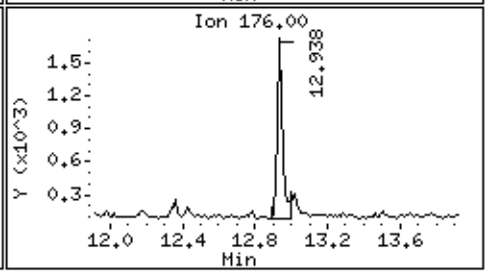




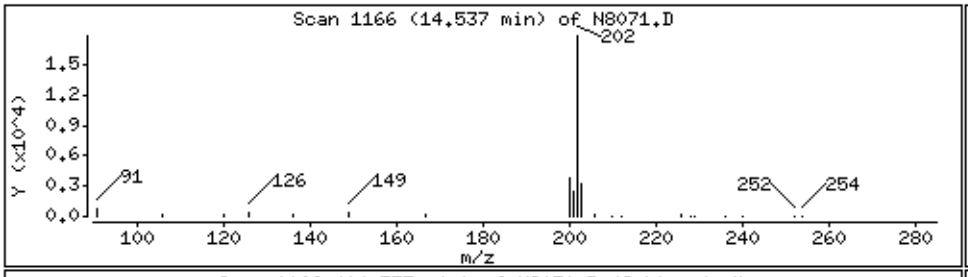


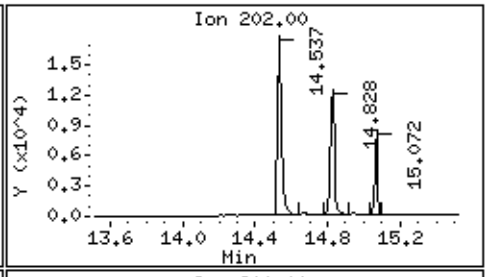


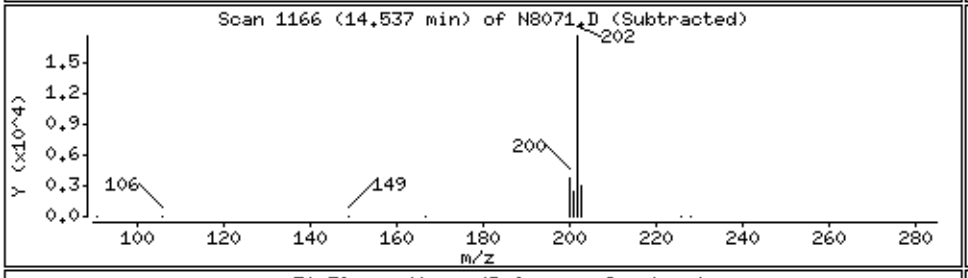


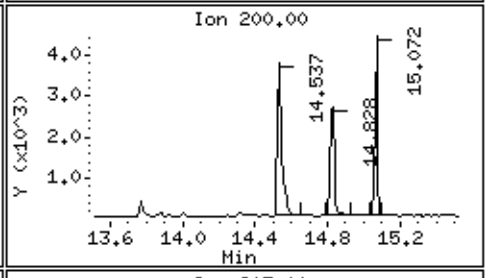


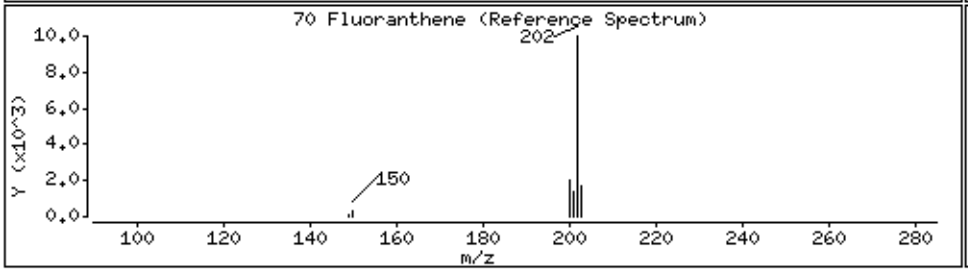
70 Fluoranthene Concentration: 5.78 ug/Kgdrywt

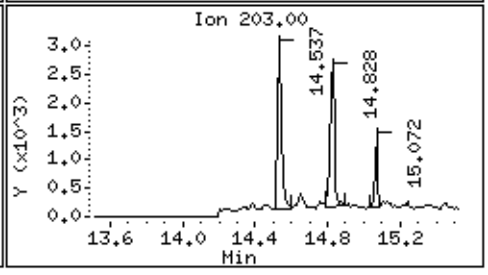












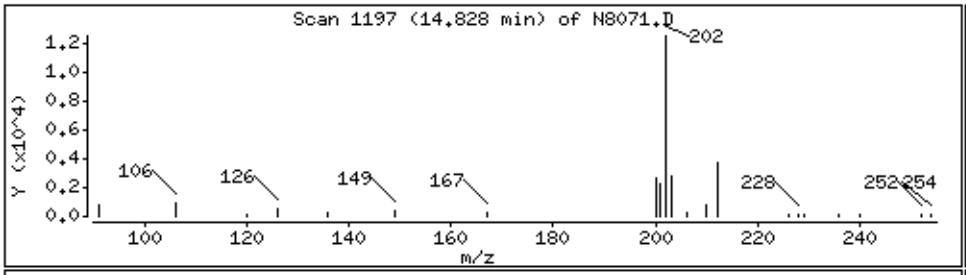
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8071.D

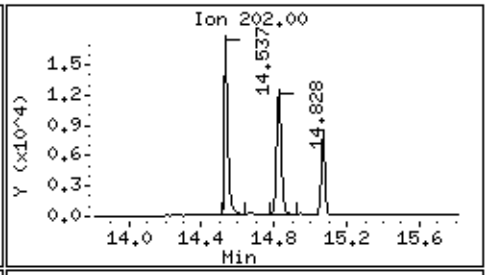
Date : 21-MAR-2018 21:45

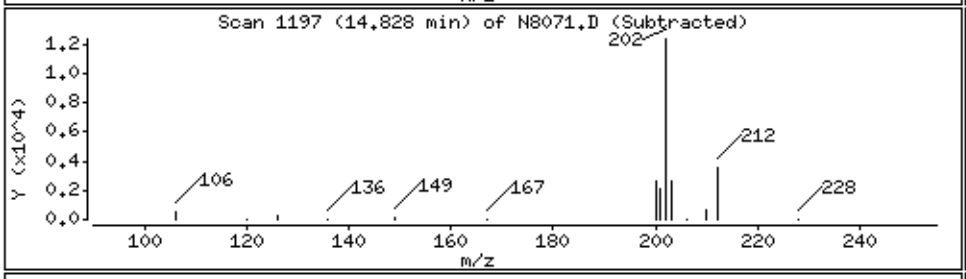
Client ID: CHAAP-20B-SB04-8 Instrument: gcms-n.i

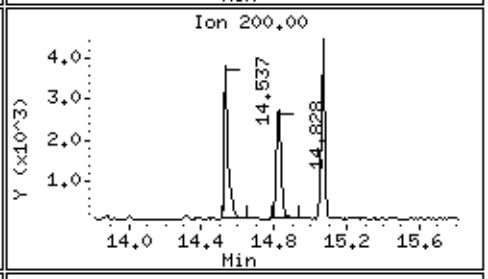
Sample Info: SL2133-9

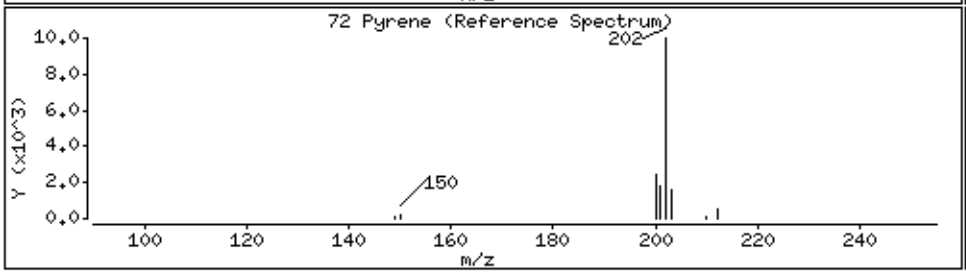
72 Pyrene Concentration: 5.39 ug/Kgdrywt

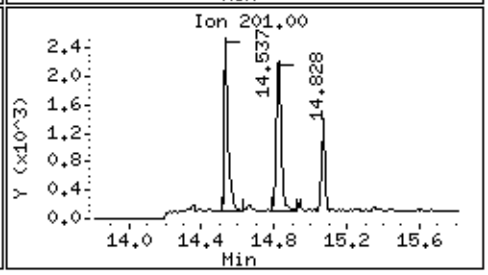




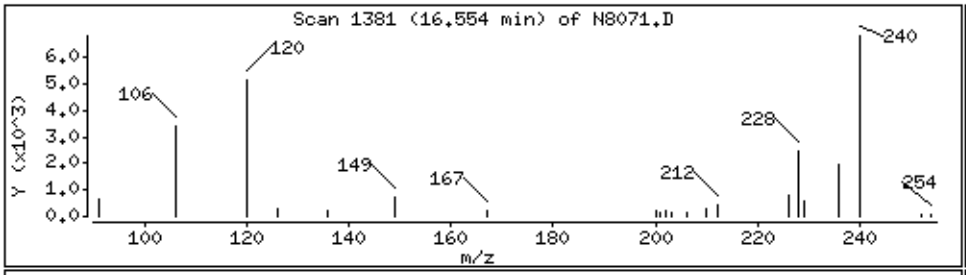


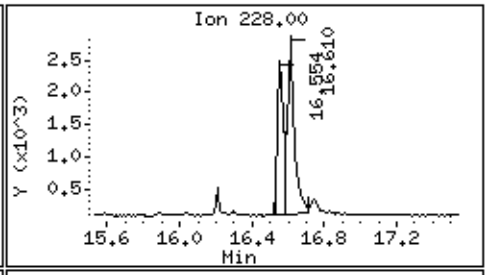


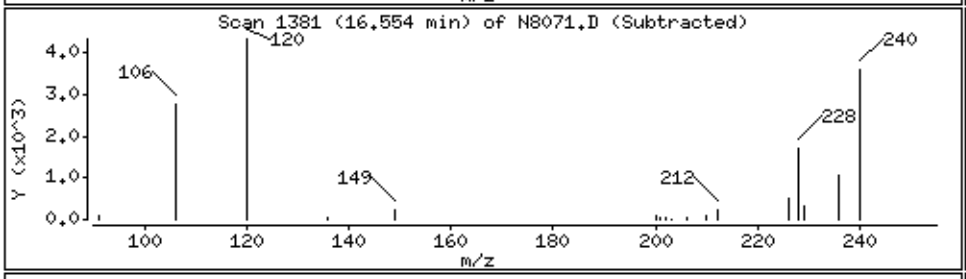


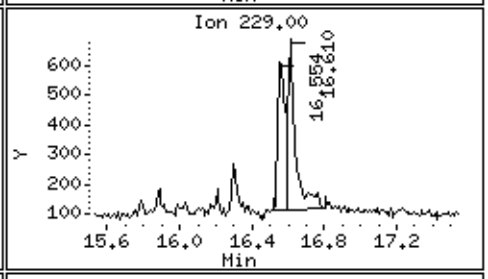


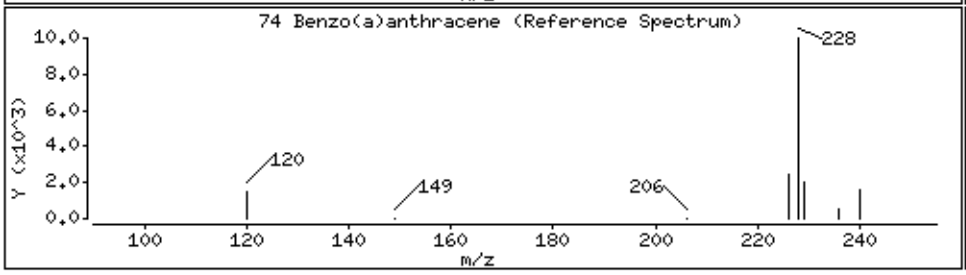
74 Benzo(a)anthracene Concentration: 2.64 ug/Kgdrywt

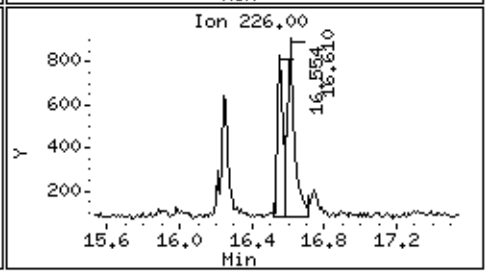












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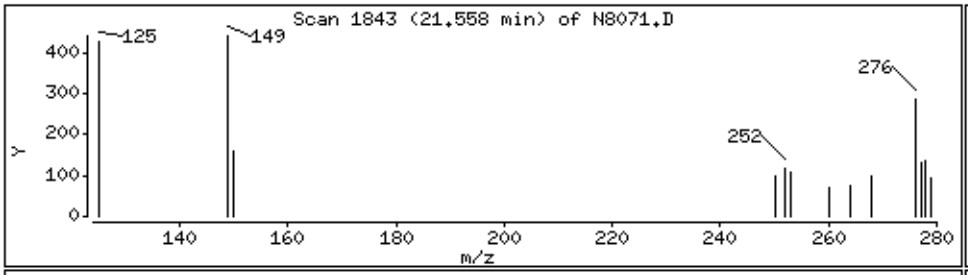
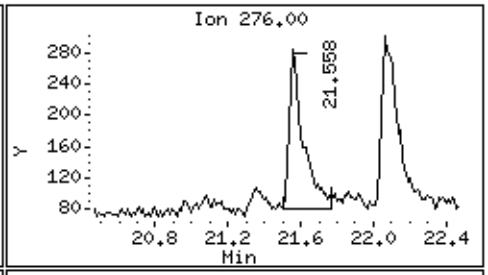
Date : 21-MAR-2018 21:45

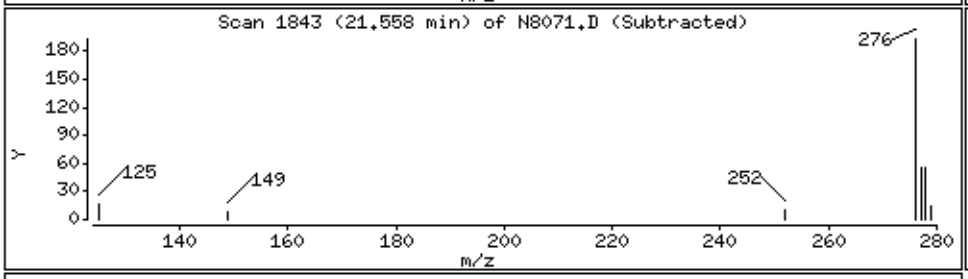
Client ID: CHAAP-20B-SB04-8 Instrument: gcms-n.i

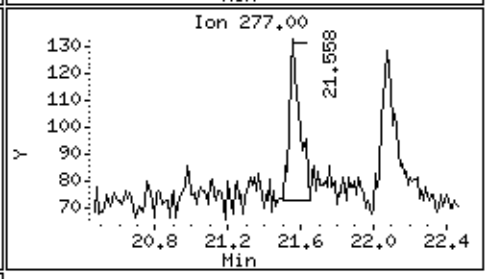
Sample Info: SL2133-9

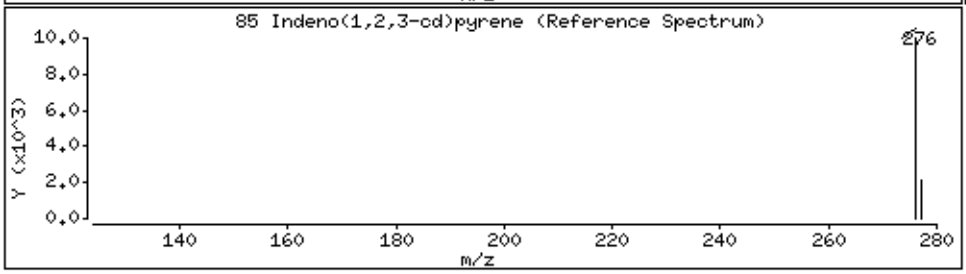
85 Indeno(1,2,3-cd)pyrene Concentration: 1.94 ug/Kgdrywt



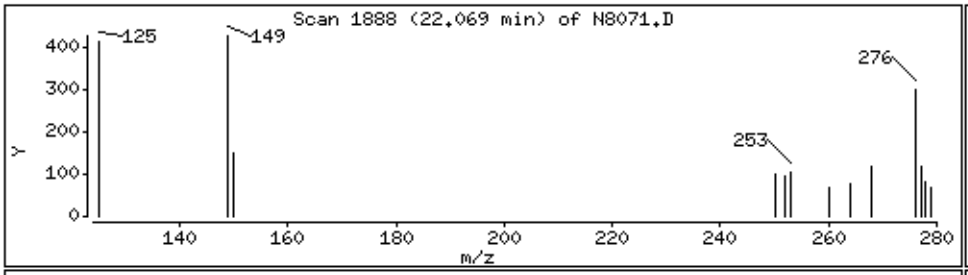


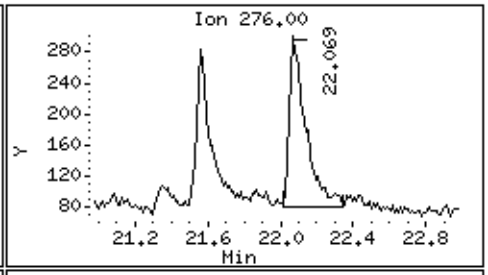


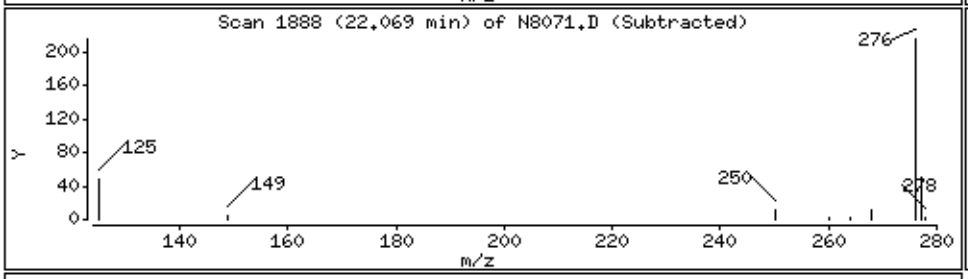


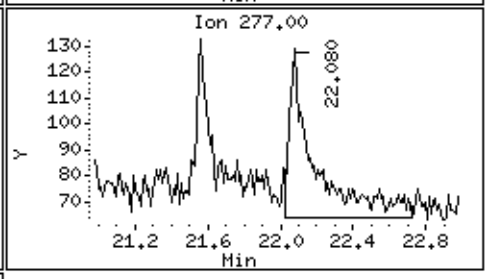


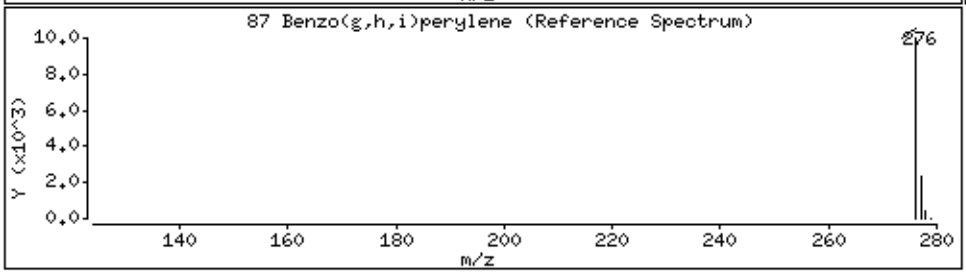
87 Benzo(g,h,i)perylene Concentration: 2.68 ug/Kgdrywt











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-10
Client ID: CHAAP-20B-SB05-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8084.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	25.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	25.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	25.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	25.	4.0	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Pyrene	U	13	ug/Kgdrywt	1	20	25.	2.6	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	25.	2.1	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.0	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.9	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	25.	4.2	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	25.	2.5	13.
2-Methylnaphthalene-D10		47.6	%					
Fluorene-D10		58.5	%					
Pyrene-D10		67.5	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8084.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8084.D
Lab Smp Id: SL2133-10 Client Smp ID: CHAAP-20B-SB05-4
Inj Date : 22-MAR-2018 10:27 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-10
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12

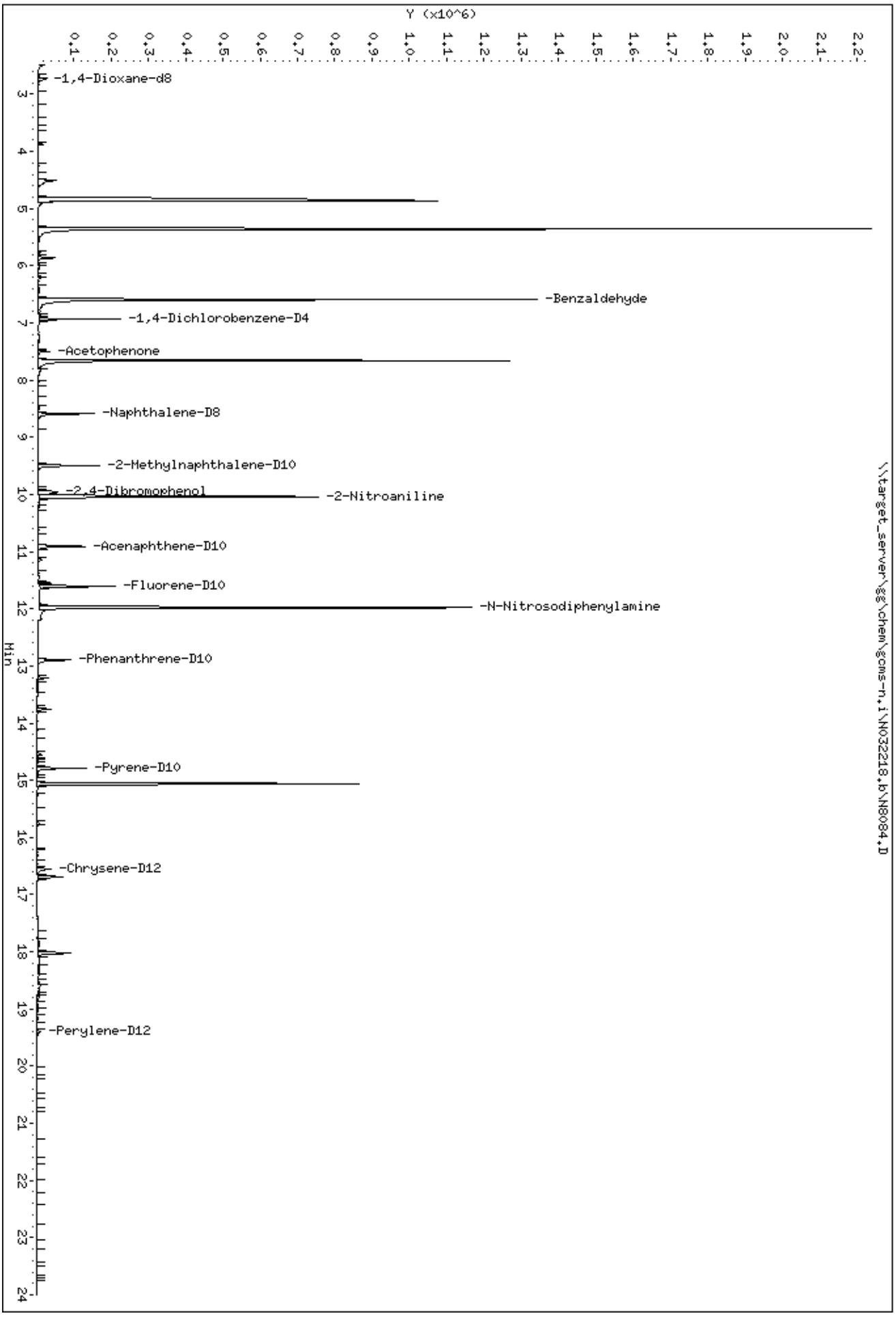
Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03060	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	22.477	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	64636	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.561	(1.000)	201000	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	114430	0.95180	40.1	
*	47 Acenaphthene-D10	164	10.915	10.893	(1.000)	86066	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.064)	122952	1.16829	49.2	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	123177	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.893)	111279	1.34707	56.8	
*	76 Chrysene-D12	240	16.554	16.516	(1.000)	41202	0.80000		
*	83 Perylene-D12	264	19.400	19.343	(1.000)	23440	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.


Y (x10^6)
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0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
Min
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
-1,4-Dioxane-d8
-Benzaldehyde
-1,4-Dichlorobenzene-D4
-Acetophenone
-Naphthalene-D8
-2-Methylnaphthalene-D10
-2,4-Dibromophenol
-2-Nitroaniline
-Acenaphthene-D10
-Fluorene-D10
-N-Nitrosodiphenylamine
-Phenanthrene-D10
-Pyrene-D10
-Chrysene-D12
-Perylene-D12
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Date : 22-MAR-2018 10:27
Client ID: CHAAP-20B-SB05-4
Sample Info: SL2133-10
Instrument: gcms-n,i

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-11
Client ID: CHAAP-20B-SB05-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8085.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 76.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	J	2.9	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	J	3.8	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		31.1	%					
Fluorene-D10		43.2	%					
Pyrene-D10		52.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8085.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8085.D
Lab Smp Id: SL2133-11 Client Smp ID: CHAAP-20B-SB05-8
Inj Date : 22-MAR-2018 10:58 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-11
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

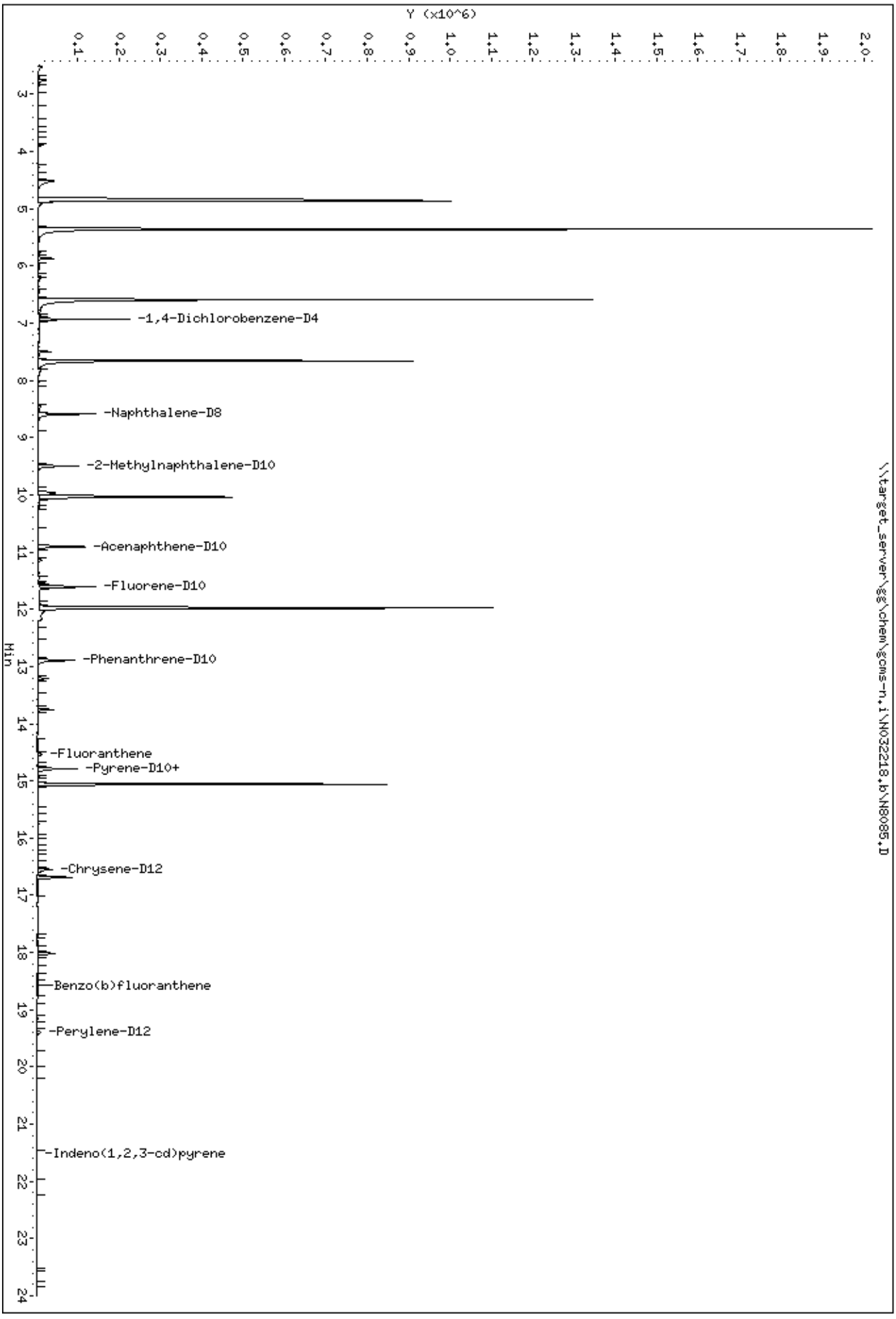
Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03140	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	23.764	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	64669	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.561	(1.000)	197112	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	73305	0.62176	26.0	
*	47 Acenaphthene-D10	164	10.915	10.893	(1.000)	84536	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.064)	89262	0.86352	36.1	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	119072	0.80000		
	70 Fluoranthene	202	14.527	14.499	(1.127)	11597	0.07033	2.94(a)	
$	71 Pyrene-D10	212	14.790	14.762	(0.893)	82637	1.04255	43.6	
	72 Pyrene	202	14.818	14.790	(0.895)	13234	0.09141	3.82(a)	
*	76 Chrysene-D12	240	16.554	16.516	(1.000)	39534	0.80000		
*	83 Perylene-D12	264	19.388	19.343	(1.000)	23280	0.80000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.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Date : 22-MAR-2018 10:58
Client ID: CHAAP-20B-SB05-8
Sample Info: SL2133-11
Instrument: gcms-n,i
Y (x10^6)
Min
-1,4-Dichlorobenzene-D4
-Naphthalene-D8
-2-Methylnaphthalene-D10
-Acenaphthene-D10
-Fluorene-D10
-Phenanthrene-D10
-Fluoranthene
-Pyrene-D10+
-Chrysene-D12
Benzo(b)fluoranthene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene
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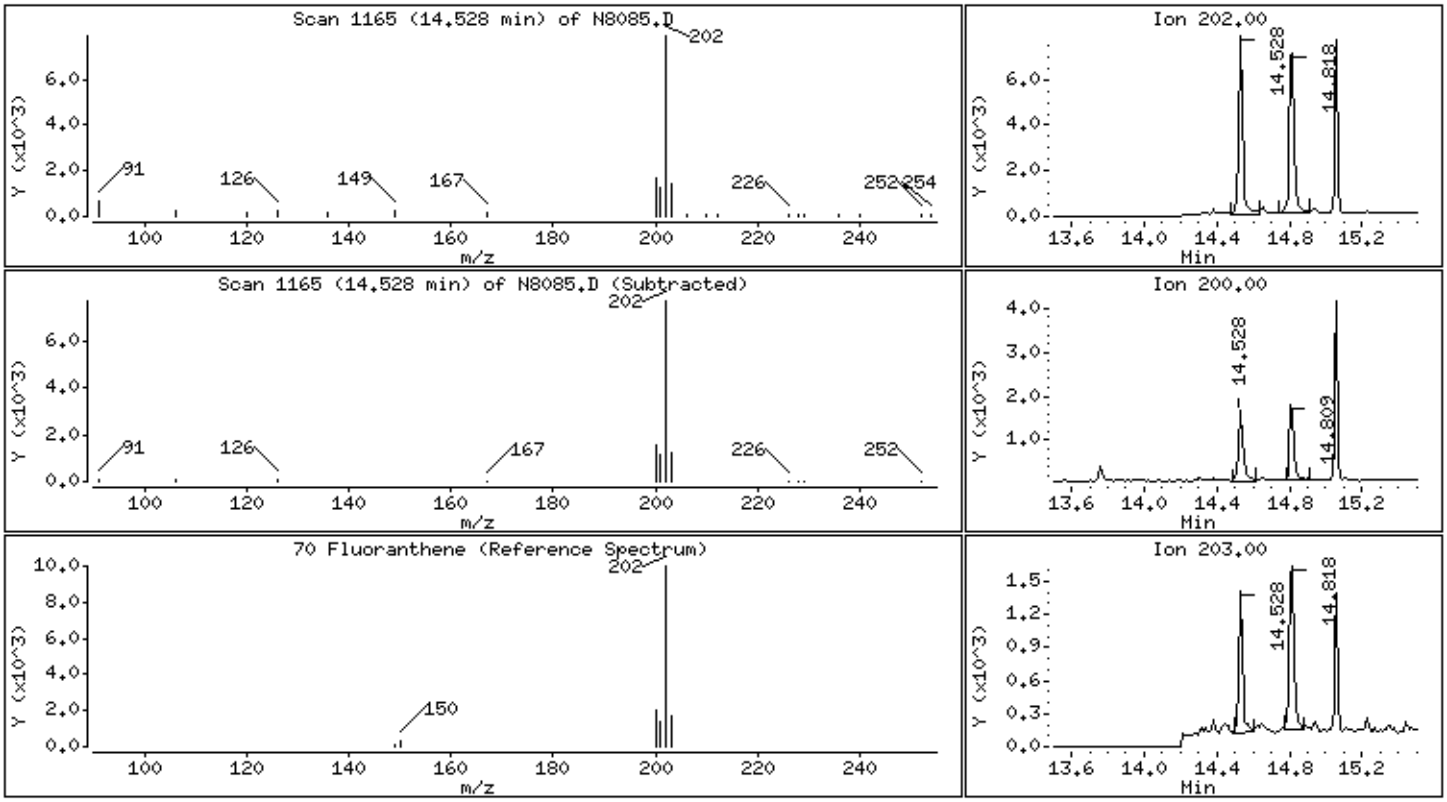
Date : 22-MAR-2018 10:58

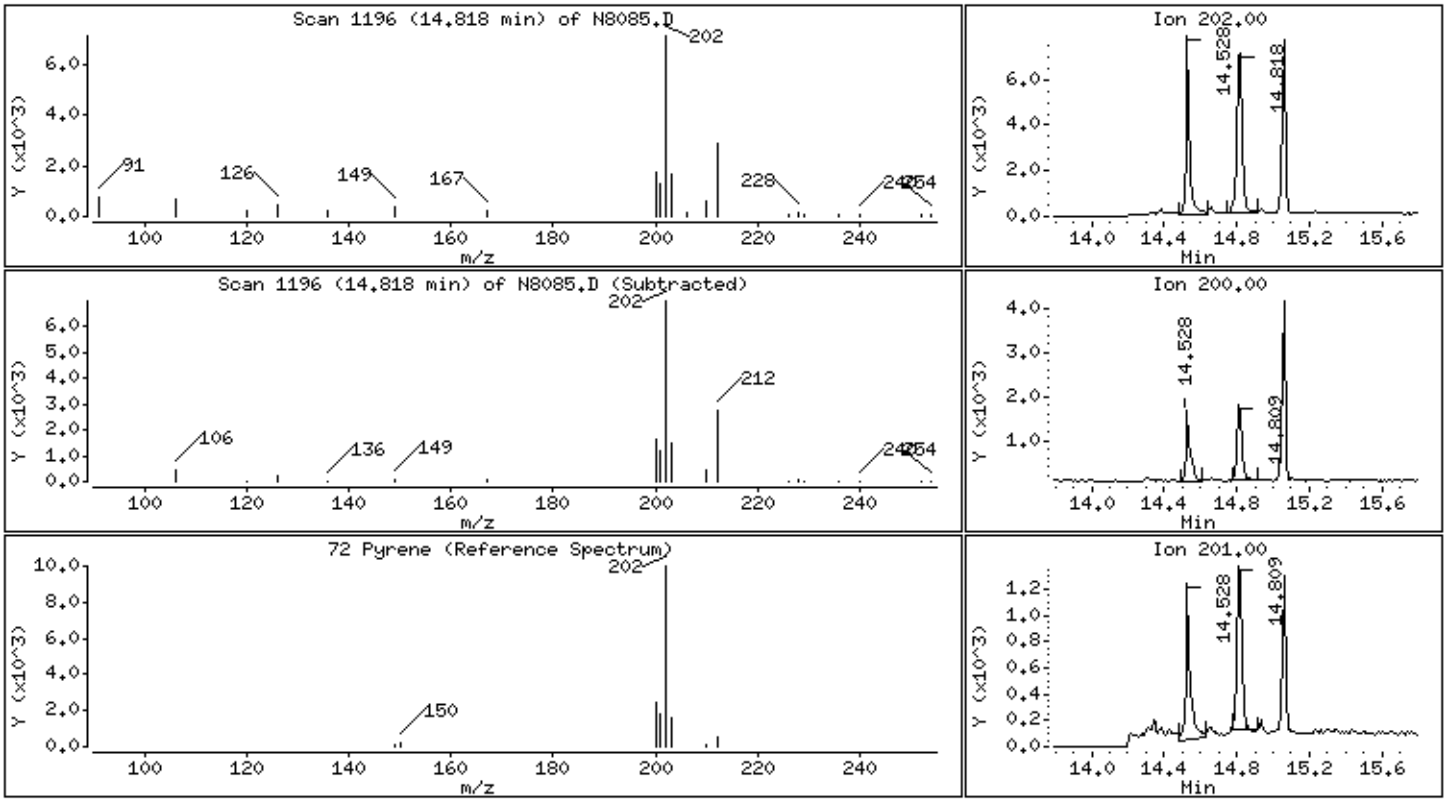
Client ID: CHAAP-20B-SB05-8 Instrument: gcms-n.i

Sample Info: SL2133-11

70 Fluoranthene Concentration: 2.94 ug/Kgdrywt



72 Pyrene Concentration: 3.82 ug/Kgdrywt



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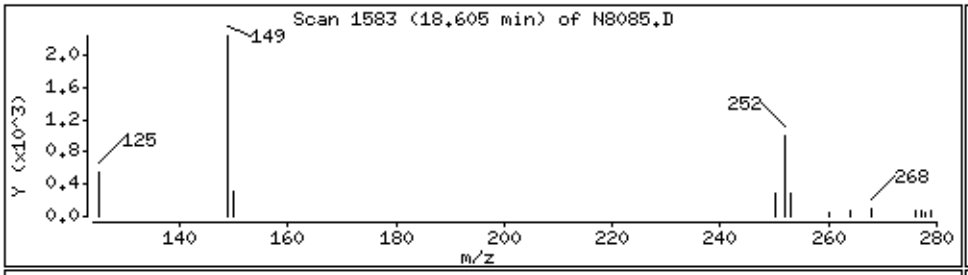
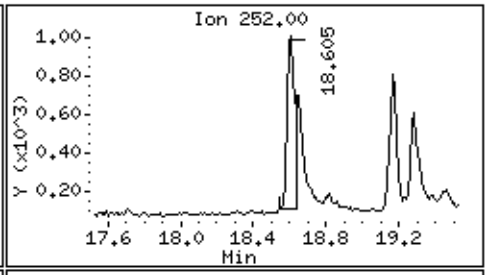
Date : 22-MAR-2018 10:58

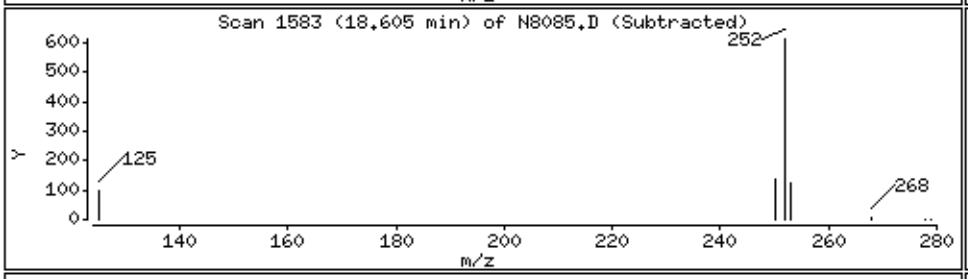
Client ID: CHAAP-20B-SB05-8 Instrument: gcms-n.i

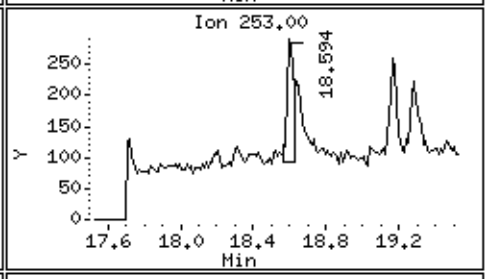
Sample Info: SL2133-11

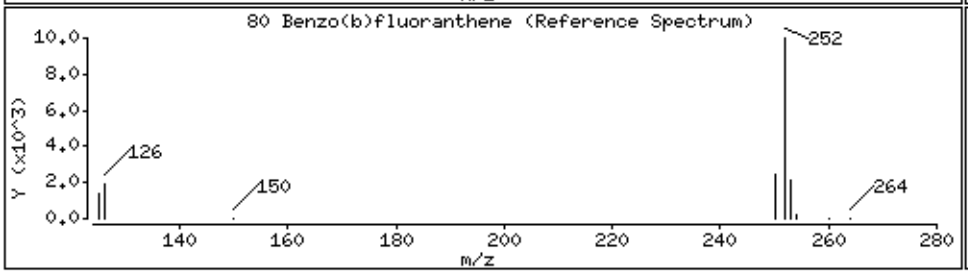
80 Benzo(b)fluoranthene Concentration: 2.50 ug/Kgdrywt

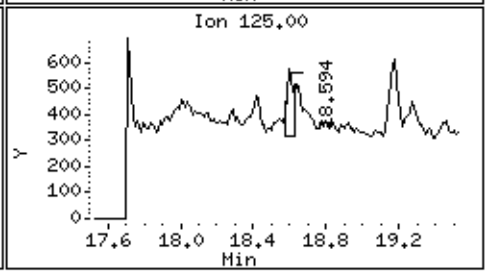




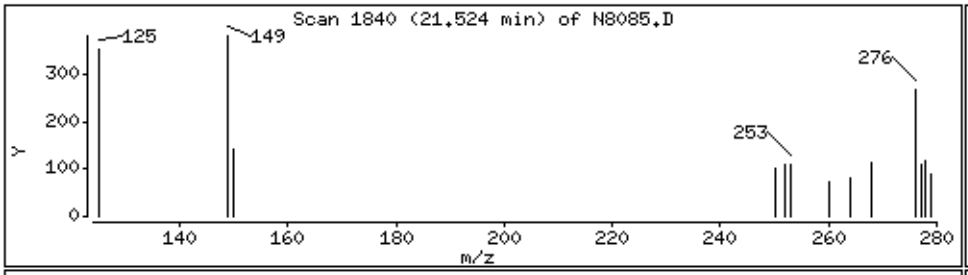


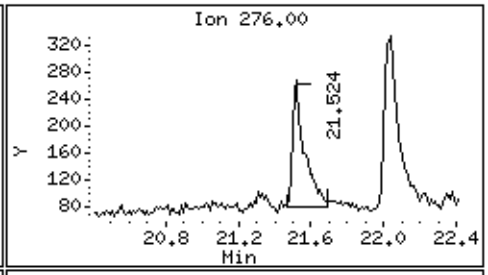


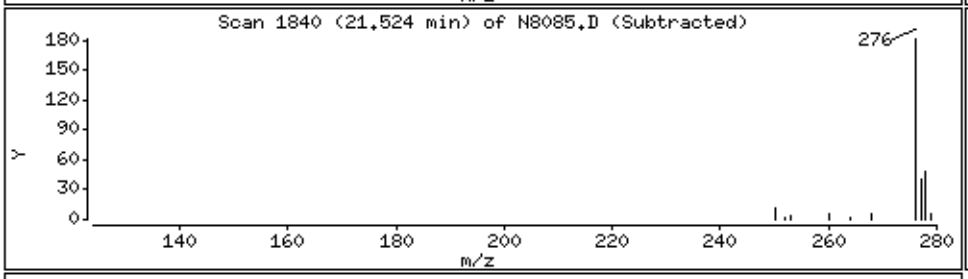


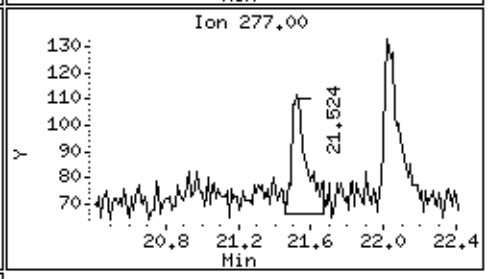


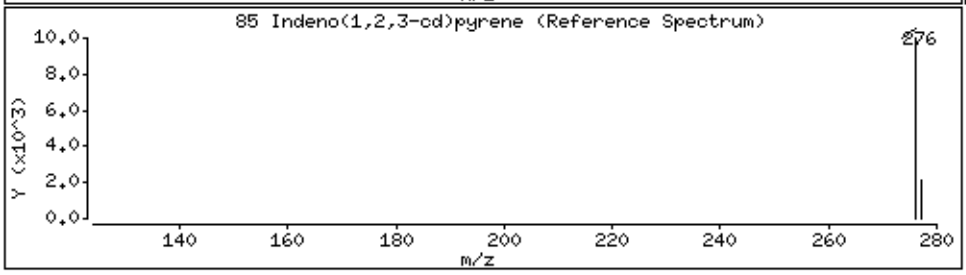
85 Indeno(1,2,3-cd)pyrene Concentration: 1.61 ug/Kgdrywt











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-12
Client ID: CHAAP-20B-SB06-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8086.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 79.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.7	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		41.0	%					
Fluorene-D10		52.0	%					
Pyrene-D10		60.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8086.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8086.D
Lab Smp Id: SL2133-12 Client Smp ID: CHAAP-20B-SB06-4
Inj Date : 22-MAR-2018 11:30 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-12
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

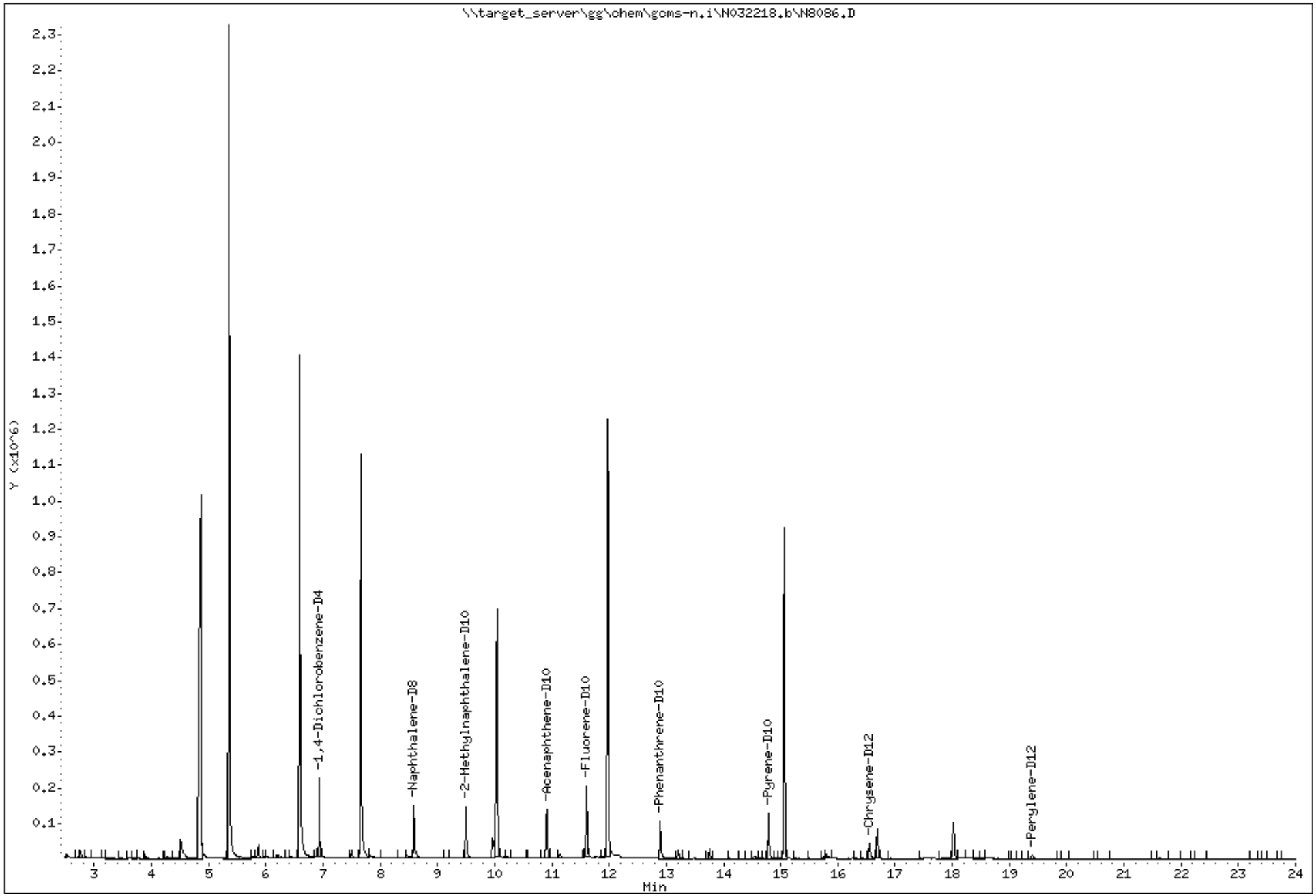
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03040	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	20.854	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	66038	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.561	(1.000)	204933	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	100565	0.82042	34.1	
*	47 Acenaphthene-D10	164	10.915	10.893	(1.000)	90361	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.064)	114805	1.03903	43.2	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	129579	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.893)	109566	1.19896	49.8	
*	76 Chrysene-D12	240	16.554	16.516	(1.000)	45579	0.80000		
*	83 Perylene-D12	264	19.388	19.343	(1.000)	27388	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8086.D
Date : 22-MAR-2018 11:30
Client ID: CHAAP-20B-SB06-4 Instrument: gcms-n.i
Sample Info: SL2133-12



Katahdin Analytical Services 1000064

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-13
Client ID: CHAAP-20B-SB06-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8087.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 75.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	26.	3.4	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	26.	2.9	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	26.	2.0	13.
Fluorene	U	13	ug/Kgdrywt	1	20	26.	4.2	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Anthracene	U	13	ug/Kgdrywt	1	20	26.	1.6	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Pyrene	U	13	ug/Kgdrywt	1	20	26.	2.8	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Chrysene	U	13	ug/Kgdrywt	1	20	26.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	26.	3.2	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	26.	4.1	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	26.	4.3	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	26.	2.5	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	26.	2.4	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	26.	2.6	13.
2-Methylnaphthalene-D10		23.9	%					
Fluorene-D10		39.4	%					
Pyrene-D10		46.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8087.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8087.D
Lab Smp Id: SL2133-13 Client Smp ID: CHAAP-20B-SB06-8
Inj Date : 22-MAR-2018 12:01 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-13
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

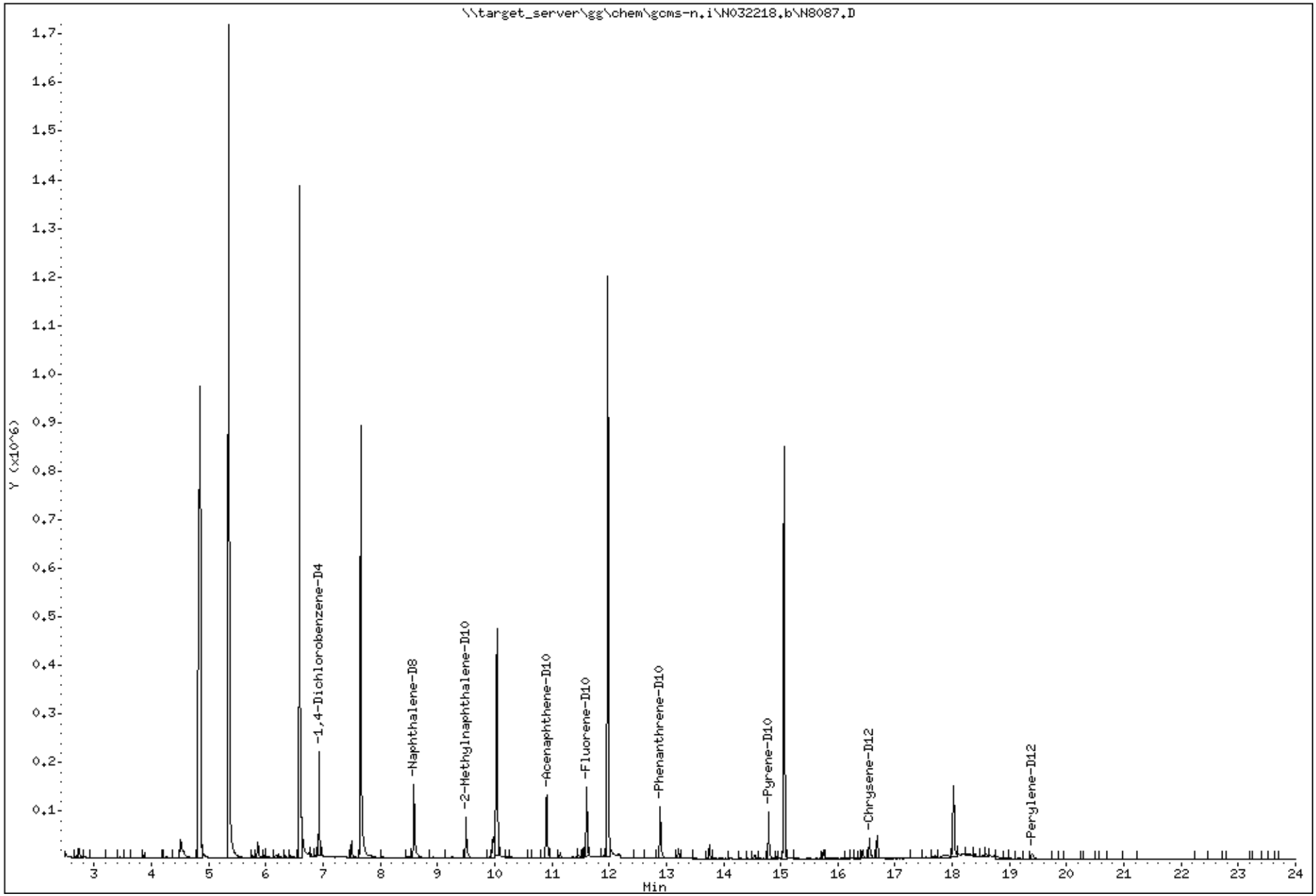
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03030	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	24.763	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	66857	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.561	(1.000)	211843	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	60600	0.47826	21.0	
*	47 Acenaphthene-D10	164	10.915	10.893	(1.000)	92213	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.064)	88754	0.78713	34.5	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	130737	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.893)	83224	0.92878	40.7	
*	76 Chrysene-D12	240	16.554	16.516	(1.000)	44692	0.80000		
*	83 Perylene-D12	264	19.389	19.343	(1.000)	26440	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8087.D
Date : 22-MAR-2018 12:01
Client ID: CHAAP-20B-SB06-8 Instrument: gcms-n.i
Sample Info: SL2133-13



Katahdin Analytical Services 1000067

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-14
Client ID: CHAAP-20B-SS01
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8088.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 85.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11	ug/Kgdrywt	1	20	23.	3.0	11.
2-Methylnaphthalene	U	11	ug/Kgdrywt	1	20	23.	2.5	11.
Acenaphthylene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Acenaphthene	U	11	ug/Kgdrywt	1	20	23.	1.7	11.
Fluorene	U	11	ug/Kgdrywt	1	20	23.	3.7	11.
Phenanthrene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Anthracene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Pyrene	U	11	ug/Kgdrywt	1	20	23.	2.4	11.
Benzo(a)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Chrysene	U	11	ug/Kgdrywt	1	20	23.	1.9	11.
Benzo(b)Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.8	11.
Benzo(k)fluoranthene	U	11	ug/Kgdrywt	1	20	23.	3.6	11.
Benzo(a)pyrene	U	11	ug/Kgdrywt	1	20	23.	3.8	11.
Indeno(1,2,3-cd)pyrene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Dibenzo(a,h)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Benzo(g,h,i)perylene	U	11	ug/Kgdrywt	1	20	23.	2.3	11.
2-Methylnaphthalene-D10		46.1	%					
Fluorene-D10		49.4	%					
Pyrene-D10		44.4	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8088.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8088.D
Lab Smp Id: SL2133-14 Client Smp ID: CHAAP-20B-SS01
Inj Date : 22-MAR-2018 12:33 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-14
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

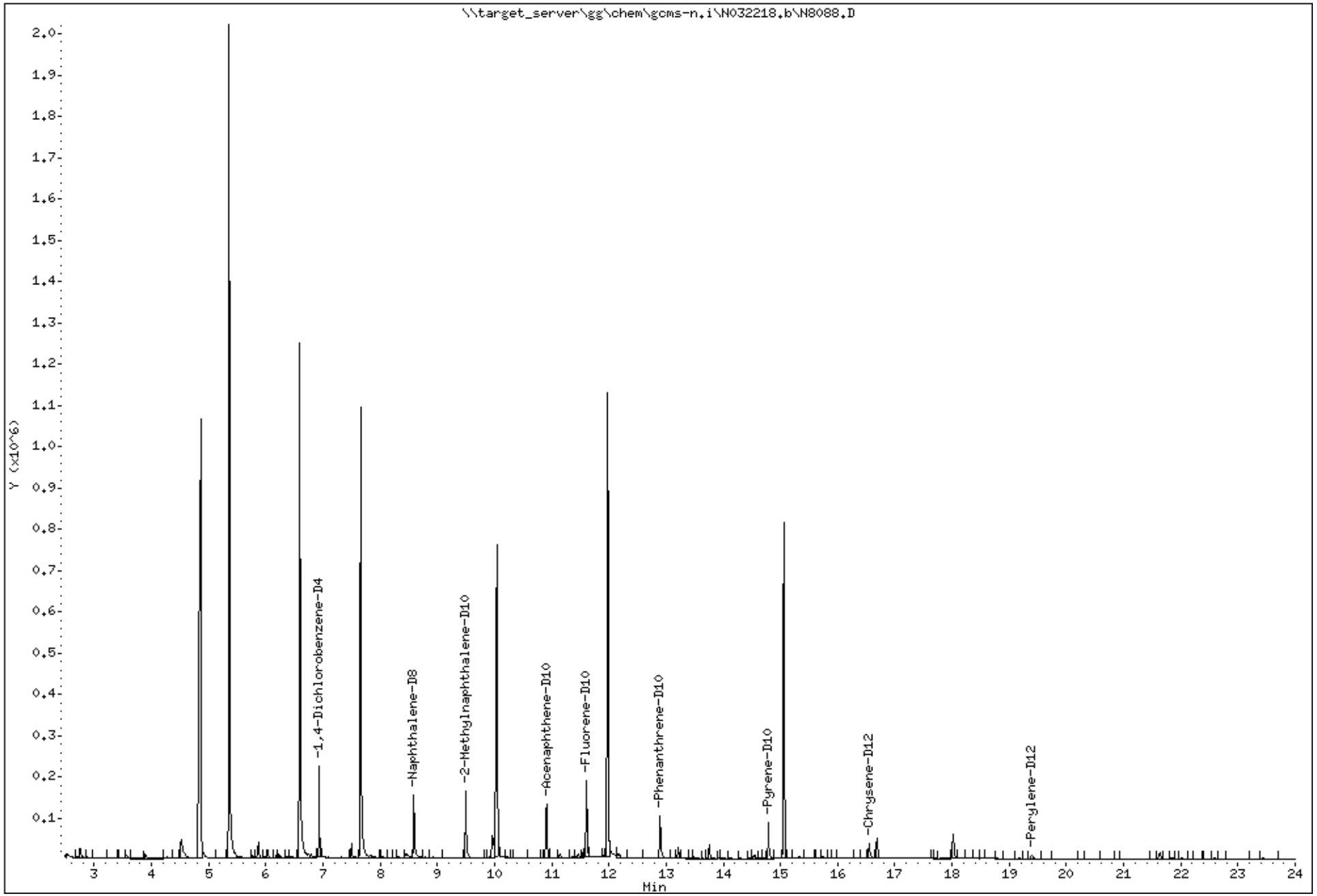
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03090	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	15.341	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	63726	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.561	(1.000)	200424	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	110529	0.92199	35.2	
*	47 Acenaphthene-D10	164	10.915	10.893	(1.000)	88914	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.064)	107541	0.98913	37.8	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	126117	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.893)	69914	0.88831	34.0	
*	76 Chrysene-D12	240	16.554	16.516	(1.000)	39255	0.80000		
*	83 Perylene-D12	264	19.388	19.343	(1.000)	22926	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8088.D
Date : 22-MAR-2018 12:33
Client ID: CHAAP-20B-SS01 Instrument: gcms-n.i
Sample Info: SL2133-14



Katahdin Analytical Services 1000070

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-15
Client ID: CHAAP-20B-SS02
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8089.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 80.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11	ug/Kgdrywt	1	20	23.	3.0	11.
2-Methylnaphthalene	U	11	ug/Kgdrywt	1	20	23.	2.5	11.
Acenaphthylene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Acenaphthene	U	11	ug/Kgdrywt	1	20	23.	1.7	11.
Fluorene	U	11	ug/Kgdrywt	1	20	23.	3.7	11.
Phenanthrene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Anthracene	U	11	ug/Kgdrywt	1	20	23.	1.4	11.
Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Pyrene	U	11	ug/Kgdrywt	1	20	23.	2.4	11.
Benzo(a)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Chrysene	U	11	ug/Kgdrywt	1	20	23.	2.0	11.
Benzo(b)Fluoranthene	U	11	ug/Kgdrywt	1	20	23.	2.8	11.
Benzo(k)fluoranthene	U	11	ug/Kgdrywt	1	20	23.	3.6	11.
Benzo(a)pyrene	U	11	ug/Kgdrywt	1	20	23.	3.8	11.
Indeno(1,2,3-cd)pyrene	U	11	ug/Kgdrywt	1	20	23.	2.2	11.
Dibenzo(a,h)anthracene	U	11	ug/Kgdrywt	1	20	23.	2.1	11.
Benzo(g,h,i)perylene	U	11	ug/Kgdrywt	1	20	23.	2.3	11.
2-Methylnaphthalene-D10		44.3	%					
Fluorene-D10		46.2	%					
Pyrene-D10		45.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8089.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8089.D
Lab Smp Id: SL2133-15 Client Smp ID: CHAAP-20B-SS02
Inj Date : 22-MAR-2018 13:05 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-15
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

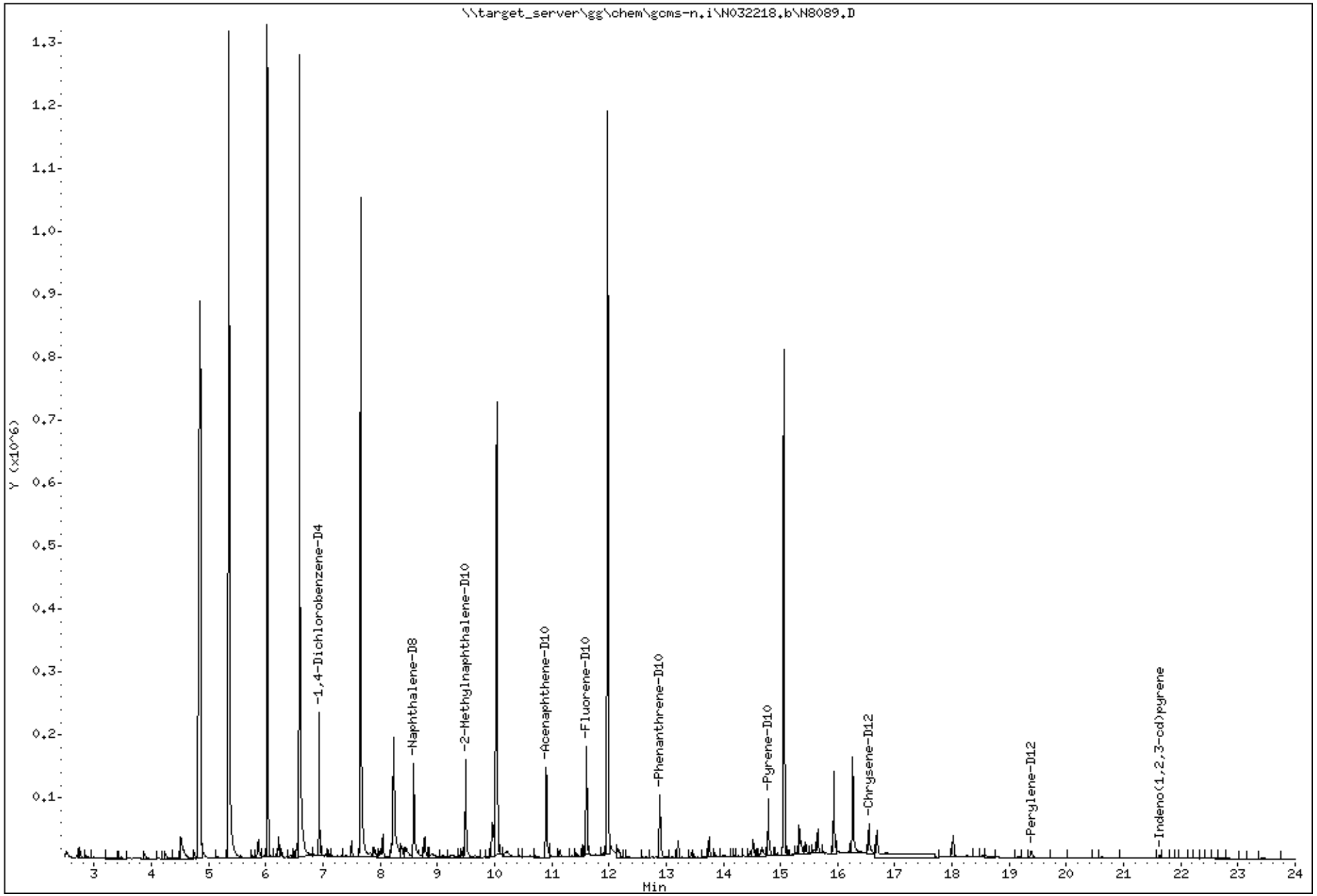
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03240	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	19.483	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	66348	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.561	(1.000)	206429	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	109387	0.88592	34.0	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	93504	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.065)	105815	0.92548	35.5	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	133581	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.894)	76673	0.90080	34.5	
*	76 Chrysene-D12	240	16.544	16.516	(1.000)	42453	0.80000		
*	83 Perylene-D12	264	19.388	19.343	(1.000)	24625	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8089.D
Date : 22-MAR-2018 13:05
Client ID: CHAAP-20B-SS02 Instrument: gcms-n.i
Sample Info: SL2133-15



Katahdin Analytical Services 1000073

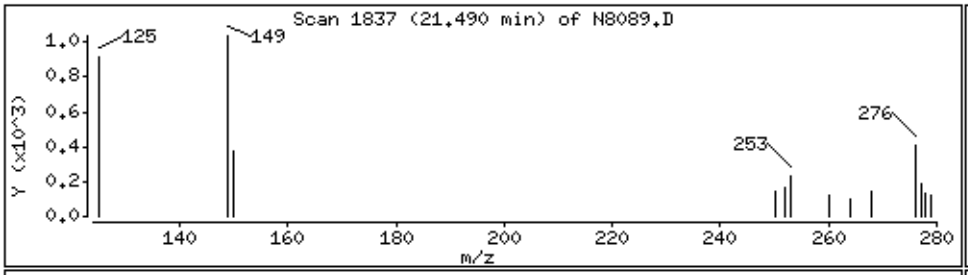
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8089.D

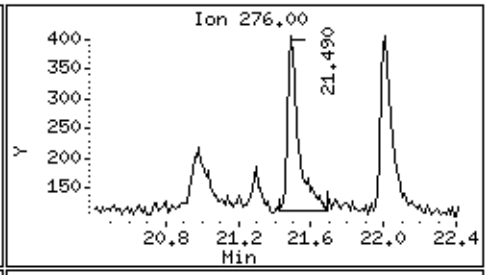
Date : 22-MAR-2018 13:05

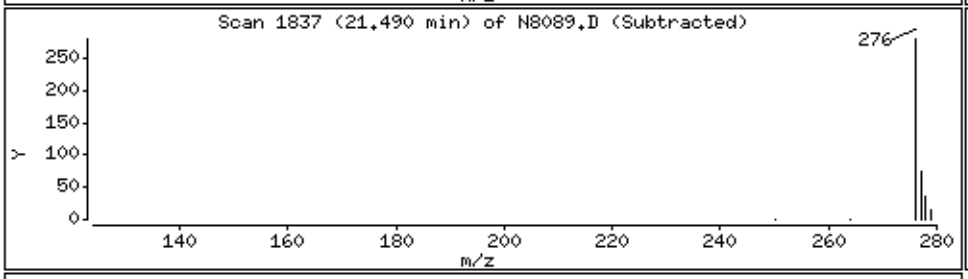
Client ID: CHAAP-20B-SS02 Instrument: gcms-n.i

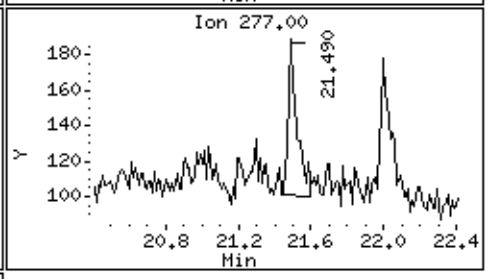
Sample Info: SL2133-15

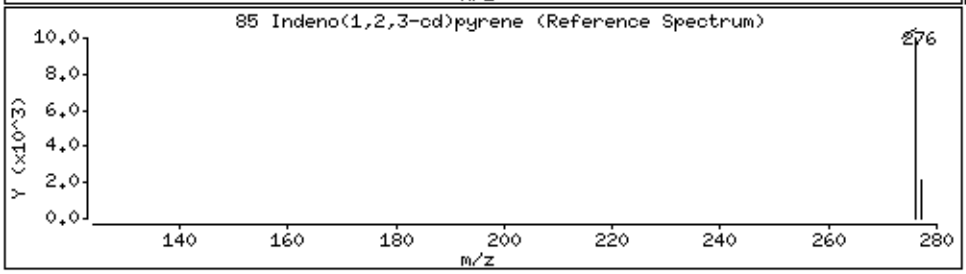
85 Indeno(1,2,3-cd)pyrene Concentration: 2.09 ug/Kgdrywt











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-16
Client ID: CHAAP-20B-SS03
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8090.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	25.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	25.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	25.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	25.	4.1	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Fluoranthene	J	2.8	ug/Kgdrywt	1	20	25.	2.3	13.
Pyrene	J	3.0	ug/Kgdrywt	1	20	25.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	25.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.0	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.9	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	25.	4.2	13.
Indeno(1,2,3-cd)pyrene	J	3.1	ug/Kgdrywt	1	20	25.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Benzo(g,h,i)perylene	J	3.7	ug/Kgdrywt	1	20	25.	2.5	13.
2-Methylnaphthalene-D10		41.8	%					
Fluorene-D10		50.5	%					
Pyrene-D10		48.6	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8090.D
Report Date: 26-Mar-2018 14:23

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Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8090.D
Lab Smp Id: SL2133-16 Client Smp ID: CHAAP-20B-SS03
Inj Date : 22-MAR-2018 13:37 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-16
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

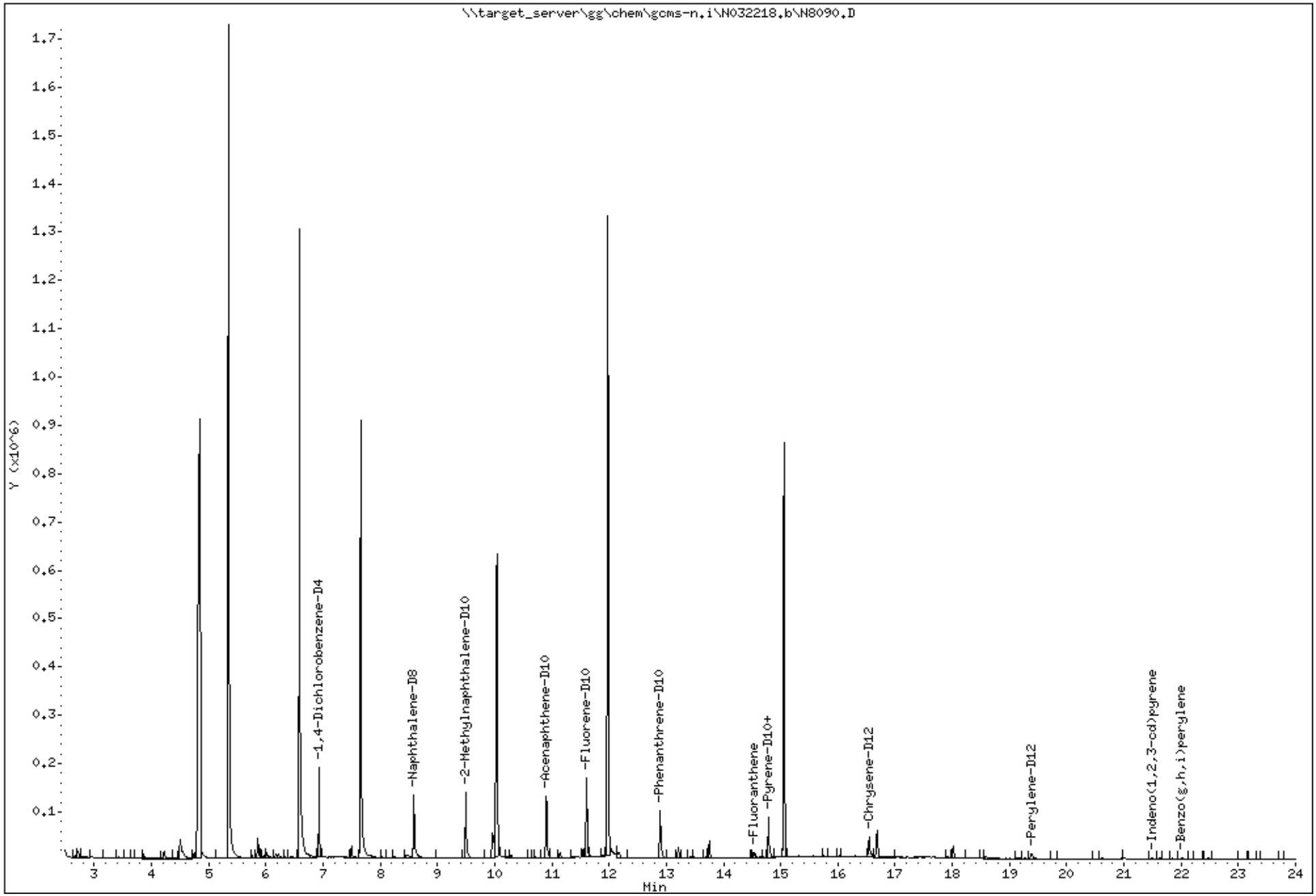
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03050	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	22.772	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
* 10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	61206	0.80000	(Q)	
* 26 Naphthalene-D8	136	8.591	8.561	(1.000)	193802	0.80000		
$ 32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	97012	0.83689	35.5	
* 47 Acenaphthene-D10	164	10.904	10.893	(1.000)	84232	0.80000		
$ 55 Fluorene-D10	174	11.612	11.591	(1.065)	103747	1.00727	42.8	
* 65 Phenanthrene-D10	188	12.895	12.874	(1.000)	122311	0.80000		
70 Fluoranthene	202	14.527	14.499	(1.127)	11215	0.06622	2.81(a)	
$ 71 Pyrene-D10	212	14.790	14.762	(0.894)	78483	0.97147	41.2	
72 Pyrene	202	14.809	14.790	(0.895)	10503	0.07118	3.02(a)	
* 76 Chrysene-D12	240	16.544	16.516	(1.000)	40294	0.80000		
* 83 Perylene-D12	264	19.389	19.343	(1.000)	25945	0.80000		
85 Indeno(1,2,3-cd)pyrene	276	21.490	21.410	(1.299)	1646	0.07231	3.07(a)	
87 Benzo(g,h,i)perylene	276	22.001	21.921	(1.135)	2330	0.08656	3.67(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8090.D
Date : 22-MAR-2018 13:37
Client ID: CHAAP-20B-SS03 Instrument: gcms-n.i
Sample Info: SL2133-16



Katahdin Analytical Services 1000077

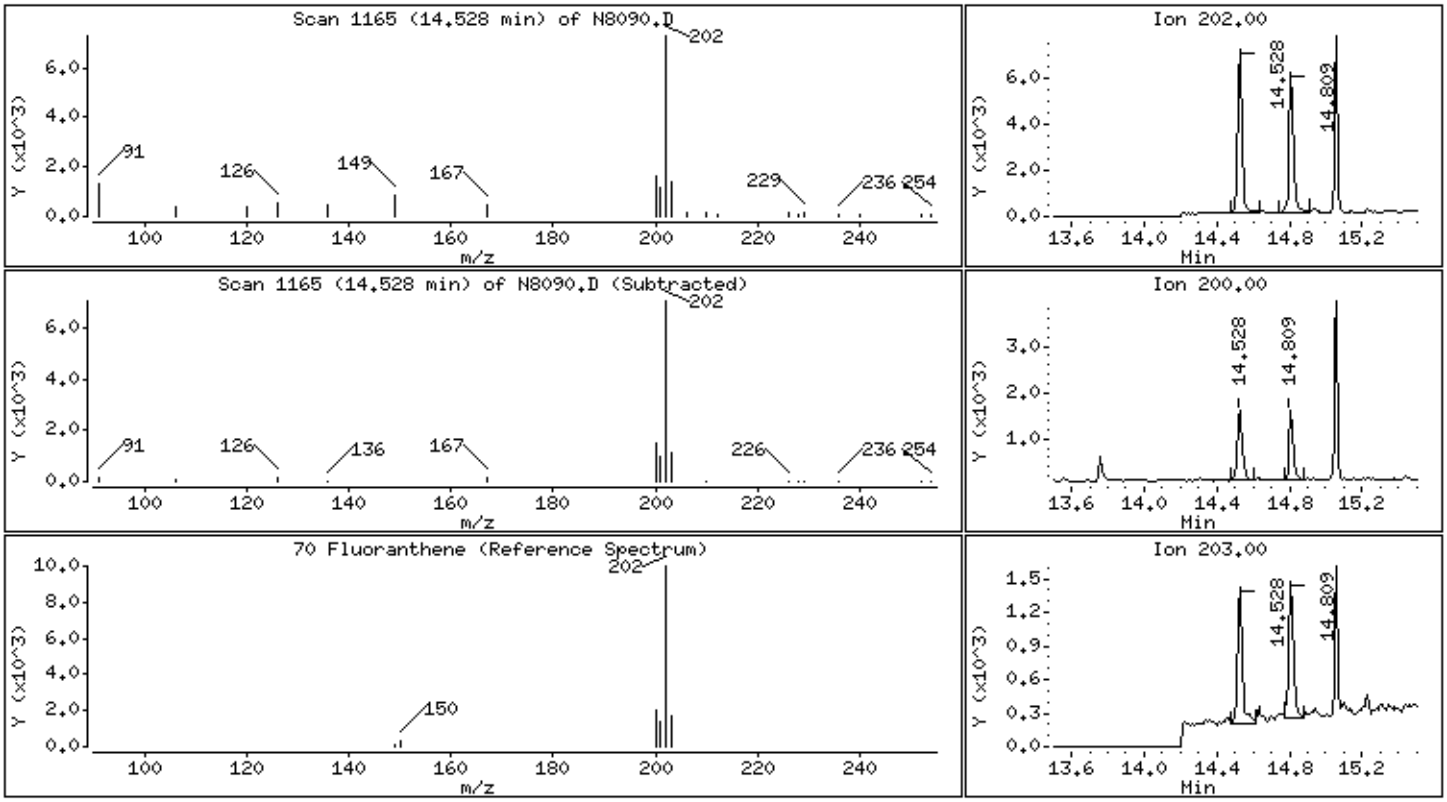
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8090.D

Date : 22-MAR-2018 13:37

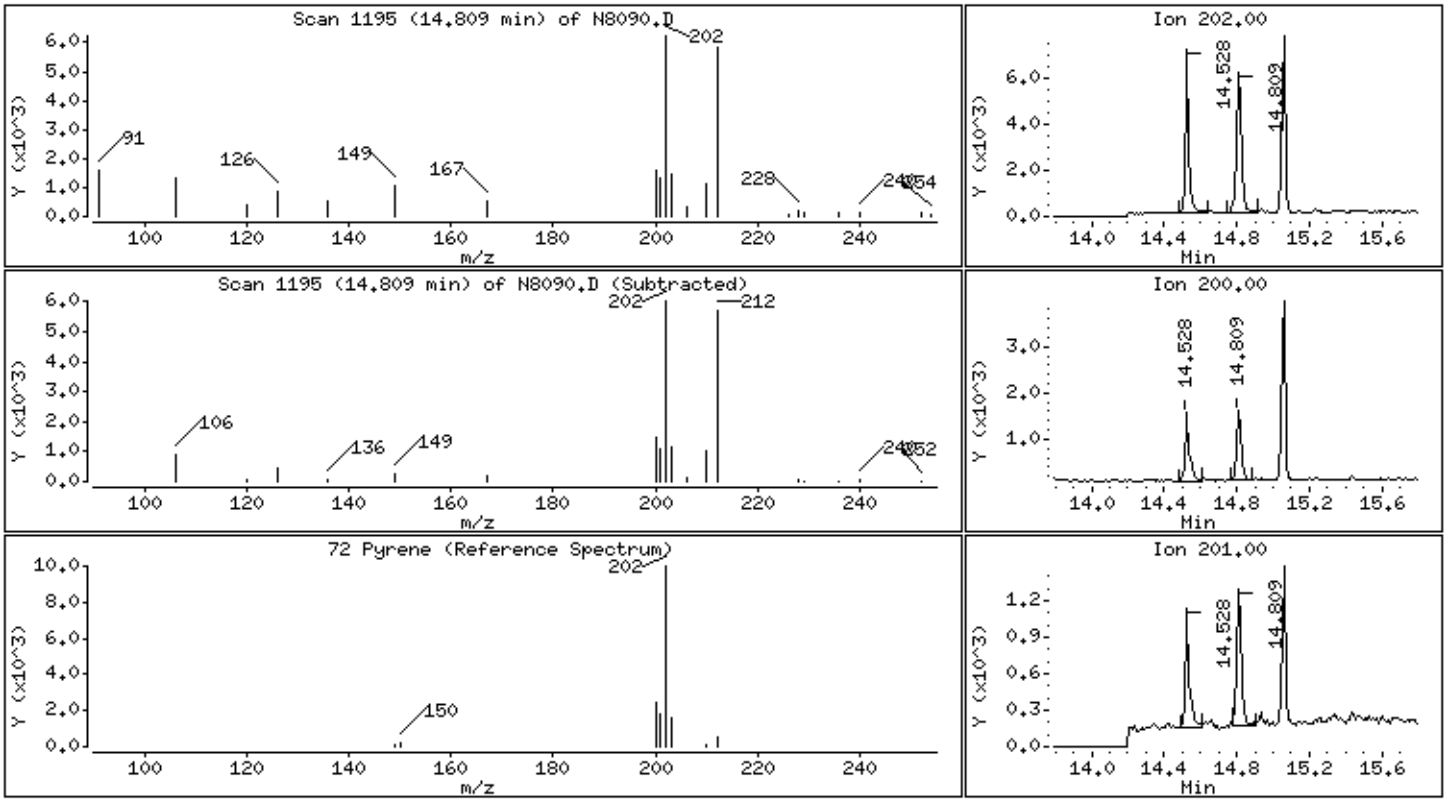
Client ID: CHAAP-20B-SS03 Instrument: gcms-n.i

Sample Info: SL2133-16

70 Fluoranthene Concentration: 2.81 ug/Kgdrywt



72 Pyrene Concentration: 3.02 ug/Kgdrywt



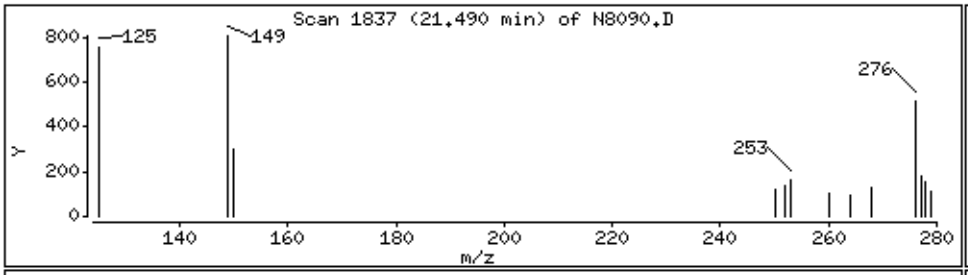
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8090.D

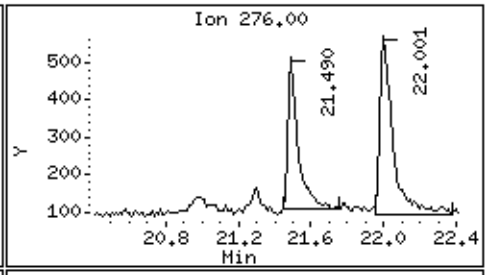
Date : 22-MAR-2018 13:37

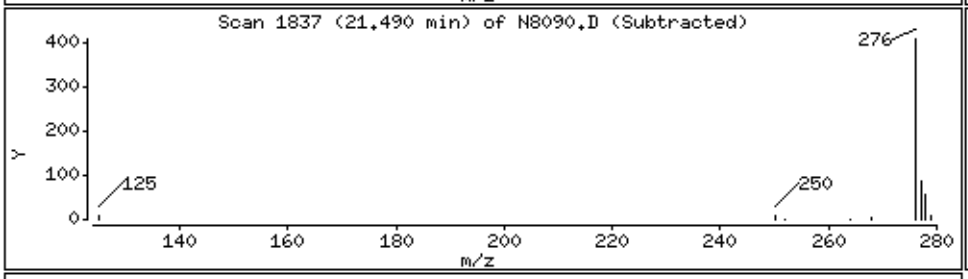
Client ID: CHAAP-20B-SS03 Instrument: gcms-n.i

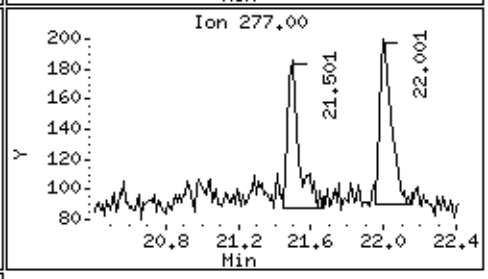
Sample Info: SL2133-16

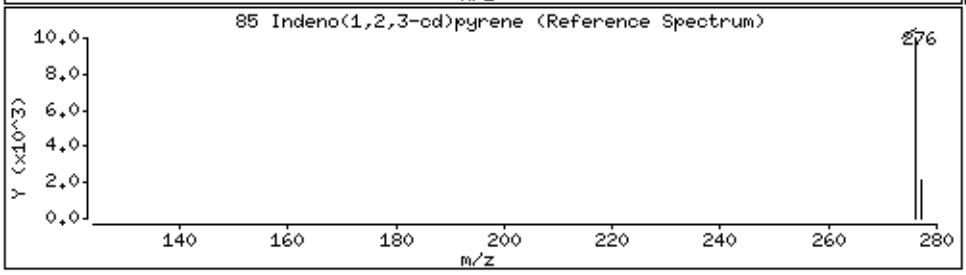
85 Indeno(1,2,3-cd)pyrene Concentration: 3.07 ug/Kgdrywt



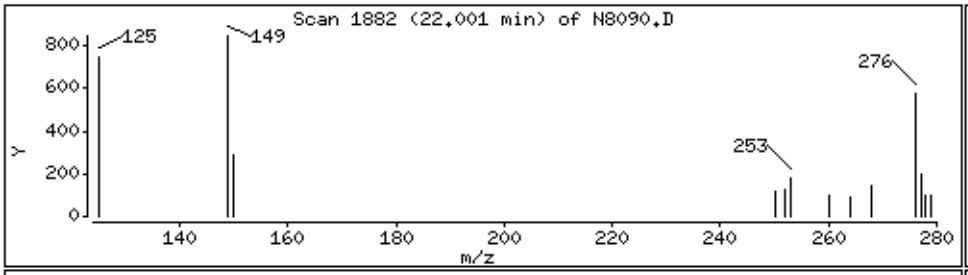


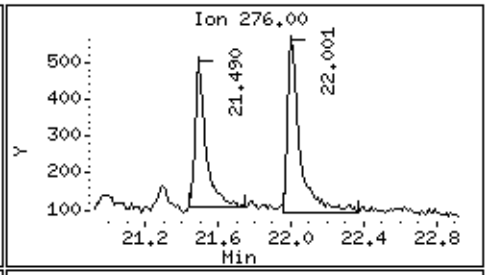


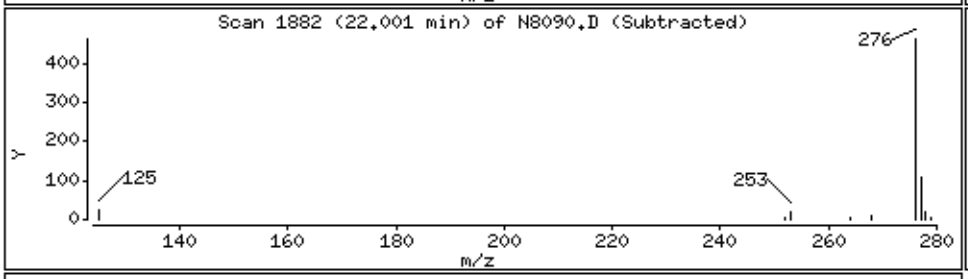


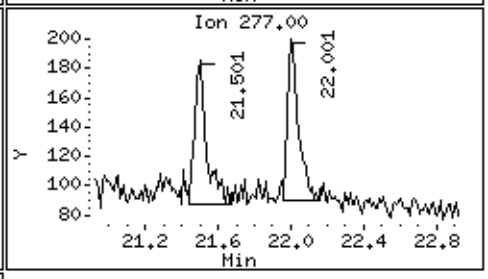


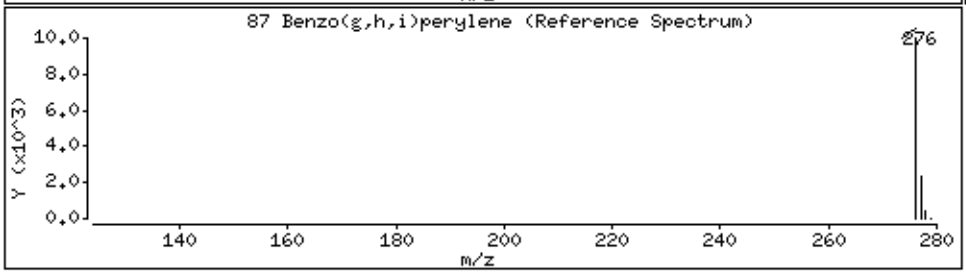
87 Benzo(g,h,i)perylene Concentration: 3.67 ug/Kgdrywt











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-17
Client ID: CHAAP-20B-SS04
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8091.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	23.	2.6	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	23.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	U	12	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	U	12	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	J	3.6	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		58.0	%					
Fluorene-D10		56.0	%					
Pyrene-D10		44.2	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8091.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8091.D
Lab Smp Id: SL2133-17 Client Smp ID: CHAAP-20B-SS04
Inj Date : 22-MAR-2018 14:09 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-17
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

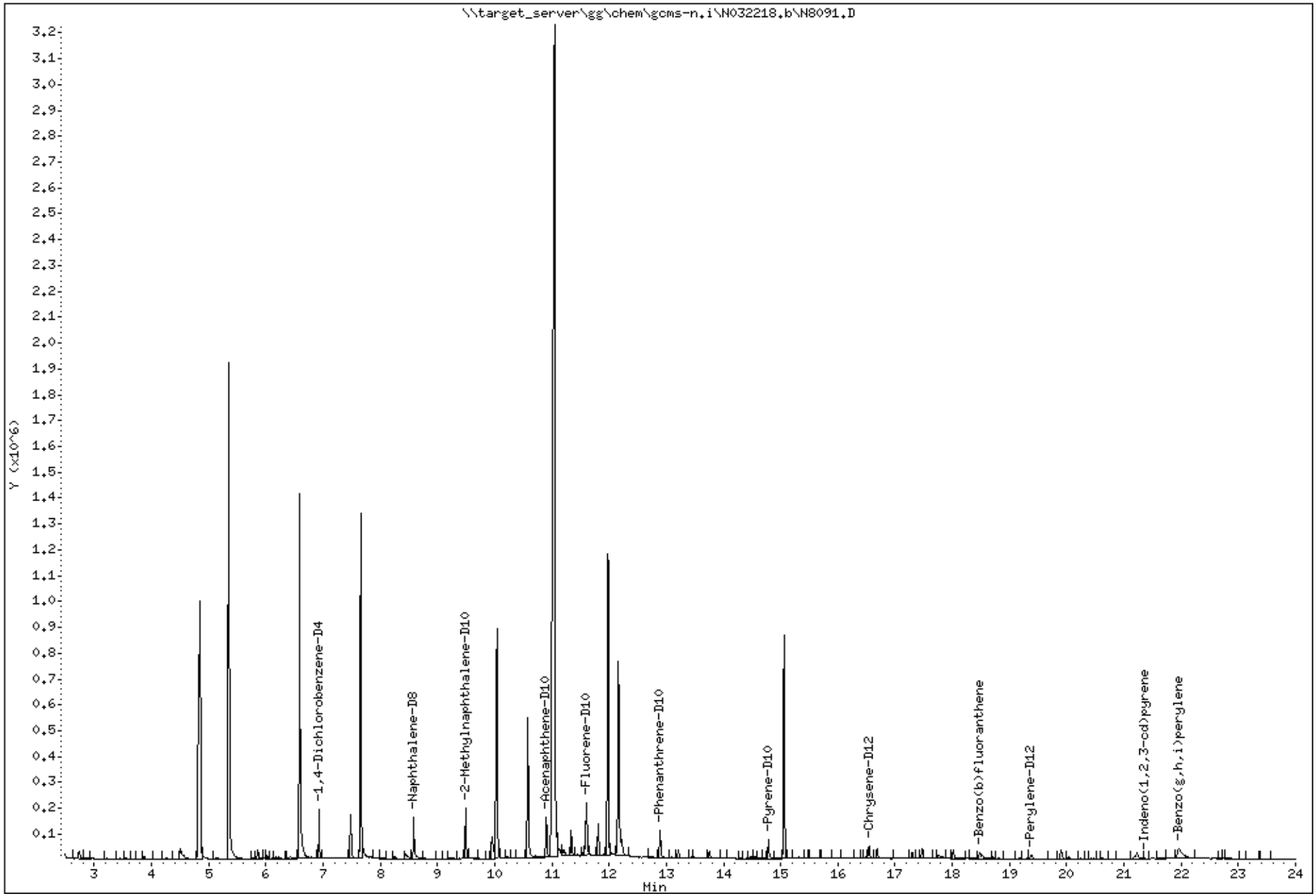
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03280	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	21.711	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	60962	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.581	8.561	(1.000)	195440	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.488	9.479	(1.106)	135543	1.15948	45.2	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	87371	0.80000		
$	55 Fluorene-D10	174	11.613	11.591	(1.065)	120080	1.12396	43.8	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	127033	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.894)	72085	0.88270	34.4	
*	76 Chrysene-D12	240	16.544	16.516	(1.000)	40731	0.80000		
*	83 Perylene-D12	264	19.377	19.343	(1.000)	25461	0.80000		
	87 Benzo(g,h,i)perylene	276	22.001	21.921	(1.135)	2453	0.09286	3.62(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8091.D
Date : 22-MAR-2018 14:09
Client ID: CHAAP-20B-SS04
Instrument: gcms-n.i
Sample Info: SL2133-17



Katahdin Analytical Services 1000082

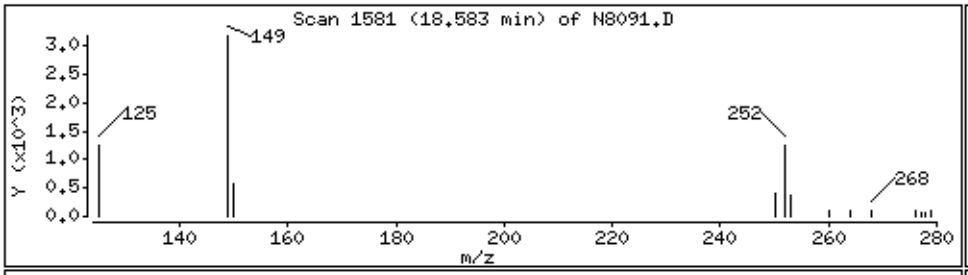
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8091.D

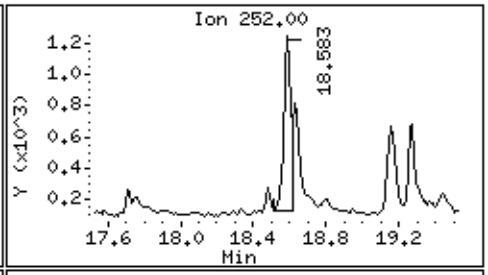
Date : 22-MAR-2018 14:09

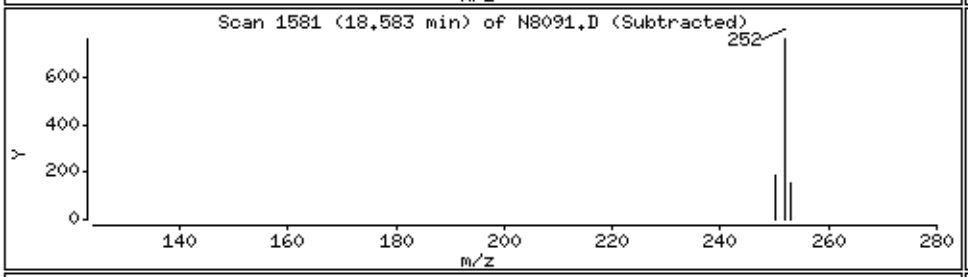
Client ID: CHAAP-20B-SS04 Instrument: gcms-n.i

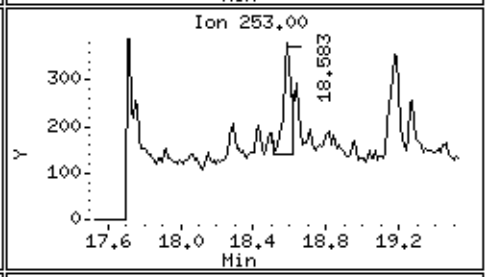
Sample Info: SL2133-17

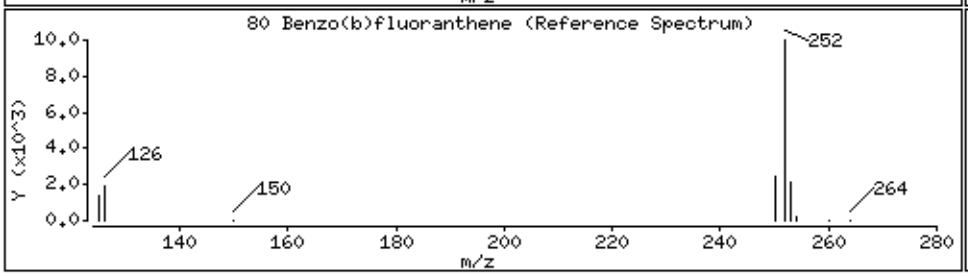
80 Benzo(b)fluoranthene Concentration: 2.35 ug/Kgdrywt

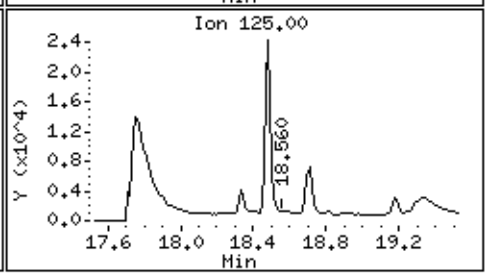




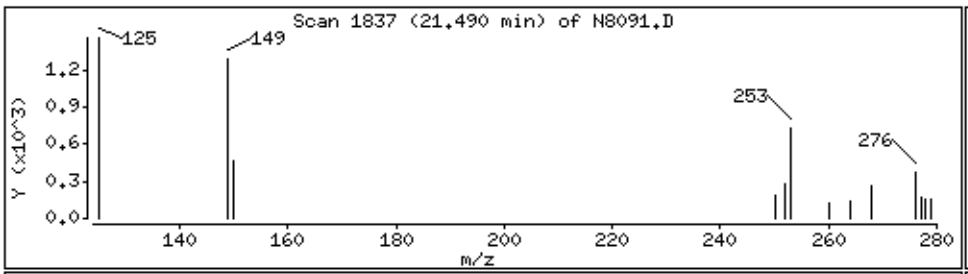


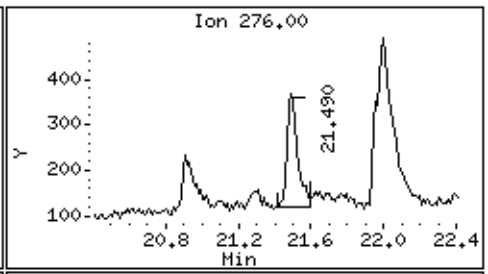


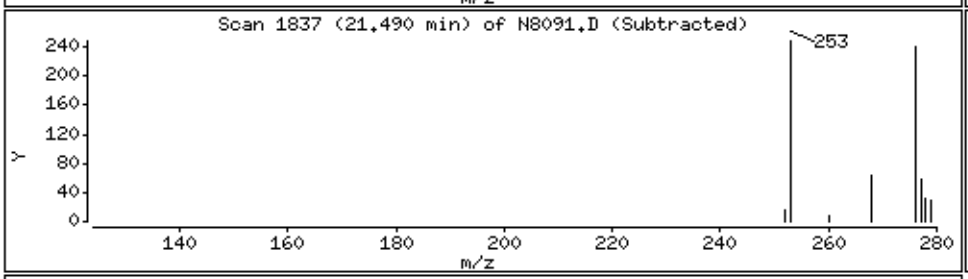


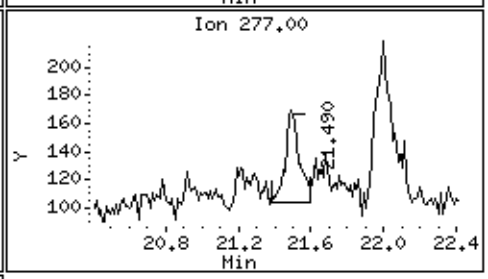


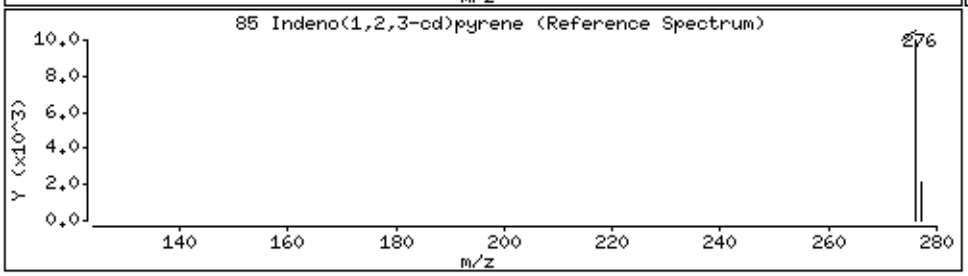
85 Indeno(1,2,3-cd)pyrene Concentration: 1.77 ug/Kgdrywt











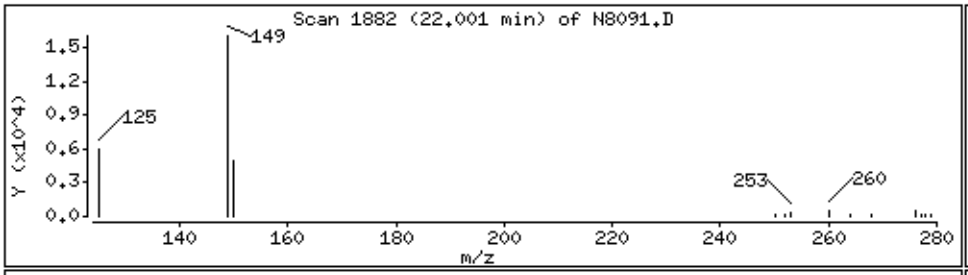
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8091.D

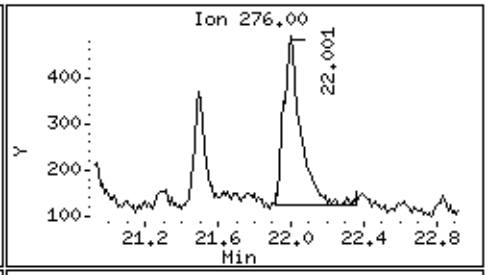
Date : 22-MAR-2018 14:09

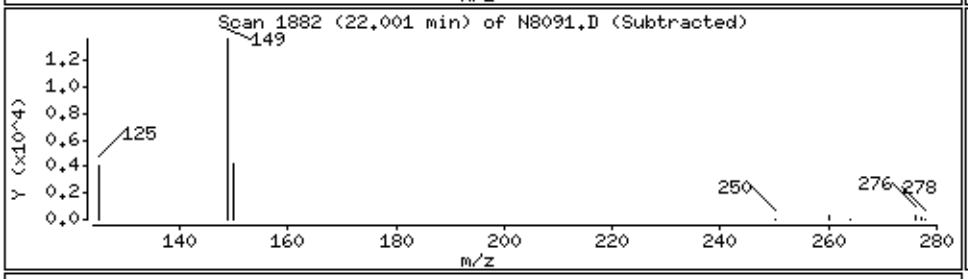
Client ID: CHAAP-20B-SS04 Instrument: gcms-n.i

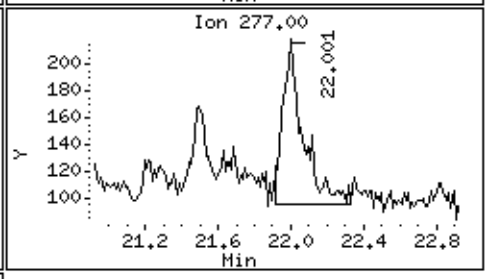
Sample Info: SL2133-17

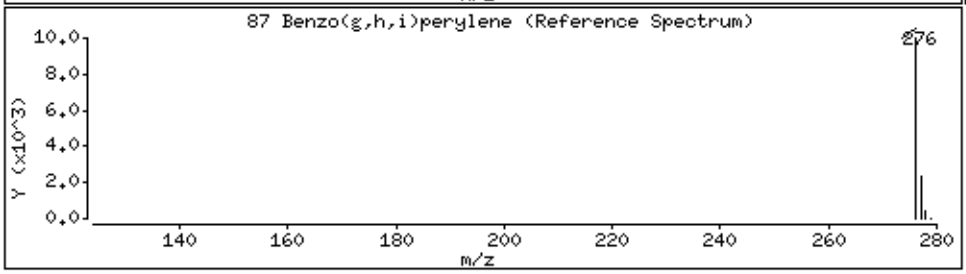
87 Benzo(g,h,i)perylene Concentration: 3.62 ug/Kgdrywt











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-18
Client ID: CHAAP-20B-SS05
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8092.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 77.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	13	ug/Kgdrywt	1	20	25.	3.3	13.
2-Methylnaphthalene	U	13	ug/Kgdrywt	1	20	25.	2.8	13.
Acenaphthylene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Acenaphthene	U	13	ug/Kgdrywt	1	20	25.	1.9	13.
Fluorene	U	13	ug/Kgdrywt	1	20	25.	4.0	13.
Phenanthrene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Anthracene	U	13	ug/Kgdrywt	1	20	25.	1.5	13.
Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Pyrene	U	13	ug/Kgdrywt	1	20	25.	2.7	13.
Benzo(a)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Chrysene	U	13	ug/Kgdrywt	1	20	25.	2.2	13.
Benzo(b)Fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.0	13.
Benzo(k)fluoranthene	U	13	ug/Kgdrywt	1	20	25.	3.9	13.
Benzo(a)pyrene	U	13	ug/Kgdrywt	1	20	25.	4.2	13.
Indeno(1,2,3-cd)pyrene	U	13	ug/Kgdrywt	1	20	25.	2.4	13.
Dibenzo(a,h)anthracene	U	13	ug/Kgdrywt	1	20	25.	2.3	13.
Benzo(g,h,i)perylene	U	13	ug/Kgdrywt	1	20	25.	2.5	13.
2-Methylnaphthalene-D10		49.1	%					
Fluorene-D10		48.2	%					
Pyrene-D10		39.5	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8092.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8092.D
Lab Smp Id: SL2133-18 Client Smp ID: CHAAP-20B-SS05
Inj Date : 22-MAR-2018 14:40 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-18
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

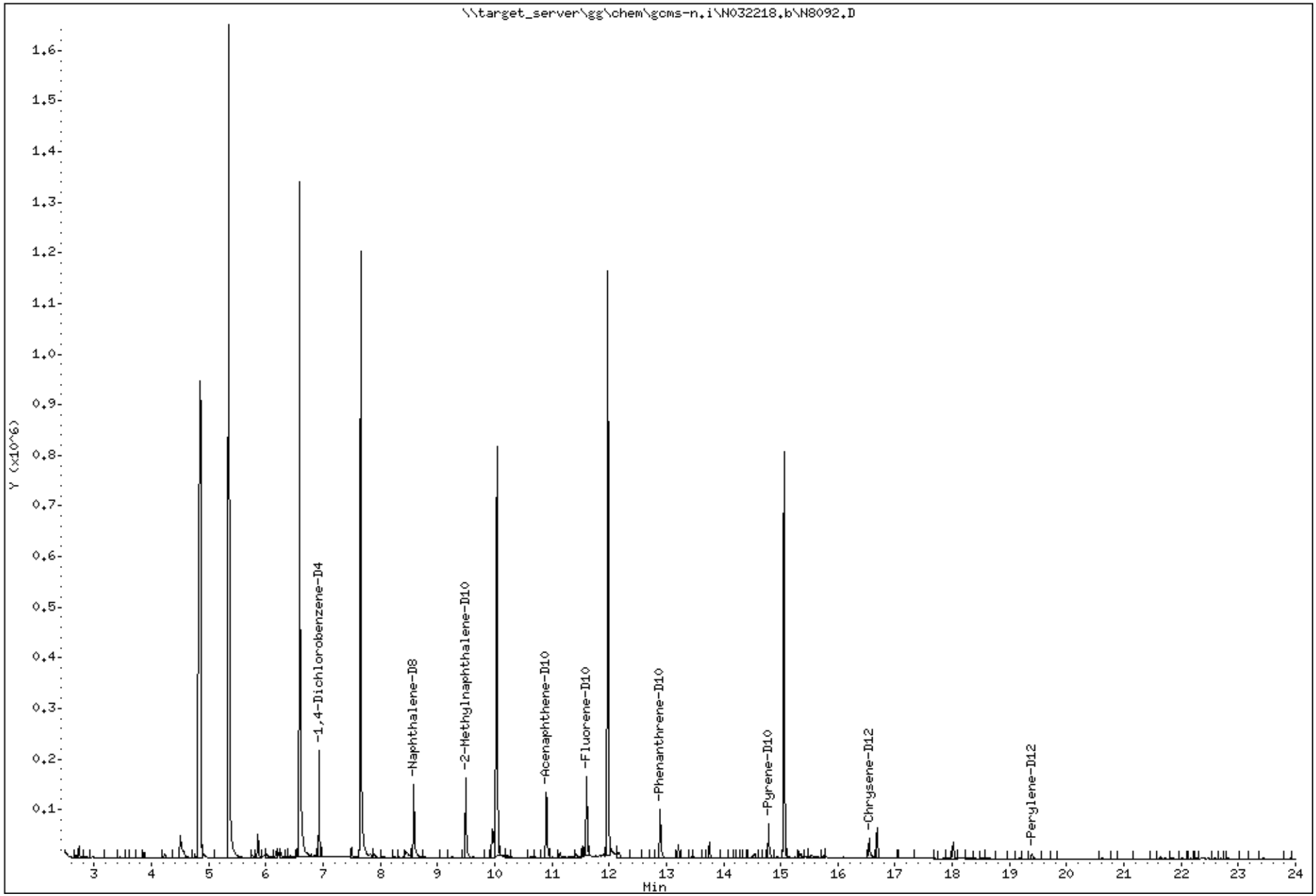
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03070	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	22.955	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	63921	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.581	8.561	(1.000)	201950	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.107)	118663	0.98236	41.5	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	87846	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.065)	103480	0.96335	40.7	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	120101	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.894)	58786	0.79037	33.4	
*	76 Chrysene-D12	240	16.544	16.516	(1.000)	37097	0.80000		
*	83 Perylene-D12	264	19.389	19.343	(1.000)	21737	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8092.D
Date : 22-MAR-2018 14:40
Client ID: CHAAP-20B-SS05 Instrument: gcms-n.i
Sample Info: SL2133-18



Katahdin Analytical Services 1000087

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8093.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	23.	2.5	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	23.	1.7	12.
Fluorene	U	12	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	U	12	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	U	12	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	U	12	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	J	2.6	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		45.2	%					
Fluorene-D10		48.4	%					
Pyrene-D10		45.2	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8093.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8093.D
Lab Smp Id: SL2133-19 Client Smp ID: CHAAP-20B-SS06
Inj Date : 22-MAR-2018 15:12 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-19
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03310	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

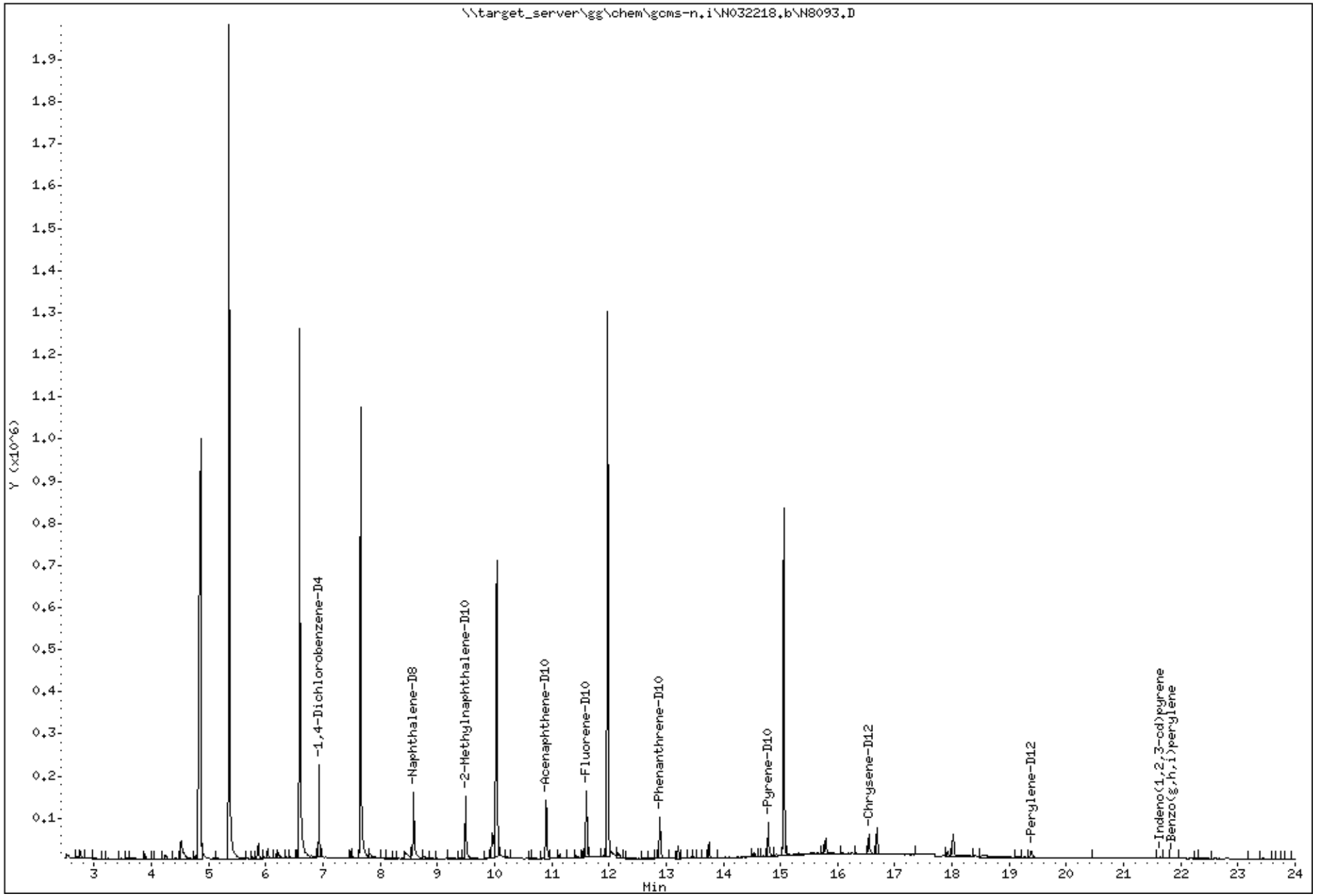
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	63451	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.581	8.561	(1.000)	204859	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.107)	110649	0.90301	34.7	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	90085	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.065)	106771	0.96928	37.3	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	127936	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.894)	74849	0.90504	34.8	
*	76 Chrysene-D12	240	16.544	16.516	(1.000)	41249	0.80000		
*	83 Perylene-D12	264	19.388	19.343	(1.000)	26285	0.80000		
	85 Indeno(1,2,3-cd)pyrene	276	21.489	21.410	(1.299)	1599	0.06862	2.64(aM)	M6

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

2:44 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8093.D
Date : 22-MAR-2018 15:12
Client ID: CHAAP-20B-SS06 Instrument: gcms-n.i
Sample Info: SL2133-19



Katahdin Analytical Services 1000090

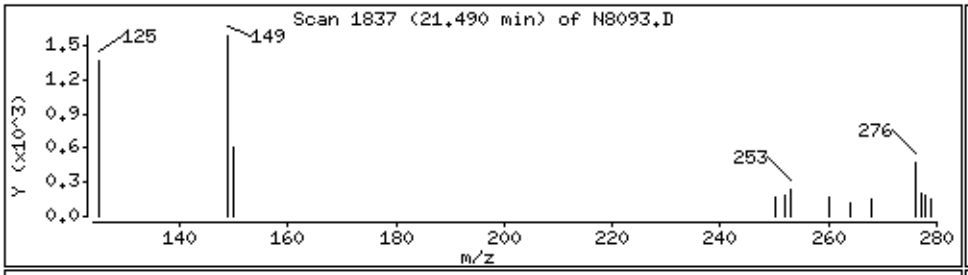
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8093.D

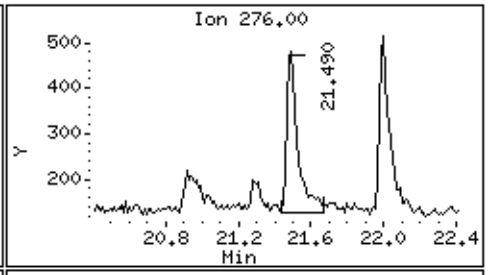
Date : 22-MAR-2018 15:12

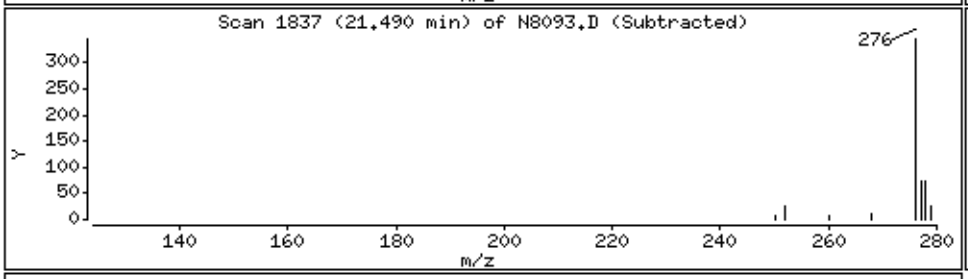
Client ID: CHAAP-20B-SS06 Instrument: gcms-n.i

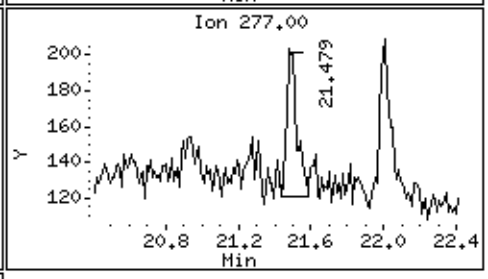
Sample Info: SL2133-19

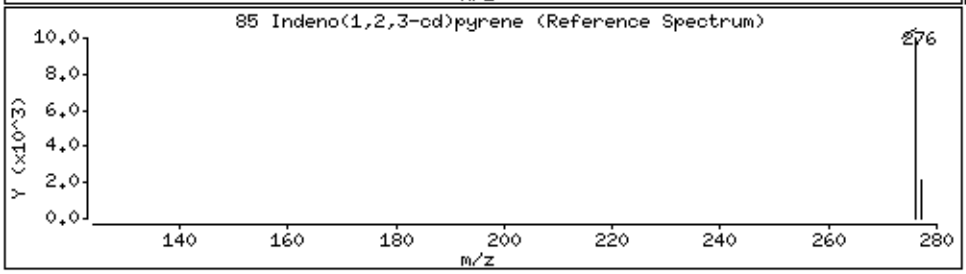
85 Indeno(1,2,3-cd)pyrene Concentration: 2.64 ug/Kgdrywt



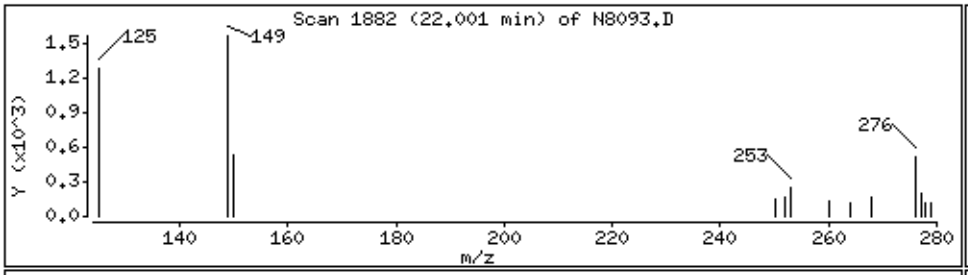


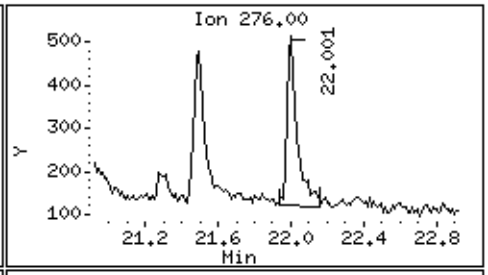


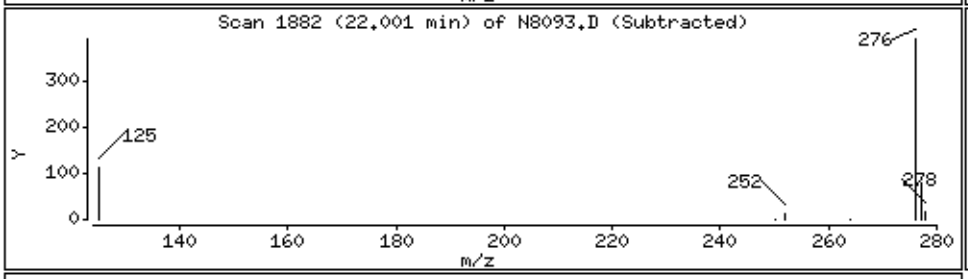


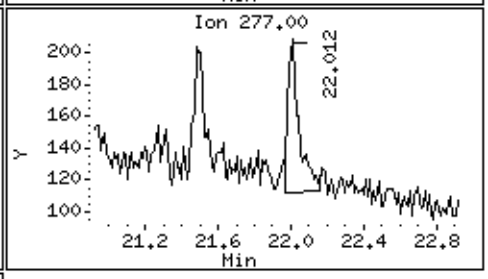


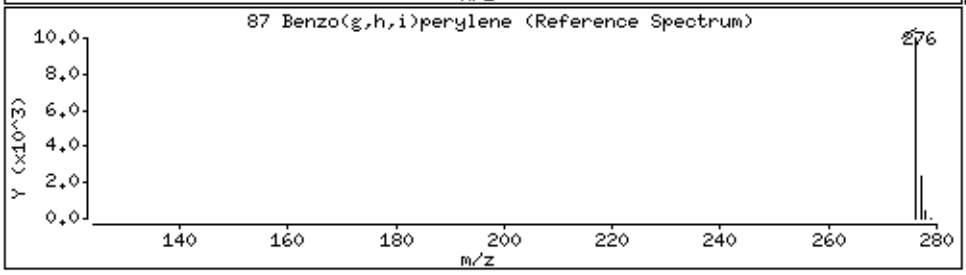
87 Benzo(g,h,i)perylene Concentration: 2.27 ug/Kgdrywt







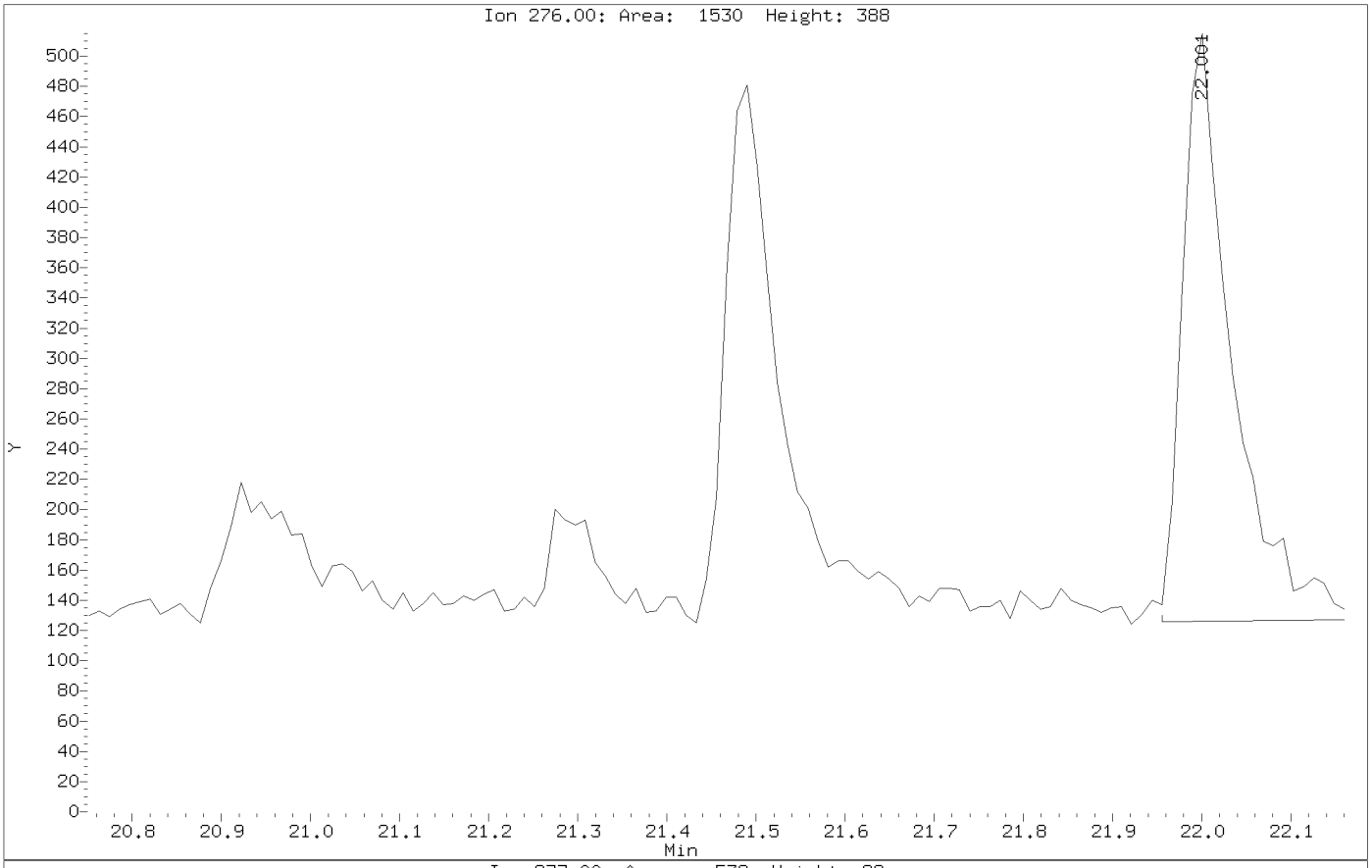


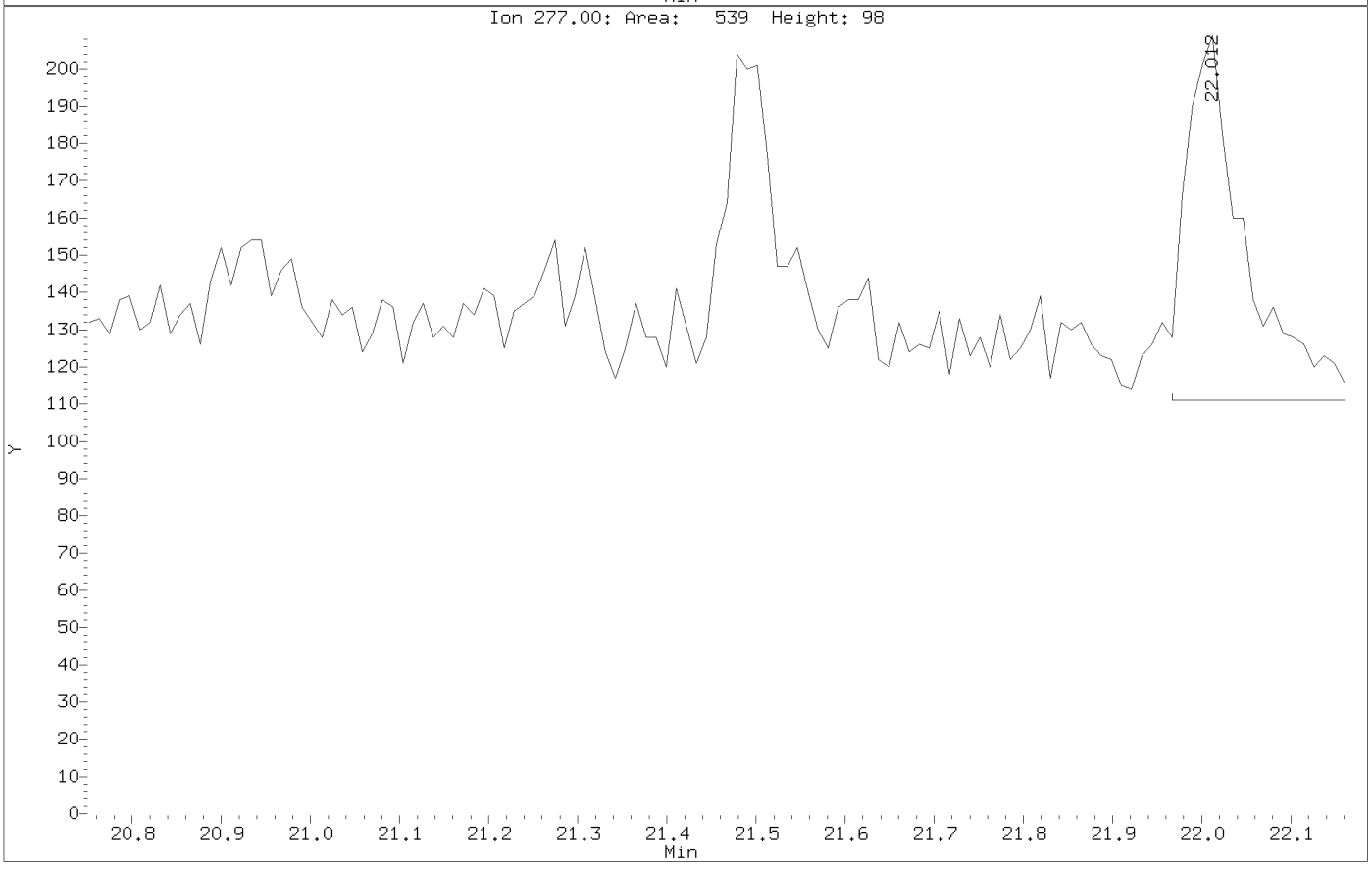


Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8093.D
Injection Date: 22-MAR-2018 15:12
Instrument: gcms-n.i
Client Sample ID: CHAAP-20B-SS06

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

BEFORE MANUAL INTEGRATION





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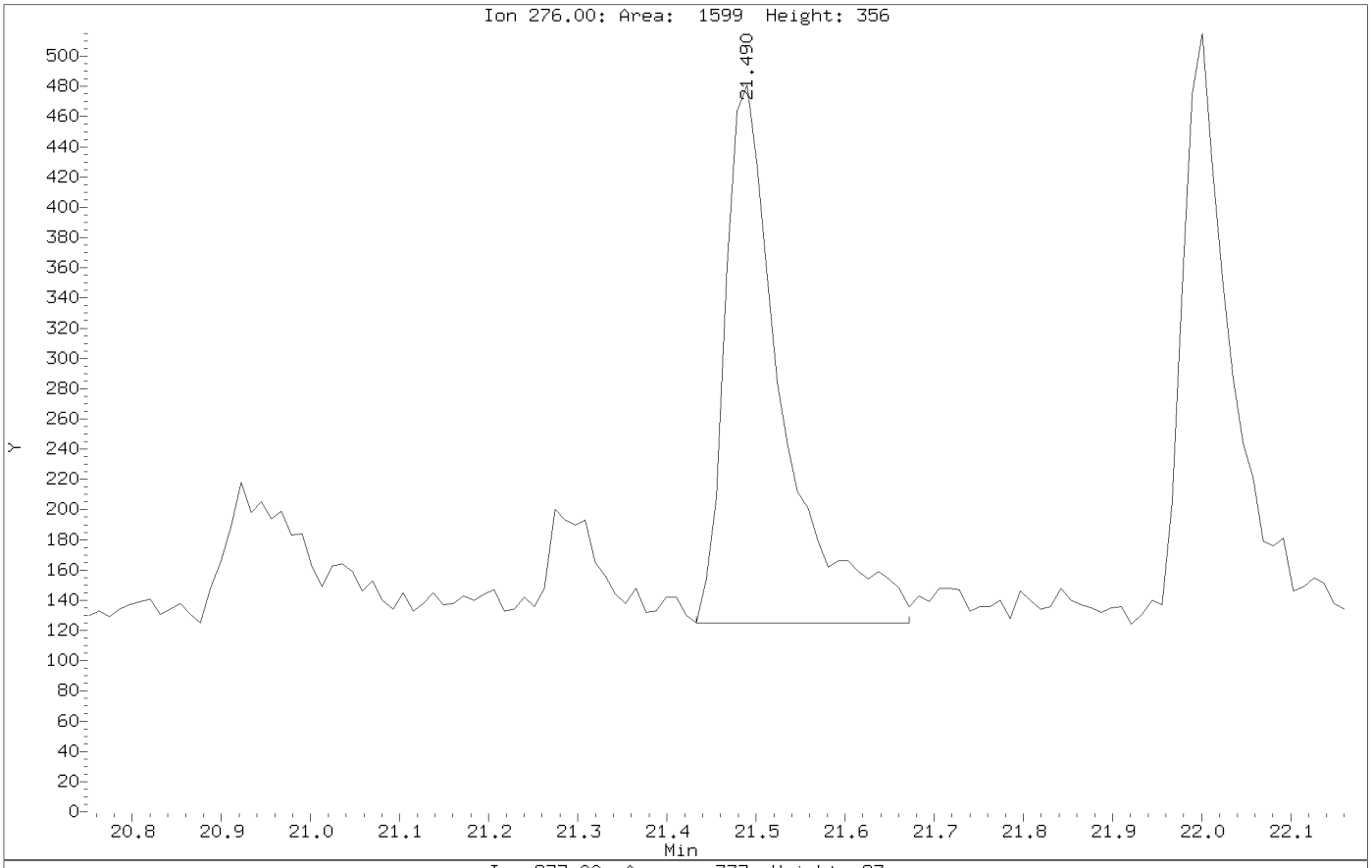
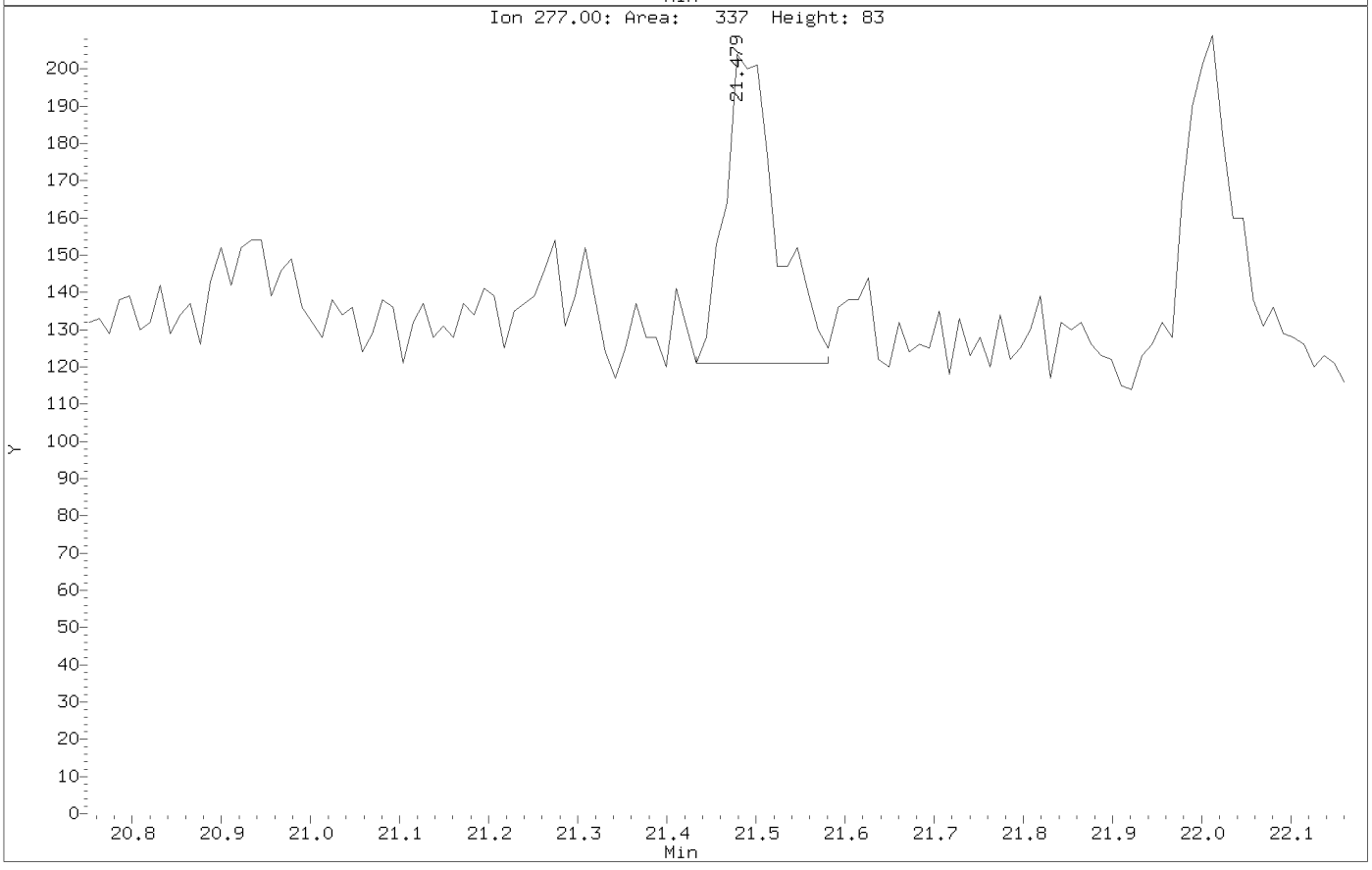
Injection Date: 22-MAR-2018 15:12
Instrument: gcms-n.i
Client Sample ID: CHAAP-20B-SS06

Compound: Indeno(1,2,3-cd)pyrene
CAS Number: 193-39-5

AFTER MANUAL INTEGRATION





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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-20
Client ID: CHAAP-20B-EB-031518
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8028.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG225023

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	U	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		84.4	%					
Fluorene-D10		78.5	%					
Pyrene-D10		95.8	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8028.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8028.D
Lab Smp Id: SL2133-20 Client Smp ID: CHAAP-20B-EB-031518
Inj Date : 20-MAR-2018 12:47
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-20
Misc Info : WG225084,WG225023,WG224895-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

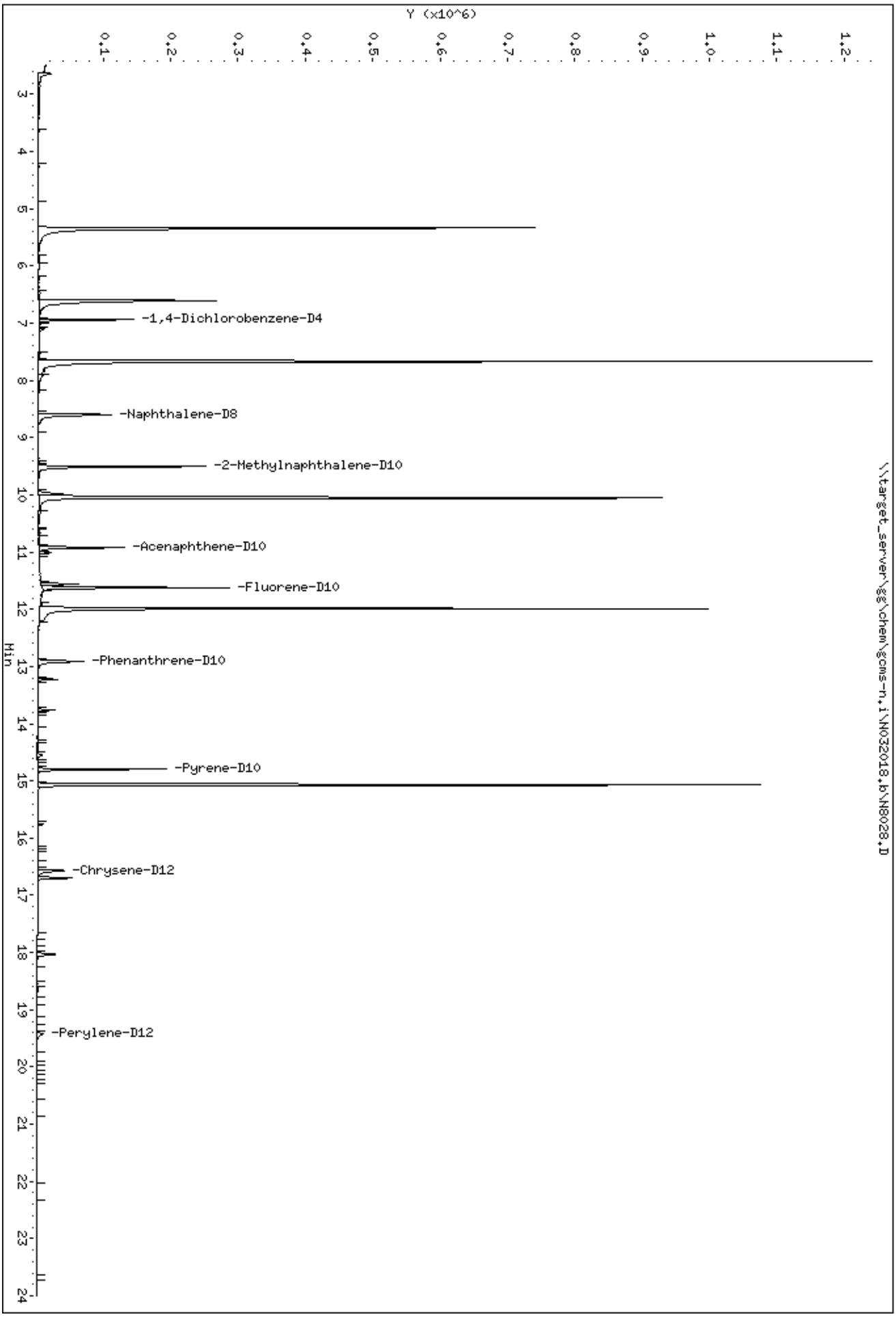
Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.030	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
* 10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	55126	0.80000	(aQ)	
* 26 Naphthalene-D8	136	8.601	8.591	(1.000)	186411	0.80000	(a)	
$ 32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.105)	185038	1.68723	1.64	
* 47 Acenaphthene-D10	164	10.926	10.926	(1.000)	83959	0.80000	(a)	
$ 55 Fluorene-D10	174	11.623	11.623	(1.064)	162287	1.56922	1.52	
* 65 Phenanthrene-D10	188	12.906	12.906	(1.000)	124654	0.80000	(a)	
$ 71 Pyrene-D10	212	14.799	14.799	(0.893)	175670	1.91667	1.86	
* 76 Chrysene-D12	240	16.572	16.563	(1.000)	51896	0.80000	(a)	
* 83 Perylene-D12	264	19.423	19.422	(1.000)	30026	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.


Data File: \\target_server\gg\chem\gcms-n,i\N032018,b\N8028.D
Date : 20-MAR-2018 12:47
Client ID: CHAAP-20B-EB-031518
Sample Info: SL2133-20
Instrument: gcms-n,i
\\target_server\gg\chem\gcms-n,i\N032018,b\N8028.D
Y (x10^6)
Min
-1,4-Dichlorobenzene-D4
-Naphthalene-D8
-2-Methylnaphthalene-D10
-Acenaphthene-D10
-Fluorene-D10
-Phenanthrene-D10
-Pyrene-D10
-Chrysene-D12
-Perylene-D12

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-21
Client ID: CHAAP-20B-SS102
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8096.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 81.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	24.	3.1	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	24.	2.6	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	U	12	ug/Kgdrywt	1	20	24.	3.8	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	24.	1.4	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	24.	2.5	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	U	12	ug/Kgdrywt	1	20	24.	2.0	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	24.	3.7	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene	J	3.0	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		47.6	%					
Fluorene-D10		50.5	%					
Pyrene-D10		42.9	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8096.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8096.D
Lab Smp Id: SL2133-21 Client Smp ID: CHAAP-20B-SS102
Inj Date : 22-MAR-2018 16:48 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-21
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

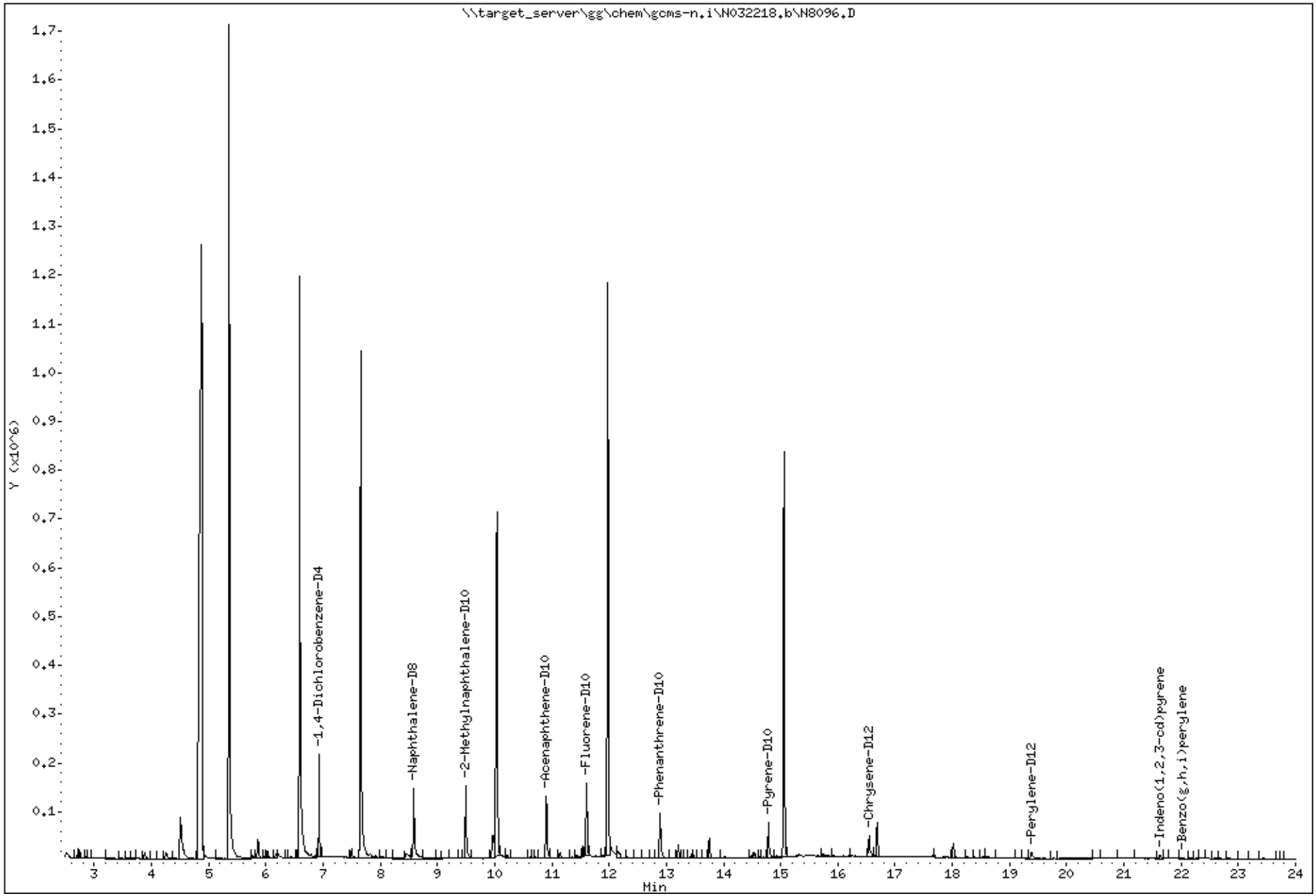
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03060	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	18.630	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
* 10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	60939	0.80000	(Q)	
* 26 Naphthalene-D8	136	8.581	8.561	(1.000)	198782	0.80000		
$ 32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.107)	113268	0.95265	38.3	
* 47 Acenaphthene-D10	164	10.904	10.893	(1.000)	85667	0.80000		
$ 55 Fluorene-D10	174	11.612	11.591	(1.065)	105618	1.00826	40.5	
* 65 Phenanthrene-D10	188	12.895	12.874	(1.000)	124798	0.80000		
$ 71 Pyrene-D10	212	14.790	14.762	(0.894)	69145	0.85846	34.5	
* 76 Chrysene-D12	240	16.544	16.516	(1.000)	40173	0.80000		
* 83 Perylene-D12	264	19.388	19.343	(1.000)	25023	0.80000		
85 Indeno(1,2,3-cd)pyrene	276	21.489	21.410	(1.299)	1670	0.07359	2.96(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8096.D
Date : 22-MAR-2018 16:48
Client ID: CHAAP-20B-SS102 Instrument: gcms-n.i
Sample Info: SL2133-21



Katahdin Analytical Services 1000099

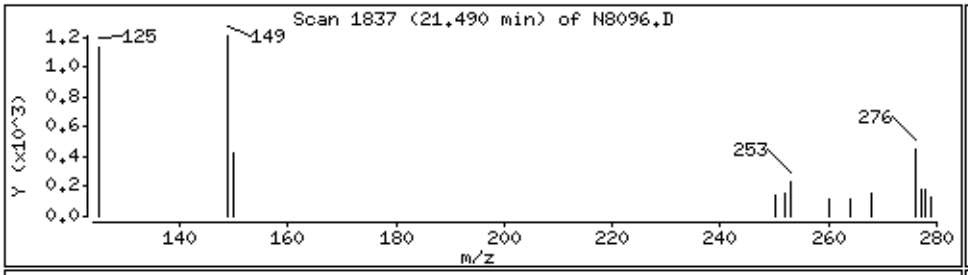
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8096.D

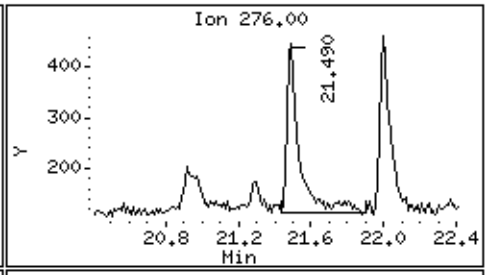
Date : 22-MAR-2018 16:48

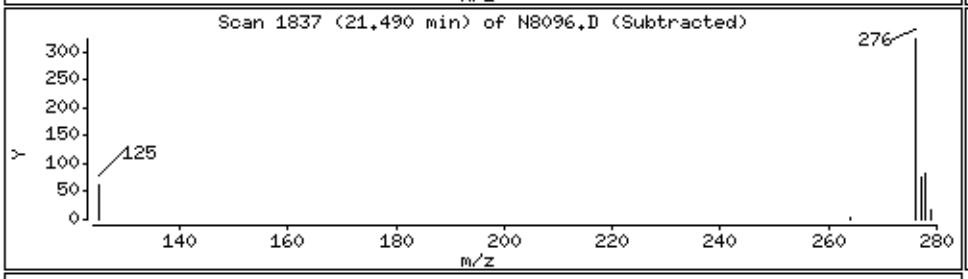
Client ID: CHAAP-20B-SS102 Instrument: gcms-n.i

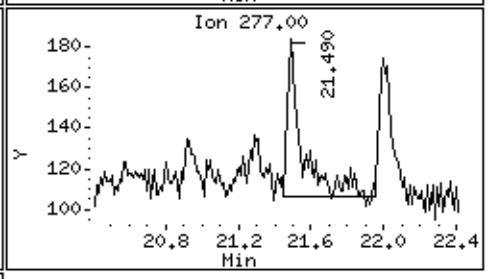
Sample Info: SL2133-21

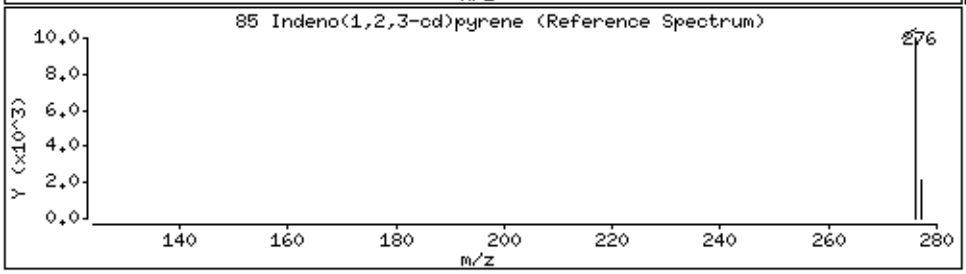
85 Indeno(1,2,3-cd)pyrene Concentration: 2.96 ug/Kgdrywt



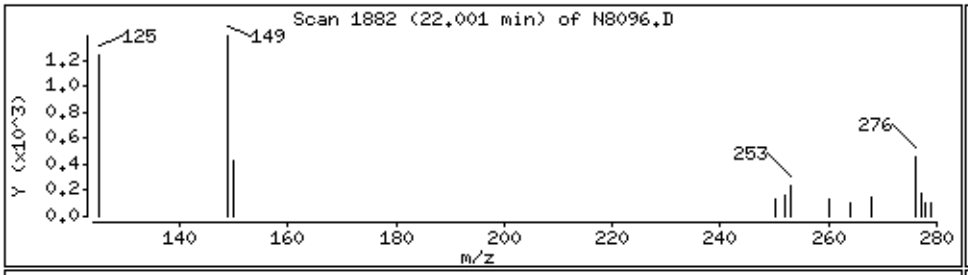


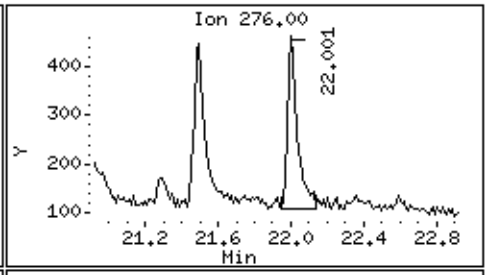


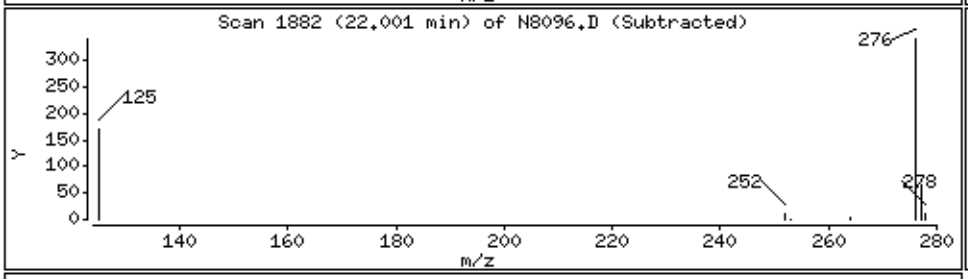


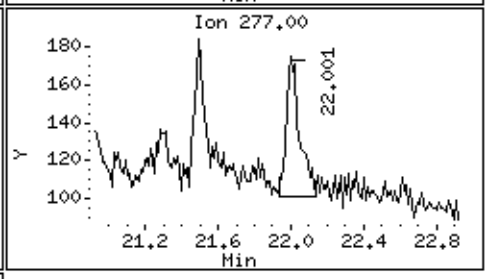


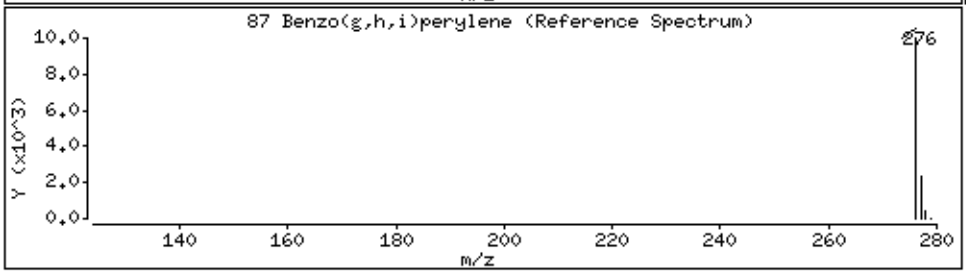
87 Benzo(g,h,i)perylene Concentration: 2.14 ug/Kgdrywt











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-22
Client ID: CHAAP-20B-SS104
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: N8097.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 79.
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12	ug/Kgdrywt	1	20	25.	3.2	12.
2-Methylnaphthalene	U	12	ug/Kgdrywt	1	20	25.	2.8	12.
Acenaphthylene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Acenaphthene	U	12	ug/Kgdrywt	1	20	25.	1.9	12.
Fluorene	U	12	ug/Kgdrywt	1	20	25.	4.0	12.
Phenanthrene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Anthracene	U	12	ug/Kgdrywt	1	20	25.	1.5	12.
Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Pyrene	U	12	ug/Kgdrywt	1	20	25.	2.6	12.
Benzo(a)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Chrysene	U	12	ug/Kgdrywt	1	20	25.	2.1	12.
Benzo(b)Fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.0	12.
Benzo(k)fluoranthene	U	12	ug/Kgdrywt	1	20	25.	3.9	12.
Benzo(a)pyrene	U	12	ug/Kgdrywt	1	20	25.	4.1	12.
Indeno(1,2,3-cd)pyrene	U	12	ug/Kgdrywt	1	20	25.	2.4	12.
Dibenzo(a,h)anthracene	U	12	ug/Kgdrywt	1	20	25.	2.2	12.
Benzo(g,h,i)perylene	U	12	ug/Kgdrywt	1	20	25.	2.5	12.
2-Methylnaphthalene-D10		45.6	%					
Fluorene-D10		45.0	%					
Pyrene-D10		33.3	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8097.D
Report Date: 26-Mar-2018 14:31

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8097.D
Lab Smp Id: SL2133-22 Client Smp ID: CHAAP-20B-SS104
Inj Date : 22-MAR-2018 17:20 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : SL2133-22
Misc Info : WG225233,WG225022,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

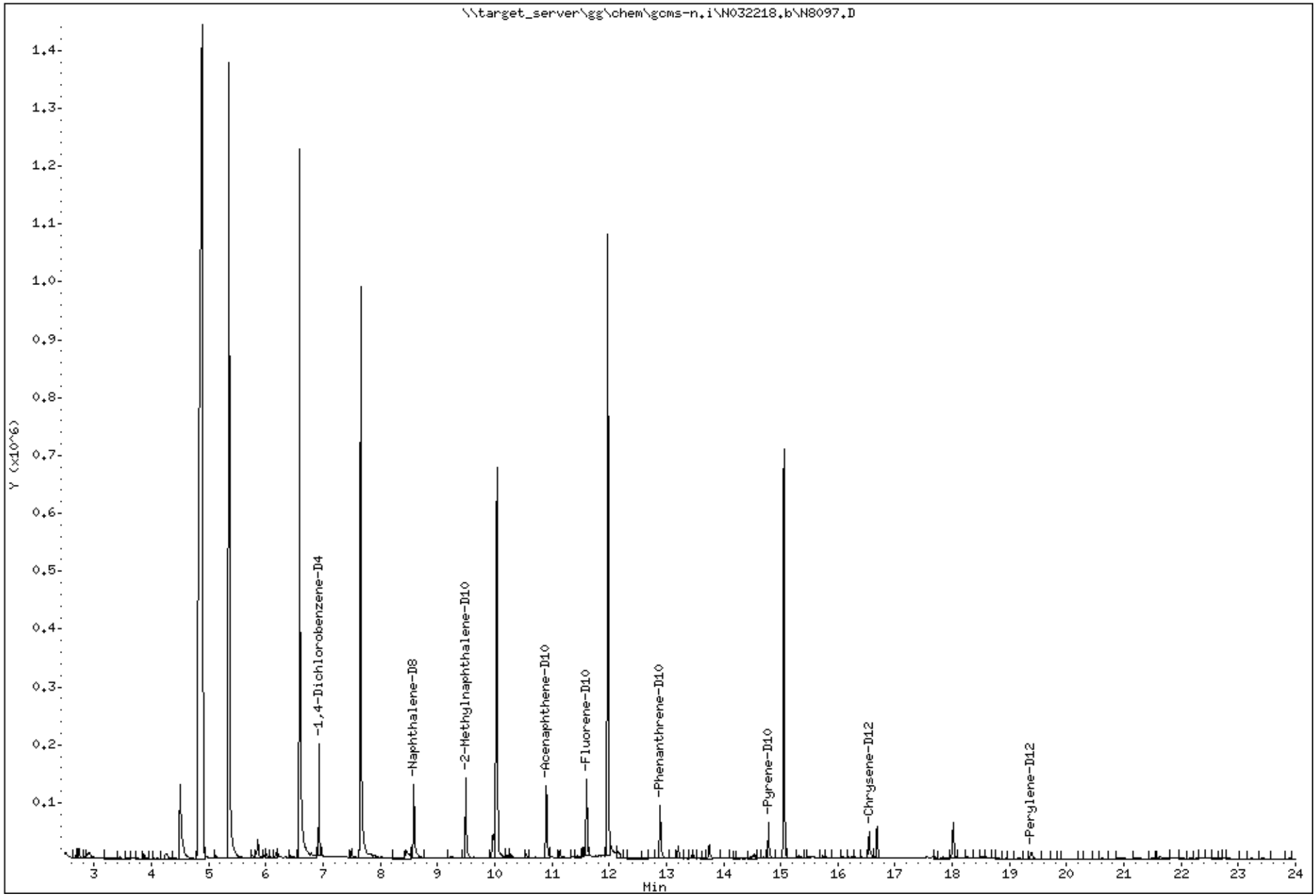
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03030	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	20.951	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	59799	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.561	(1.000)	191898	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.106)	104845	0.91344	38.1	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	83201	0.80000		
$	55 Fluorene-D10	174	11.612	11.591	(1.065)	91477	0.89915	37.5	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	120030	0.80000		
$	71 Pyrene-D10	212	14.790	14.762	(0.894)	58511	0.66561	27.8	
*	76 Chrysene-D12	240	16.544	16.516	(1.000)	43844	0.80000		
*	83 Perylene-D12	264	19.377	19.343	(1.000)	27587	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8097.D
Date : 22-MAR-2018 17:20
Client ID: CHAAP-20B-SS104 Instrument: gcms-n.i
Sample Info: SL2133-22



Katahdin Analytical Services 1000103

Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N7969.D N7970.D N7968.D N7971.D N7972.D N7973.D
Column ID:
Calibration Date(s): 16-MAR-18 11:59, 16-MAR-18 14:38

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	2.0000	7.0000	10.0000	15.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.97504	1.03233	1.03846	1.03803	1.02911	0.95367	AVG		1.01111		3.66004	15.00000	O
2-Methylnaphthalene	31023	95581	279076	1007066	1329374	1921570	QUA	0.02192	1.17017	0.04682	0.99957	0.99000	O
Acenaphthylene	2.14477	2.14249	2.17292	2.13421	2.10974	2.02953	AVG		2.12228		2.34472	15.00000	O
Acenaphthene	1.44416	1.39166	1.38360	1.41070	1.36407	1.32137	AVG		1.38593		3.00786	15.00000	O
Fluorene	1.39196	1.44565	1.45553	1.46294	1.41754	1.36236	AVG		1.42266		2.78271	15.00000	O
Phenanthrene	1.29271	1.18070	1.22471	1.30558	1.25036	1.16203	AVG		1.23601		4.70658	15.00000	O
Anthracene	1.52132	1.46329	1.35473	1.37719	1.33296	1.23689	AVG		1.38106		7.25837	15.00000	O
Fluoranthene	1.32716	1.14753	1.11558	1.18790	1.12285	1.07080	AVG		1.16197		7.71301	15.00000	O
Pyrene	2.87524	2.60439	2.42221	2.46431	2.29623	2.10394	AVG		2.46105		10.7245(	15.00000	O
Benzo(a)anthracene	1.48692	1.33504	1.40172	1.43012	1.39107	1.35693	AVG		1.40030		3.86131	15.00000	O
Chrysene	19557	48948	172156	663405	905814	1488528	LNR	-0.29232	1.38021		0.99705	0.99000	O
Benzo(b)fluoranthene	1.25563	1.28568	1.24854	1.47525	1.35003	1.35597	AVG		1.32852		6.41284	15.00000	O
Benzo(k)fluoranthene	2.25189	2.02422	1.74268	1.65893	1.71797	1.62031	AVG		1.83600		13.53811	15.00000	O
Benzo(a)pyrene	1.42534	1.36882	1.27714	1.31388	1.30682	1.27236	AVG		1.32739		4.45304	15.00000	O
Indeno(1,2,3-cd)pyrene	1.04771	0.90444	1.02917	0.91849	0.94731	0.89685	AVG		0.95733		6.83281	15.00000	O
Dibenzo(a,h)anthracene	0.94345	0.86161	0.91134	0.93202	0.93797	0.92158	AVG		0.91800		3.26094	15.00000	O
Benzo(g,h,i)perylene	1.29008	1.16887	1.13206	1.13789	1.12038	1.07323	AVG		1.15375		6.38506	15.00000	O
2-Methylnaphthalene-D10	0.44559	0.48637	0.47880	0.48817	0.47912	0.44588	AVG		0.47066		4.17816	15.00000	
Fluorene-D10	0.97164	0.99020	1.00380	1.01015	0.97546	0.96127	AVG		0.98542		1.94911	15.00000	
Pyrene-D10	1.55752	1.50378	1.40995	1.45771	1.33847	1.20984	AVG		1.41288		8.83799	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7974.D
Report Date: 19-Mar-2018 08:08

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: WG224895
Sample Matrix: SOLID Fraction: SV
Lab Smp Id: WG224895-8 Client Smp ID: Independent Source
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: SIM_IND_CHK5.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Misc Info: WG224895,WG224895,WG224895-4

SPIKE	COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
2	1,4-Dioxane	167	167	100.07	80-120
3	N-Nitrosodimethyla	167	185	111.18	80-120
4	Pyridine	167	197	118.09	80-120
5	Benzaldehyde	167	196	117.46	80-120
7	Bis(2-Chloroethyl)	167	183	110.01	80-120
6	Phenol	167	170	101.80	80-120
8	2-Chlorophenol	167	164	98.65	80-120
9	1,3-Dichlorobenzen	167	171	102.49	80-120
11	1,4-Dichlorobenzen	167	170	102.13	80-120
12	1,2-Dichlorobenzen	167	167	99.97	80-120
13	2,2'-Oxybis(1-chlo	167	141	84.72	80-120
14	2-Methylphenol	167	180	108.13	80-120
15	Acetophenone	167	172	103.41	80-120
16	N-Nitroso-di-n-pro	167	156	93.46	80-120
18	Hexachloroethane	167	165	99.19	80-120
17	3&4-Methylphenol	167	172	103.03	80-120
19	Nitrobenzene	167	164	98.54	80-120
20	Isophorone	167	166	99.95	80-120
21	2-Nitrophenol	167	168	100.80	80-120
22	2,4-Dimethylphenol	167	165	98.80	80-120
23	bis(2-Chloroethoxy	167	170	102.26	80-120
24	2,4-Dichlorophenol	167	170	101.73	80-120
25	1,2,4-Trichloroben	167	171	102.47	80-120
27	Naphthalene	167	169	101.45	80-120
28	4-Chloroaniline	167	160	96.03	80-120
29	Hexachlorobutadien	167	170	102.15	80-120
30	Caprolactam	167	164	98.47	80-120
33	2-Methylnaphthalen	167	163	97.57	80-120
31	4-Chloro-3-Methylp	167	162	97.24	80-120
34	1-Methylnaphthalen	167	148	89.09	80-120
36	1,2,4,5-Tetrachlor	167	170	101.83	80-120
35	Hexachlorocyclopen	167	107	64.07*	80-120
38	2,4,6-Trichlorophe	167	162	97.02	80-120
39	2,4,5-Trichlorophe	167	163	97.62	80-120
41	2-Chloronaphthalen	167	165	99.23	80-120
40	1,1'-Biphenyl	167	169	101.35	80-120
42	2-Nitroaniline	167	176	105.60	80-120
43	Dimethyl Phthalate	167	164	98.45	80-120
45	Acenaphthylene	167	156	93.50	80-120
44	2,6-Dinitrotoluene	167	162	97.55	80-120

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7974.D
Report Date: 19-Mar-2018 08:08

	SPIKE COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
48	Acenaphthene	167	165	99.10	80-120
46	3-Nitroaniline	167	176	105.65	80-120
49	2,4-Dinitrophenol	167	136	81.63	80-120
50	Dibenzofuran	167	165	99.07	80-120
51	2,4-Dinitrotoluene	167	163	98.10	80-120
53	2,3,4,6-Tetrachlor	167	131	78.55*	80-120
52	4-Nitrophenol	167	141	84.51	80-120
54	Diethylphthalate	167	164	98.23	80-120
56	Fluorene	167	164	98.26	80-120
57	4-Chlorophenyl-phe	167	161	96.90	80-120
59	4,6-Dinitro-2-Meth	167	142	85.43	80-120
58	4-Nitroaniline	167	174	104.45	80-120
60	N-Nitrosodiphenyla	167	135	81.06	80-120
61	4-Bromophenyl-phen	167	160	96.14	80-120
62	Hexachlorobenzene	167	156	93.93	80-120
63	Atrazine	167	78.9	47.36*	80-120
64	Pentachlorophenol	167	146	87.53	80-120
66	Phenanthrene	167	158	94.92	80-120
67	Anthracene	167	149	89.48	80-120
68	Carbazole	167	163	97.85	80-120
69	Di-n-butylphthalat	167	170	101.94	80-120
70	Fluoranthene	167	157	94.39	80-120
72	Pyrene	167	151	90.65	80-120
73	Butylbenzylphthala	167	165	99.24	80-120
74	Benzo(a)anthracene	167	156	93.38	80-120
77	Chrysene	167	175	104.84	80-120
75	3,3'-Dichlorobenzi	167	169	101.43	80-120
78	bis(2-Ethylhexyl)p	167	169	101.63	80-120
79	Di-n-octylphthalat	167	170	101.74	80-120
80	Benzo(b)fluoranthe	167	166	99.79	80-120
81	Benzo(k)fluoranthe	167	152	91.13	80-120
82	Benzo(a)pyrene	167	147	88.18	80-120
85	Indeno(1,2,3-cd)py	167	163	97.77	80-120
86	Dibenzo(a,h)anthra	167	162	97.17	80-120
87	Benzo(g,h,i)peryle	167	149	89.68	80-120

	SURROGATE COMPOUND	CONC ADDED ug/Kgdrywt	CONC RECOVERED ug/Kgdrywt	% RECOVERED	LIMITS
$ 1	1,4-Dioxane-d8	66.7	0.000	*	30-150
$ 32	2-Methylnaphthale	66.7	0.000	*	19-94
$ 37	2,4-Dibromophenol	133	0.000	*	20-116
$ 55	Fluorene-D10	66.7	0.000	*	20-96
$ 71	Pyrene-D10	66.7	0.000	*	31-128

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7968.D
Report Date: 19-Mar-2018 09:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N031618.b\N7968.D
Lab Smp Id: WG224895-4
Inj Date : 16-MAR-2018 11:59 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG224895-4
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Meth Date : 19-Mar-2018 08:27 cgomez Quant Type: ISTD
Cal Date : 13-MAR-2018 11:43 Cal File: N7889.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.628	2.639	(0.377)	65699	2.00000	2.08	
	2 1,4-Dioxane	88	2.670	2.660	(0.383)	69534	2.00000	1.94	
	3 N-Nitrosodimethylamine	74	3.247	3.216	(0.466)	83794	2.00000	2.08	
	4 Pyridine	79	3.289	3.247	(0.472)	137622	2.00000	2.04	
	5 Benzaldehyde	77	6.432	6.402	(0.922)	38696	2.00000	1.92	
	6 Phenol	94	6.684	6.663	(0.958)	429599	4.50000	4.42	
	7 Bis(2-Chloroethyl)ether	93	6.674	6.643	(0.957)	138975	2.00000	1.74	
	8 2-Chlorophenol	128	6.754	6.724	(0.968)	385886	4.50000	4.48	
	9 1,3-Dichlorobenzene	146	6.895	6.875	(0.988)	175213	2.00000	2.01	
*	10 1,4-Dichlorobenzene-D4	152	6.976	6.955	(1.000)	49167	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.996	6.975	(1.003)	182776	2.00000	2.02	
	12 1,2-Dichlorobenzene	146	7.187	7.167	(1.030)	172965	2.00000	2.00	
	13 2,2'-Oxybis(1-chloropropane)	45	7.358	7.338	(1.055)	222465	2.00000	2.00	
	14 2-Methylphenol	108	7.418	7.398	(1.063)	323733	4.50000	4.47	
	15 Acetophenone	105	7.529	7.499	(0.873)	191757	2.00000	2.03	
	16 N-Nitroso-di-n-propylamine	70	7.539	7.519	(1.081)	105808	2.00000	1.99	
	17 3&4-Methylphenol	108	7.640	7.620	(1.095)	320072	4.50000	4.52	
	18 Hexachloroethane	117	7.610	7.589	(1.091)	62162	2.00000	1.95	
	19 Nitrobenzene	77	7.730	7.710	(0.896)	161279	2.00000	2.07	
	20 Isophorone	82	8.053	8.032	(0.933)	250356	2.00000	2.10	
	21 2-Nitrophenol	139	8.153	8.133	(0.945)	191076	4.50000	4.64	

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7968.D
Report Date: 19-Mar-2018 09:22

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.294	8.274	(0.961)	310025	4.50000	4.61	
	23 bis(2-Chloroethoxy)methane	93	8.365	8.344	(0.970)	172623	2.00000	2.07	
	24 2,4-Dichlorophenol	162	8.546	8.515	(0.991)	267105	4.50000	4.70	
	25 1,2,4-Trichlorobenzene	180	8.576	8.556	(0.994)	121764	2.00000	2.06	
*	26 Naphthalene-D8	136	8.626	8.606	(1.000)	153512	0.80000	(a)	
	27 Naphthalene	128	8.657	8.636	(1.004)	398542	2.00000	2.05	
	28 4-Chloroaniline	127	8.787	8.767	(1.019)	161512	2.00000	2.09	
	29 Hexachlorobutadiene	225	8.848	8.828	(1.026)	63608	2.00000	2.01	
	30 Caprolactam	113	9.247	9.228	(1.072)	39343	2.00000	1.92	
	31 4-Chloro-3-Methylphenol	107	9.513	9.493	(1.103)	245444	4.50000	4.53	
$	32 2-Methylnaphthalene-D10	152	9.543	9.523	(1.106)	183753	2.00000	2.03	
	33 2-Methylnaphthalene	142	9.582	9.562	(1.111)	279076	2.00000	1.84	
	34 1-Methylnaphthalene	142	9.710	9.690	(1.126)	234553	2.00000	1.89	
	35 Hexachlorocyclopentadiene	237	9.808	9.789	(0.895)	20593	2.00000	1.53	
	36 1,2,4,5-Tetrachlorobenzene	216	9.828	9.798	(0.897)	105079	2.00000	2.03	
$	37 2,4-Dibromophenol	252	10.005	9.985	(0.913)	57773	2.00000	2.02	
	38 2,4,6-Trichlorophenol	196	10.015	9.995	(0.914)	151629	4.50000	4.67	
	39 2,4,5-Trichlorophenol	196	10.104	10.084	(0.922)	164776	4.50000	4.52	
	40 1,1'-Biphenyl	154	10.212	10.192	(0.932)	293837	2.00000	2.06	
	41 2-Chloronaphthalene	164	10.232	10.202	(0.934)	75397	2.00000	2.06	
	42 2-Nitroaniline	65	10.409	10.389	(0.950)	64640	2.00000	2.08	
	43 Dimethyl Phthalate	163	10.660	10.638	(0.973)	566126	4.50000	4.57	
	44 2,6-Dinitrotoluene	165	10.736	10.714	(0.980)	61333	2.00000	2.06	
	45 Acenaphthylene	152	10.769	10.747	(0.983)	329246	2.00000	2.05	
	46 3-Nitroaniline	138	10.987	10.954	(1.003)	50077	2.00000	2.00	
*	47 Acenaphthene-D10	164	10.954	10.943	(1.000)	60609	0.80000	(a)	
	48 Acenaphthene	153	10.998	10.976	(1.004)	209646	2.00000	2.00	
	49 2,4-Dinitrophenol	184	11.172	11.117	(1.020)	44361	4.50000	4.26	
	50 Dibenzofuran	168	11.248	11.226	(1.027)	285465	2.00000	2.04	
	51 2,4-Dinitrotoluene	165	11.292	11.270	(1.031)	70219	2.00000	2.08	
	52 4-Nitrophenol	139	11.401	11.357	(1.041)	69625	4.50000	4.40	
	53 2,3,4,6-Tetrachlorophenol	232	11.466	11.444	(1.047)	121023	4.50000	4.53	
	54 Diethylphthalate	149	11.597	11.586	(1.059)	553667	4.50000	4.55	
$	55 Fluorene-D10	174	11.662	11.640	(1.065)	152098	2.00000	2.04	
	56 Fluorene	166	11.695	11.673	(1.068)	220546	2.00000	2.05	
	57 4-Chlorophenyl-phenylether	204	11.717	11.695	(1.070)	115979	2.00000	2.05	
	58 4-Nitroaniline	138	11.815	11.782	(1.079)	44012	2.00000	1.96	
	59 4,6-Dinitro-2-Methylphenol	198	11.858	11.826	(0.916)	69520	4.50000	4.10	
	60 N-Nitrosodiphenylamine	169	11.891	11.869	(0.919)	182278	2.00000	2.00	
	61 4-Bromophenyl-phenylether	248	12.367	12.346	(0.955)	59375	2.00000	1.96	
	62 Hexachlorobenzene	284	12.453	12.431	(0.962)	50721	2.00000	1.98	
	63 Atrazine	200	12.645	12.623	(0.977)	38603	2.00000	1.99	
	64 Pentachlorophenol	266	12.773	12.741	(0.987)	45329	4.50000	4.17	
*	65 Phenanthrene-D10	188	12.944	12.922	(1.000)	88968	0.80000	(a)	
	66 Phenanthrene	178	12.976	12.954	(1.002)	272399	2.00000	1.98	
	67 Anthracene	178	13.050	13.018	(1.008)	301320	2.00000	1.96	
	68 Carbazole	167	13.307	13.275	(1.028)	223834	2.00000	1.93	
	69 Di-n-butylphthalate	149	13.798	13.776	(1.066)	848806	4.50000	4.39	
	70 Fluoranthene	202	14.579	14.551	(1.126)	248128	2.00000	1.92	
$	71 Pyrene-D10	212	14.851	14.813	(0.894)	150657	2.00000	2.00	
	72 Pyrene	202	14.870	14.841	(0.895)	258819	2.00000	1.97	
	73 Butylbenzylphthalate	149	15.808	15.780	(0.951)	322015	4.50000	4.50	
	74 Benzo(a)anthracene	228	16.605	16.624	(0.999)	149777	2.00000	2.00(H)	
	75 3,3'-Dichlorobenzidine	252	16.615	16.577	(1.000)	50529	2.00000	2.26	

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7968.D
Report Date: 19-Mar-2018 09:22

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.615	16.577	(1.000)	42741	0.80000	(a)	
	77 Chrysene	228	16.662	16.624	(1.003)	172156	2.00000	2.10	
	78 bis(2-Ethylhexyl)phthalate	149	16.755	16.727	(1.008)	473973	4.50000	4.55	
	79 Di-n-octylphthalate	149	18.008	17.964	(1.084)	702244	4.50000	4.57	
	80 Benzo(b)fluoranthene	252	18.666	18.611	(0.957)	114472	2.00000	1.88	
	81 Benzo(k)fluoranthene	252	18.712	19.316	(0.959)	159778	2.00000	1.90(H)	
	82 Benzo(a)pyrene	252	19.370	19.316	(0.993)	117095	2.00000	1.92	
*	83 Perylene-D12	264	19.507	19.440	(1.000)	36674	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.574	21.507	(1.298)	109969	2.00000	2.15	
	86 Dibenzo(a,h)anthracene	278	21.619	21.541	(1.108)	83556	2.00000	1.98	
	87 Benzo(g,h,i)perylene	276	22.096	22.018	(1.133)	103793	2.00000	1.96	
M	88 Total PAHs	100				722565	36.0000	(a)	
M	324 Total Low PAHs	100				2010775	14.0000	(a)	
M	325 Total High PAHs	100				1029531	12.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7968.D
Date : 16-MAR-2018 11:59
Client ID:
Sample Info: WG224895-4
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n.i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n.i\N031618.b\N7968.D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-Benzaldehyde
-Phenol
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-2-Methylphenol
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-Naphthalene D8+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-2-Methylnaphthalene
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,6-Tribromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-4-Nitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7969.D
Report Date: 19-Mar-2018 09:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N031618.b\N7969.D
Lab Smp Id: WG224895-2
Inj Date : 16-MAR-2018 12:30 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG224895-2
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Meth Date : 19-Mar-2018 08:27 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 12:30 Cal File: N7969.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.660	2.639	(0.381)	5086	0.20000	0.183(a)	
	2 1,4-Dioxane	88	2.702	2.660	(0.387)	7578	0.20000	0.239(a)	
	3 N-Nitrosodimethylamine	74	3.447	3.216	(0.493)	6679	0.20000	0.188(aM)	M9
	4 Pyridine	79	3.604	3.247	(0.516)	11068	0.20000	0.186(aM)	M9
	5 Benzaldehyde	77	6.513	6.402	(0.932)	3523	0.20000	0.198(aQM)	M9
	6 Phenol	94	6.754	6.663	(0.967)	83784	1.00000	0.976(a)	
	7 Bis(2-Chloroethyl)ether	93	6.714	6.643	(0.961)	22303	0.20000	0.290(Q)	
	8 2-Chlorophenol	128	6.794	6.724	(0.973)	70753	1.00000	0.930(a)	
	9 1,3-Dichlorobenzene	146	6.915	6.875	(0.990)	13819	0.20000	0.179(a)	
*	10 1,4-Dichlorobenzene-D4	152	6.986	6.955	(1.000)	43434	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	7.006	6.975	(1.003)	15211	0.20000	0.190(a)	
	12 1,2-Dichlorobenzene	146	7.207	7.167	(1.032)	14522	0.20000	0.190(a)	
	13 2,2'-Oxybis(1-chloropropane)	45	7.378	7.338	(1.056)	18642	0.20000	0.190(a)	
	14 2-Methylphenol	108	7.459	7.398	(1.068)	62575	1.00000	0.978(a)	
	15 Acetophenone	105	7.579	7.499	(0.878)	15936	0.20000	0.179(a)	
	16 N-Nitroso-di-n-propylamine	70	7.579	7.519	(1.085)	5571	0.20000	0.0640(aQ)	
	17 3&4-Methylphenol	108	7.700	7.620	(1.102)	52708	1.00000	0.843(a)	
	18 Hexachloroethane	117	7.610	7.589	(1.089)	5724	0.20000	0.203	
	19 Nitrobenzene	77	7.781	7.710	(0.901)	13503	0.20000	0.184(aM)	M6
	20 Isophorone	82	8.073	8.032	(0.935)	18322	0.20000	0.163(a)	
	21 2-Nitrophenol	139	8.193	8.133	(0.949)	34690	1.00000	0.898(a)	

JCG

2:47 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7969.D
Report Date: 19-Mar-2018 09:22

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.344	8.274	(0.966)	59008	1.00000	0.935(M)	M9
	23 bis(2-Chloroethoxy)methane	93	8.445	8.344	(0.978)	15234	0.20000	0.194(aQM)	M9
	24 2,4-Dichlorophenol	162	8.626	8.515	(0.999)	45920	1.00000	0.860	
	25 1,2,4-Trichlorobenzene	180	8.586	8.556	(0.994)	11025	0.20000	0.199(a)	
*	26 Naphthalene-D8	136	8.636	8.606	(1.000)	144158	0.80000	(a)	
	27 Naphthalene	128	8.667	8.636	(1.003)	35140	0.20000	0.193(a)	
	28 4-Chloroaniline	127	8.878	8.767	(1.028)	10822	0.20000	0.149(a)	
	29 Hexachlorobutadiene	225	8.848	8.828	(1.024)	5999	0.20000	0.202	
	30 Caprolactam	113	9.336	9.228	(1.081)	2554	0.20000	0.209(QM)	M9
	31 4-Chloro-3-Methylphenol	107	9.562	9.493	(1.107)	48890	1.00000	0.960(aQ)	
$	32 2-Methylnaphthalene-D10	152	9.572	9.523	(1.108)	16059	0.20000	0.189(a)	
	33 2-Methylnaphthalene	142	9.611	9.562	(1.113)	31023	0.20000	0.221(M)	M3
	34 1-Methylnaphthalene	142	9.730	9.690	(1.127)	28333	0.20000	0.243	
	35 Hexachlorocyclopentadiene	237	9.808	9.789	(0.895)	248	0.20000	0.344	
	36 1,2,4,5-Tetrachlorobenzene	216	9.848	9.798	(0.898)	9426	0.20000	0.209	
$	37 2,4-Dibromophenol	252	10.084	9.985	(0.920)	4926	0.20000	0.198(aM)	M6
	38 2,4,6-Trichlorophenol	196	10.054	9.995	(0.917)	24917	1.00000	0.881(a)	
	39 2,4,5-Trichlorophenol	196	10.172	10.084	(0.928)	34693	1.00000	1.09(H)	
	40 1,1'-Biphenyl	154	10.241	10.192	(0.934)	25454	0.20000	0.205	
	41 2-Chloronaphthalene	164	10.251	10.202	(0.935)	6240	0.20000	0.196(a)	
	42 2-Nitroaniline	65	10.497	10.389	(0.957)	4542	0.20000	0.168(a)	
	43 Dimethyl Phthalate	163	10.671	10.638	(0.973)	105994	1.00000	0.982(a)	
	44 2,6-Dinitrotoluene	165	10.769	10.714	(0.982)	4977	0.20000	0.192(a)	
	45 Acenaphthylene	152	10.780	10.747	(0.983)	28305	0.20000	0.202	
	46 3-Nitroaniline	138	11.085	10.954	(1.011)	3489	0.20000	0.160(a)	
*	47 Acenaphthene-D10	164	10.965	10.943	(1.000)	52789	0.80000	(a)	
	48 Acenaphthene	153	11.008	10.976	(1.004)	19059	0.20000	0.208	
	49 2,4-Dinitrophenol	184	11.313	11.117	(1.032)	2232	1.00000	0.772(a)	
	50 Dibenzofuran	168	11.270	11.226	(1.028)	23935	0.20000	0.197(a)	
	51 2,4-Dinitrotoluene	165	11.368	11.270	(1.037)	4531	0.20000	0.154(a)	
	52 4-Nitrophenol	139	11.542	11.357	(1.053)	7116	1.00000	0.821(aQ)	
	53 2,3,4,6-Tetrachlorophenol	232	11.510	11.444	(1.050)	19942	1.00000	0.857(a)	
	54 Diethylphthalate	149	11.619	11.586	(1.060)	104263	1.00000	0.984(a)	
$	55 Fluorene-D10	174	11.684	11.640	(1.066)	12823	0.20000	0.197(a)	
	56 Fluorene	166	11.717	11.673	(1.069)	18370	0.20000	0.196(a)	
	57 4-Chlorophenyl-phenylether	204	11.738	11.695	(1.071)	9581	0.20000	0.194(a)	
	58 4-Nitroaniline	138	11.913	11.782	(1.086)	5106	0.20000	0.262(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	11.935	11.826	(0.921)	8347	1.00000	1.02	
	60 N-Nitrosodiphenylamine	169	11.924	11.869	(0.920)	15077	0.20000	0.208	
	61 4-Bromophenyl-phenylether	248	12.388	12.346	(0.956)	5225	0.20000	0.217	
	62 Hexachlorobenzene	284	12.463	12.431	(0.961)	4697	0.20000	0.231	
	63 Atrazine	200	12.677	12.623	(0.978)	3077	0.20000	0.199(a)	
	64 Pentachlorophenol	266	12.816	12.741	(0.988)	5134	1.00000	0.918(a)	
*	65 Phenanthrene-D10	188	12.965	12.922	(1.000)	70828	0.80000	(a)	
	66 Phenanthrene	178	12.997	12.954	(1.002)	22890	0.20000	0.209	
	67 Anthracene	178	13.072	13.018	(1.008)	26938	0.20000	0.220	
	68 Carbazole	167	13.349	13.275	(1.030)	19167	0.20000	0.207	
	69 Di-n-butylphthalate	149	13.808	13.776	(1.065)	160029	1.00000	1.04	
	70 Fluoranthene	202	14.597	14.551	(1.126)	23500	0.20000	0.228	
$	71 Pyrene-D10	212	14.860	14.813	(0.893)	13302	0.20000	0.220(a)	
	72 Pyrene	202	14.888	14.841	(0.895)	24556	0.20000	0.234	
	73 Butylbenzylphthalate	149	15.808	15.780	(0.950)	57318	1.00000	1.00	
	74 Benzo(a)anthracene	228	16.624	16.624	(0.999)	12699	0.20000	0.212(H)	
	75 3,3'-Dichlorobenzidine	252	16.652	16.577	(1.001)	3877	0.20000	0.217	



2:47 pm, Mar 26, 2018

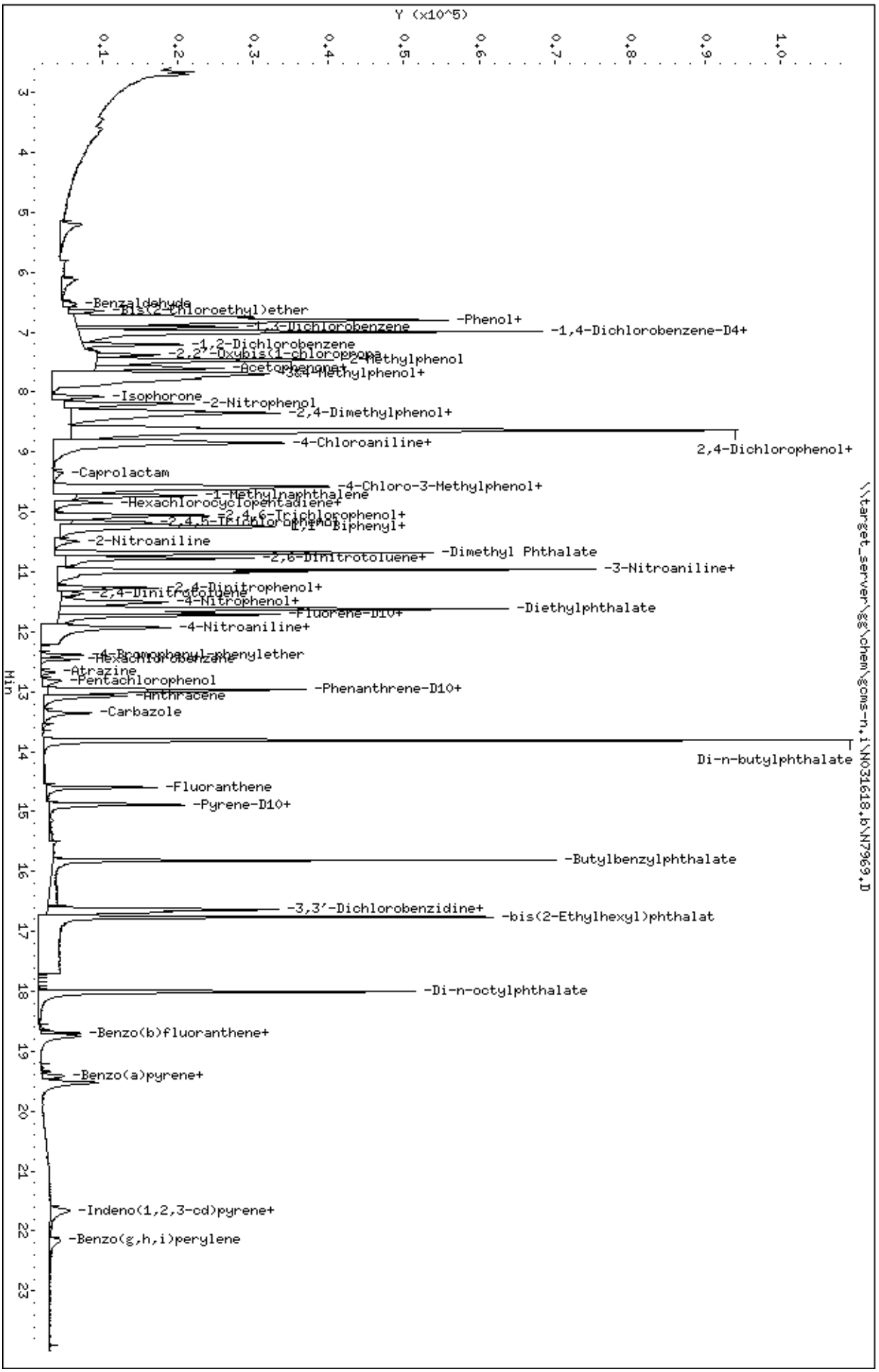
Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7969.D
Report Date: 19-Mar-2018 09:22

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.633	16.577	(1.000)	34162	0.80000	(a)	
	77 Chrysene	228	16.680	16.624	(1.003)	19557	0.20000	0.0980(a)	
	78 bis(2-Ethylhexyl)phthalate	149	16.765	16.727	(1.008)	83937	1.00000	1.01	
	79 Di-n-octylphthalate	149	18.010	17.964	(1.083)	118258	1.00000	0.963(a)	
	80 Benzo(b)fluoranthene	252	18.702	18.611	(0.958)	8893	0.20000	0.189(a)	
	81 Benzo(k)fluoranthene	252	18.748	19.316	(0.960)	15949	0.20000	0.245(M)	M6
	82 Benzo(a)pyrene	252	19.406	19.316	(0.994)	10095	0.20000	0.215	
*	83 Perylene-D12	264	19.520	19.440	(1.000)	28330	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.644	21.507	(1.301)	8948	0.20000	0.219	
	86 Dibenzo(a,h)anthracene	278	21.678	21.541	(1.111)	6682	0.20000	0.206	
	87 Benzo(g,h,i)perylene	276	22.155	22.018	(1.135)	9137	0.20000	0.224	
M	88 Total PAHs	100				71260	3.60000	(a)	
M	324 Total Low PAHs	100				181725	1.40000	(a)	
M	325 Total High PAHs	100				97089	1.20000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

2:47 pm, Mar 26, 2018


Data File: \\target_server\gg\chem\gcms-n,i\N031618,b\N7969,D
Date : 16-MAR-2018 12:30
Client ID:
Sample Info: WG224895-2
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N031618,b\N7969,D
Y (x10^5)
Min
-Benzaldehyde
-bis(2-Chloroethyl)ether
-Phenol+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-2-Methylphenol
-Acetophenone+
-3&4-Methylphenol+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol+
-4-Chloroaniline+
2,4-Dichlorophenol+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,6-Trichlorophenol+
-2,4,5-Trichlorophenol
D,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol+
-2,4-Dinitrotoluene
-4-Nitrophenol+
-Fluorene-D10+
-Diethylphthalate
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene+
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7970.D
Report Date: 19-Mar-2018 09:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N031618.b\N7970.D
Lab Smp Id: WG224895-3
Inj Date : 16-MAR-2018 13:03 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG224895-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Meth Date : 19-Mar-2018 08:27 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 13:03 Cal File: N7970.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.649	2.639	(0.380)	14074	0.50000	0.446(a)	
	2 1,4-Dioxane	88	2.691	2.660	(0.386)	20052	0.50000	0.559(a)	
	3 N-Nitrosodimethylamine	74	3.342	3.216	(0.479)	15242	0.50000	0.378	
	4 Pyridine	79	3.436	3.247	(0.493)	26754	0.50000	0.396	
	5 Benzaldehyde	77	6.472	6.402	(0.928)	8802	0.50000	0.437(Q)	
	6 Phenol	94	6.704	6.663	(0.961)	196482	2.00000	2.02	
	7 Bis(2-Chloroethyl)ether	93	6.694	6.643	(0.960)	54038	0.50000	0.655	
	8 2-Chlorophenol	128	6.764	6.724	(0.970)	177505	2.00000	2.06	
	9 1,3-Dichlorobenzene	146	6.905	6.875	(0.990)	43262	0.50000	0.496	
*	10 1,4-Dichlorobenzene-D4	152	6.976	6.955	(1.000)	49220	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	6.996	6.975	(1.003)	45020	0.50000	0.498	
	12 1,2-Dichlorobenzene	146	7.197	7.167	(1.032)	43055	0.50000	0.498	
	13 2,2'-Oxybis(1-chloropropane)	45	7.368	7.338	(1.056)	54878	0.50000	0.493	
	14 2-Methylphenol	108	7.429	7.398	(1.065)	145468	2.00000	2.01	
	15 Acetophenone	105	7.549	7.499	(0.875)	50491	0.50000	0.509	
	16 N-Nitroso-di-n-propylamine	70	7.559	7.519	(1.084)	28516	0.50000	0.493	
	17 3&4-Methylphenol	108	7.660	7.620	(1.098)	137940	2.00000	1.95	
	18 Hexachloroethane	117	7.610	7.589	(1.091)	15739	0.50000	0.493	
	19 Nitrobenzene	77	7.751	7.710	(0.898)	51216	0.50000	0.626(Q)	
	20 Isophorone	82	8.063	8.032	(0.935)	57793	0.50000	0.461	
	21 2-Nitrophenol	139	8.163	8.133	(0.946)	85358	2.00000	1.98	

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7970.D
Report Date: 19-Mar-2018 09:22

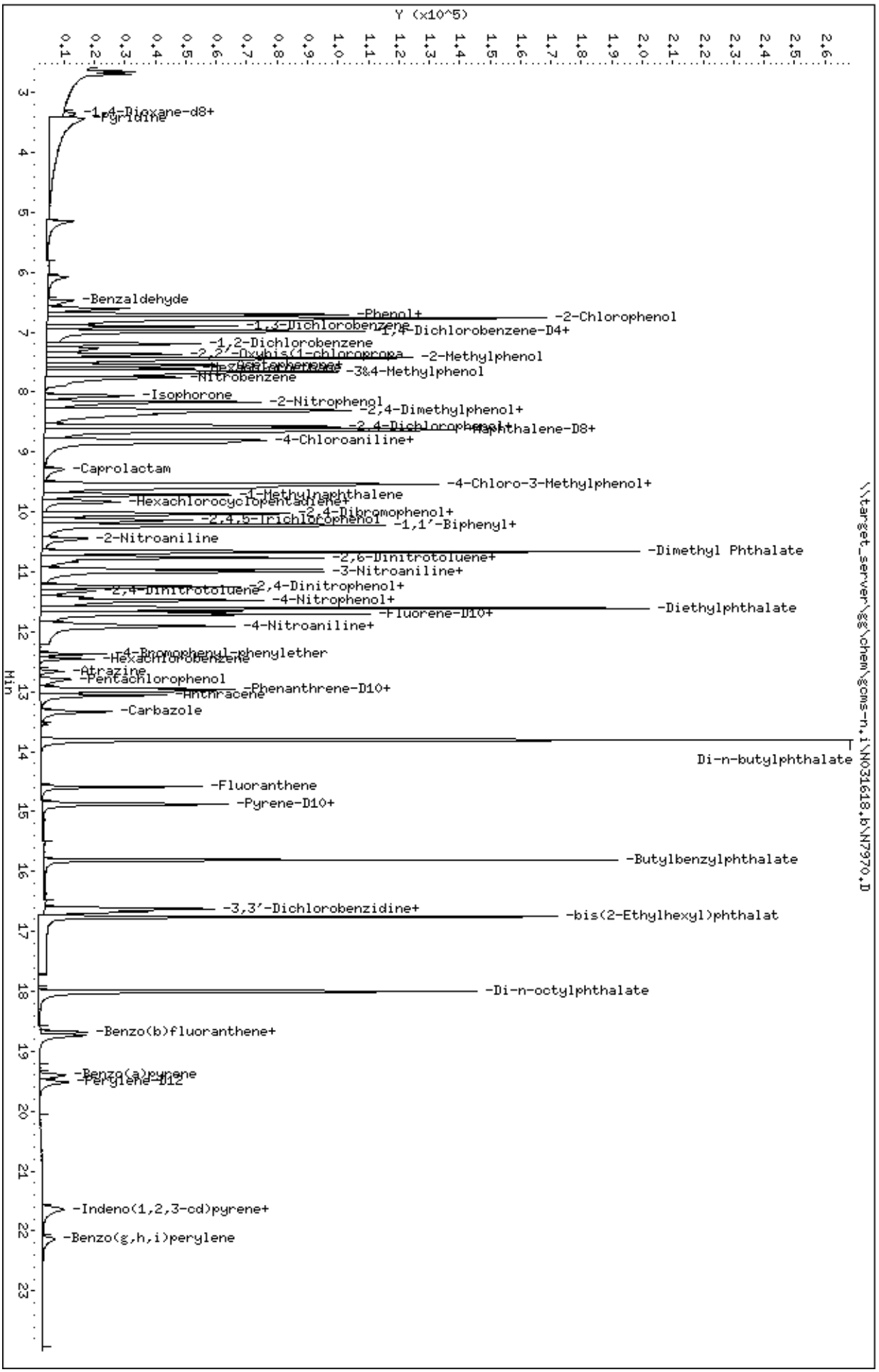
							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.304	8.274	(0.963)	140740	2.00000	2.00	
	23 bis(2-Chloroethoxy)methane	93	8.385	8.344	(0.972)	40490	0.50000	0.462(Q)	
	24 2,4-Dichlorophenol	162	8.576	8.515	(0.994)	117685	2.00000	1.97	
	25 1,2,4-Trichlorobenzene	180	8.576	8.556	(0.994)	30944	0.50000	0.500	
*	26 Naphthalene-D8	136	8.626	8.606	(1.000)	160989	0.80000	(a)	
	27 Naphthalene	128	8.657	8.636	(1.004)	103871	0.50000	0.510	
	28 4-Chloroaniline	127	8.828	8.767	(1.023)	37533	0.50000	0.463(a)	
	29 Hexachlorobutadiene	225	8.848	8.828	(1.026)	17004	0.50000	0.512	
	30 Caprolactam	113	9.297	9.228	(1.078)	7902	0.50000	0.433(Q)	
	31 4-Chloro-3-Methylphenol	107	9.533	9.493	(1.105)	113668	2.00000	2.00(Q)	
$	32 2-Methylnaphthalene-D10	152	9.553	9.523	(1.107)	48938	0.50000	0.517(a)	
	33 2-Methylnaphthalene	142	9.592	9.562	(1.112)	95581	0.50000	0.586	
	34 1-Methylnaphthalene	142	9.720	9.690	(1.127)	68576	0.50000	0.527	
	35 Hexachlorocyclopentadiene	237	9.808	9.789	(0.895)	2180	0.50000	0.448	
	36 1,2,4,5-Tetrachlorobenzene	216	9.838	9.798	(0.897)	27306	0.50000	0.497	
$	37 2,4-Dibromophenol	252	10.045	9.985	(0.916)	14493	0.50000	0.477(a)	
	38 2,4,6-Trichlorophenol	196	10.025	9.995	(0.914)	67435	2.00000	1.96	
	39 2,4,5-Trichlorophenol	196	10.133	10.084	(0.924)	78076	2.00000	2.02(H)	
	40 1,1'-Biphenyl	154	10.222	10.192	(0.932)	76424	0.50000	0.506	
	41 2-Chloronaphthalene	164	10.242	10.202	(0.934)	19396	0.50000	0.500(Q)	
	42 2-Nitroaniline	65	10.438	10.389	(0.952)	15684	0.50000	0.476	
	43 Dimethyl Phthalate	163	10.660	10.638	(0.972)	260335	2.00000	1.98	
	44 2,6-Dinitrotoluene	165	10.747	10.714	(0.980)	14524	0.50000	0.460	
	45 Acenaphthylene	152	10.769	10.747	(0.982)	86076	0.50000	0.505	
	46 3-Nitroaniline	138	11.030	10.954	(1.006)	12013	0.50000	0.453	
*	47 Acenaphthene-D10	164	10.965	10.943	(1.000)	64281	0.80000	(a)	
	48 Acenaphthene	153	10.998	10.976	(1.003)	55911	0.50000	0.502	
	49 2,4-Dinitrophenol	184	11.226	11.117	(1.024)	13810	2.00000	1.68	
	50 Dibenzofuran	168	11.248	11.226	(1.026)	74106	0.50000	0.501	
	51 2,4-Dinitrotoluene	165	11.324	11.270	(1.033)	16296	0.50000	0.454	
	52 4-Nitrophenol	139	11.466	11.357	(1.046)	25823	2.00000	1.79(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	11.477	11.444	(1.047)	50559	2.00000	1.78	
	54 Diethylphthalate	149	11.608	11.586	(1.059)	257852	2.00000	2.00	
$	55 Fluorene-D10	174	11.662	11.640	(1.064)	39782	0.50000	0.502(a)	
	56 Fluorene	166	11.706	11.673	(1.068)	58080	0.50000	0.508	
	57 4-Chlorophenyl-phenylether	204	11.728	11.695	(1.070)	29839	0.50000	0.498	
	58 4-Nitroaniline	138	11.858	11.782	(1.081)	11126	0.50000	0.468	
	59 4,6-Dinitro-2-Methylphenol	198	11.891	11.826	(0.918)	24702	2.00000	1.73	
	60 N-Nitrosodiphenylamine	169	11.902	11.869	(0.919)	47184	0.50000	0.507	
	61 4-Bromophenyl-phenylether	248	12.378	12.346	(0.955)	15782	0.50000	0.511	
	62 Hexachlorobenzene	284	12.453	12.431	(0.961)	13146	0.50000	0.503	
	63 Atrazine	200	12.656	12.623	(0.977)	9674	0.50000	0.488	
	64 Pentachlorophenol	266	12.794	12.741	(0.988)	18700	2.00000	1.91	
*	65 Phenanthrene-D10	188	12.954	12.922	(1.000)	90879	0.80000	(a)	
	66 Phenanthrene	178	12.986	12.954	(1.002)	67063	0.50000	0.478	
	67 Anthracene	178	13.061	13.018	(1.008)	83114	0.50000	0.530	
	68 Carbazole	167	13.328	13.275	(1.029)	57461	0.50000	0.484	
	69 Di-n-butylphthalate	149	13.798	13.776	(1.065)	413760	2.00000	2.10	
	70 Fluoranthene	202	14.588	14.551	(1.126)	65179	0.50000	0.494	
$	71 Pyrene-D10	212	14.851	14.813	(0.893)	39417	0.50000	0.532(a)	
	72 Pyrene	202	14.879	14.841	(0.895)	68266	0.50000	0.529	
	73 Butylbenzylphthalate	149	15.808	15.780	(0.951)	148160	2.00000	2.11	
	74 Benzo(a)anthracene	228	16.615	16.624	(0.999)	34994	0.50000	0.477(H)	
	75 3,3'-Dichlorobenzidine	252	16.634	16.577	(1.001)	11180	0.50000	0.510	

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7970.D
Report Date: 19-Mar-2018 09:22

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.624	16.577	(1.000)	41939	0.80000	(a)	
	77 Chrysene	228	16.671	16.624	(1.003)	48948	0.50000	0.443	
	78 bis(2-Ethylhexyl)phthalate	149	16.756	16.727	(1.008)	223207	2.00000	2.18	
	79 Di-n-octylphthalate	149	18.010	17.964	(1.083)	321327	2.00000	2.13	
	80 Benzo(b)fluoranthene	252	18.680	18.611	(0.957)	25888	0.50000	0.484	
	81 Benzo(k)fluoranthene	252	18.737	19.316	(0.960)	40759	0.50000	0.551(H)	
	82 Benzo(a)pyrene	252	19.395	19.316	(0.994)	27562	0.50000	0.516	
*	83 Perylene-D12	264	19.520	19.440	(1.000)	32217	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.610	21.507	(1.300)	23707	0.50000	0.472	
	86 Dibenzo(a,h)anthracene	278	21.655	21.541	(1.109)	17349	0.50000	0.469	
	87 Benzo(g,h,i)perylene	276	22.132	22.018	(1.134)	23536	0.50000	0.506	
M	88 Total PAHs	100				182466	9.00000	(a)	
M	324 Total Low PAHs	100				549696	3.50000	(a)	
M	325 Total High PAHs	100				262298	3.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N031618.b\N7970.D
Date : 16-MAR-2018 13:03
Client ID:
Sample Info: WG224895-3
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N031618.b\N7970.D
Y (x10^5)
Min
-1,4-Dioxane-d8+
-Pyridine
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-2-Methylphenol
-Nitrobenzene
-3&4-Methylphenol
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol+
-Naphthalene-D8+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol+
-2,4-Dinitrotoluene
-4-Nitrophenol+
-Fluorene-D10+
-Diethylphthalate
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7971.D
Report Date: 19-Mar-2018 09:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N031618.b\N7971.D
Lab Smp Id: WG224895-5
Inj Date : 16-MAR-2018 13:34 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG224895-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Meth Date : 19-Mar-2018 08:27 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 13:34 Cal File: N7971.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.618	2.639	(0.376)	237280	7.00000	7.14(M)	M6
	2 1,4-Dioxane	88	2.660	2.660	(0.382)	242156	7.00000	6.41	
	3 N-Nitrosodimethylamine	74	3.205	3.216	(0.460)	301149	7.00000	7.10	
	4 Pyridine	79	3.226	3.247	(0.463)	561257	7.00000	7.90	
	5 Benzaldehyde	77	6.412	6.402	(0.921)	163219	7.00000	7.70	
	6 Phenol	94	6.674	6.663	(0.958)	741809	7.00000	7.24	
	7 Bis(2-Chloroethyl)ether	93	6.664	6.643	(0.957)	566997	7.00000	6.81(Q)	
	8 2-Chlorophenol	128	6.744	6.724	(0.968)	657269	7.00000	7.24	
	9 1,3-Dichlorobenzene	146	6.895	6.875	(0.990)	679236	7.00000	7.39	
*	10 1,4-Dichlorobenzene-D4	152	6.965	6.955	(1.000)	51827	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.986	6.975	(1.003)	699020	7.00000	7.34	
	12 1,2-Dichlorobenzene	146	7.187	7.167	(1.032)	663504	7.00000	7.29	
	13 2,2'-Oxybis(1-chloropropane)	45	7.358	7.338	(1.056)	864582	7.00000	7.38	
	14 2-Methylphenol	108	7.408	7.398	(1.064)	546429	7.00000	7.16	
	15 Acetophenone	105	7.519	7.499	(0.872)	761659	7.00000	7.30	
	16 N-Nitroso-di-n-propylamine	70	7.539	7.519	(1.082)	400683	7.00000	7.29	
	17 3&4-Methylphenol	108	7.630	7.620	(1.095)	554659	7.00000	7.44	
	18 Hexachloroethane	117	7.610	7.589	(1.092)	241099	7.00000	7.18	
	19 Nitrobenzene	77	7.720	7.710	(0.895)	567906	7.00000	6.60	
	20 Isophorone	82	8.042	8.032	(0.932)	1009374	7.00000	7.66	
	21 2-Nitrophenol	139	8.153	8.133	(0.945)	330625	7.00000	7.29	

2:47 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7971.D
Report Date: 19-Mar-2018 09:22

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.284	8.274	(0.960)	535412	7.00000	7.22	
	23 bis(2-Chloroethoxy)methane	93	8.355	8.344	(0.968)	670970	7.00000	7.29	
	24 2,4-Dichlorophenol	162	8.526	8.515	(0.988)	461600	7.00000	7.36	
	25 1,2,4-Trichlorobenzene	180	8.566	8.556	(0.993)	463951	7.00000	7.12	
*	26 Naphthalene-D8	136	8.626	8.606	(1.000)	169319	0.80000	(a)	
	27 Naphthalene	128	8.646	8.636	(1.002)	1537883	7.00000	7.19	
	28 4-Chloroaniline	127	8.777	8.767	(1.018)	666761	7.00000	7.82	
	29 Hexachlorobutadiene	225	8.848	8.828	(1.026)	244313	7.00000	7.00	
	30 Caprolactam	113	9.228	9.228	(1.070)	165757	7.00000	7.09	
	31 4-Chloro-3-Methylphenol	107	9.503	9.493	(1.102)	428524	7.00000	7.17	
$	32 2-Methylnaphthalene-D10	152	9.543	9.523	(1.106)	723244	7.00000	7.26	
	33 2-Methylnaphthalene	142	9.582	9.562	(1.111)	1007066	7.00000	6.91	
	34 1-Methylnaphthalene	142	9.710	9.690	(1.126)	914872	7.00000	6.68	
	35 Hexachlorocyclopentadiene	237	9.808	9.789	(0.895)	136421	7.00000	6.88	
	36 1,2,4,5-Tetrachlorobenzene	216	9.818	9.798	(0.896)	415603	7.00000	7.02	
$	37 2,4-Dibromophenol	252	9.995	9.985	(0.912)	234924	7.00000	7.18(Q)	
	38 2,4,6-Trichlorophenol	196	10.015	9.995	(0.914)	271266	7.00000	7.31	
	39 2,4,5-Trichlorophenol	196	10.094	10.084	(0.921)	288552	7.00000	6.92	
	40 1,1'-Biphenyl	154	10.212	10.192	(0.932)	1147650	7.00000	7.06	
	41 2-Chloronaphthalene	164	10.222	10.202	(0.933)	302294	7.00000	7.23	
	42 2-Nitroaniline	65	10.399	10.389	(0.949)	263407	7.00000	7.42	
	43 Dimethyl Phthalate	163	10.660	10.638	(0.973)	1013304	7.00000	7.16	
	44 2,6-Dinitrotoluene	165	10.725	10.714	(0.979)	252046	7.00000	7.40(Q)	
	45 Acenaphthylene	152	10.769	10.747	(0.983)	1292901	7.00000	7.04	
	46 3-Nitroaniline	138	10.965	10.954	(1.001)	221889	7.00000	7.77	
*	47 Acenaphthene-D10	164	10.954	10.943	(1.000)	69234	0.80000	(a)	
	48 Acenaphthene	153	10.998	10.976	(1.004)	854598	7.00000	7.12	
	49 2,4-Dinitrophenol	184	11.139	11.117	(1.017)	97698	7.00000	7.34	
	50 Dibenzofuran	168	11.237	11.226	(1.026)	1148305	7.00000	7.20	
	51 2,4-Dinitrotoluene	165	11.281	11.270	(1.030)	299429	7.00000	7.75	
	52 4-Nitrophenol	139	11.368	11.357	(1.038)	140974	7.00000	7.30(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	11.455	11.444	(1.046)	234541	7.00000	7.68	
	54 Diethylphthalate	149	11.597	11.586	(1.059)	1007470	7.00000	7.25	
$	55 Fluorene-D10	174	11.662	11.640	(1.065)	611948	7.00000	7.18	
	56 Fluorene	166	11.695	11.673	(1.068)	886245	7.00000	7.20	
	57 4-Chlorophenyl-phenylether	204	11.717	11.695	(1.070)	464135	7.00000	7.18	
	58 4-Nitroaniline	138	11.793	11.782	(1.077)	168801	7.00000	6.60(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	11.847	11.826	(0.915)	143551	7.00000	7.11	
	60 N-Nitrosodiphenylamine	169	11.891	11.869	(0.919)	730401	7.00000	7.10	
	61 4-Bromophenyl-phenylether	248	12.357	12.346	(0.955)	240999	7.00000	7.06	
	62 Hexachlorobenzene	284	12.453	12.431	(0.962)	198790	7.00000	6.88	
	63 Atrazine	200	12.645	12.623	(0.977)	162820	7.00000	7.43	
	64 Pentachlorophenol	266	12.762	12.741	(0.986)	90449	7.00000	7.07	
*	65 Phenanthrene-D10	188	12.944	12.922	(1.000)	100469	0.80000	(a)	
	66 Phenanthrene	178	12.965	12.954	(1.002)	1147739	7.00000	7.39	
	67 Anthracene	178	13.040	13.018	(1.007)	1210689	7.00000	6.98	
	68 Carbazole	167	13.296	13.275	(1.027)	957038	7.00000	7.30	
	69 Di-n-butylphthalate	149	13.798	13.776	(1.066)	1591359	7.00000	7.29	
	70 Fluoranthene	202	14.569	14.551	(1.126)	1044283	7.00000	7.16	
$	71 Pyrene-D10	212	14.841	14.813	(0.893)	639828	7.00000	7.22	
	72 Pyrene	202	14.860	14.841	(0.894)	1081651	7.00000	7.01	
	73 Butylbenzylphthalate	149	15.798	15.780	(0.951)	630834	7.00000	7.51	
	74 Benzo(a)anthracene	228	16.596	16.624	(0.999)	627717	7.00000	7.15	
	75 3,3'-Dichlorobenzidine	252	16.605	16.577	(0.999)	180392	7.00000	6.88	

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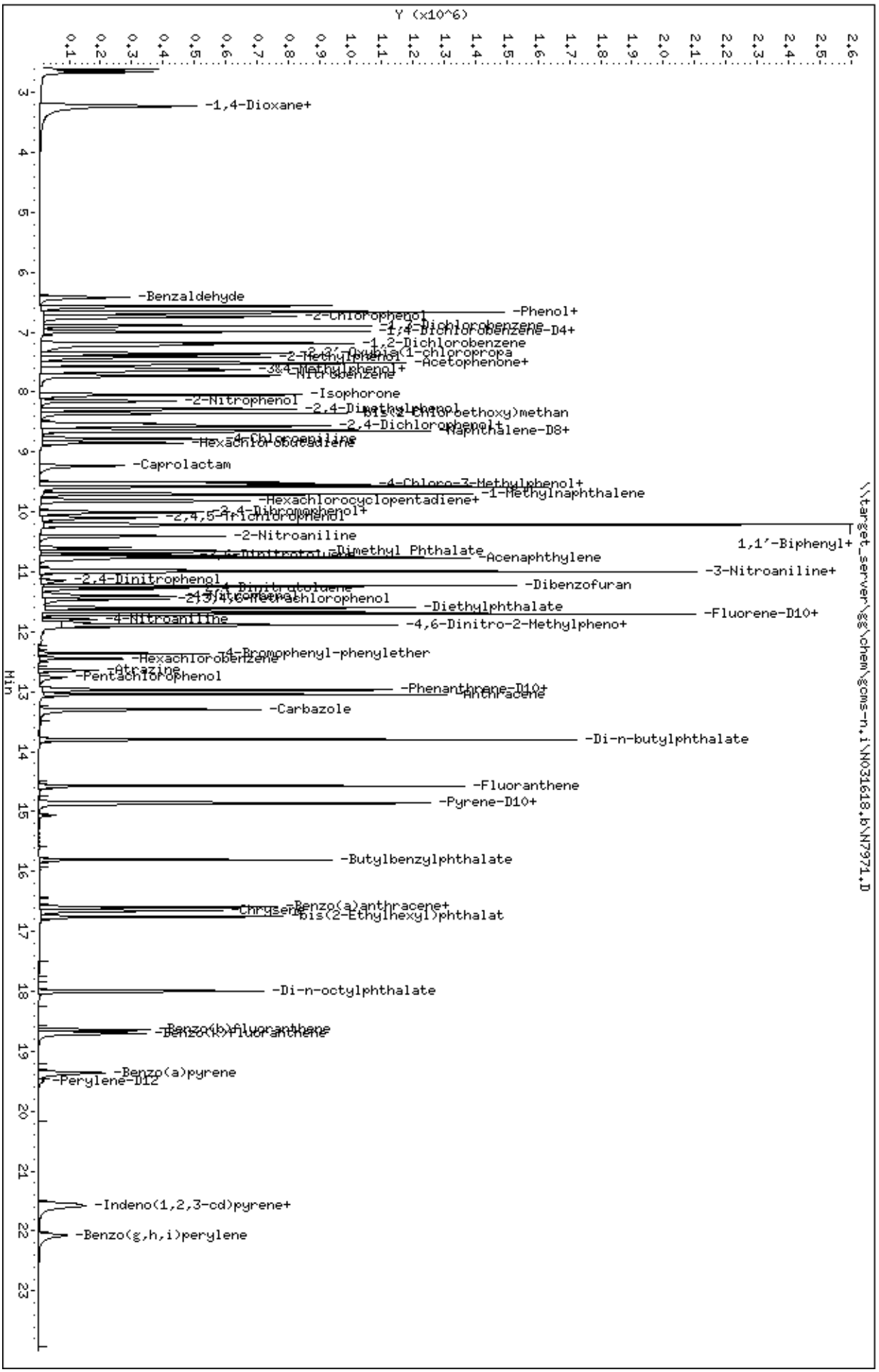
Report Date: 19-Mar-2018 09:22

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.615	16.577	(1.000)	50163	0.80000	(a)	
	77 Chrysene	228	16.652	16.624	(1.002)	663405	7.00000	7.43	
	78 bis(2-Ethylhexyl)phthalate	149	16.755	16.727	(1.008)	888903	7.00000	7.27	
	79 Di-n-octylphthalate	149	17.998	17.964	(1.083)	1302408	7.00000	7.22	
	80 Benzo(b)fluoranthene	252	18.646	18.611	(0.956)	484544	7.00000	7.77	
	81 Benzo(k)fluoranthene	252	18.702	19.316	(0.959)	544873	7.00000	6.32(H)	
	82 Benzo(a)pyrene	252	19.361	19.316	(0.993)	431542	7.00000	6.93	
*	83 Perylene-D12	264	19.497	19.440	(1.000)	37537	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.542	21.507	(1.297)	403148	7.00000	6.72	
	86 Dibenzo(a,h)anthracene	278	21.587	21.541	(1.107)	306121	7.00000	7.11	
	87 Benzo(g,h,i)perylene	276	22.075	22.018	(1.132)	373740	7.00000	6.90	
M	88 Total PAHs	100				2721177	126.000	(a)	
M	324 Total Low PAHs	100				7937121	49.0000	(a)	
M	325 Total High PAHs	100				4154719	42.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Sample Info: WG224895-5
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Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N031618.b\N7971.D
Y (x10^6)
Min
-1,4-Dioxane+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,2-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Acetophenone+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-Naphthalene-D8+
-2,4-Dichlorophenol+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7972.D
Report Date: 19-Mar-2018 09:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N031618.b\N7972.D
Lab Smp Id: WG224895-6
Inj Date : 16-MAR-2018 14:06
Operator : JCG   Inst ID: gcms-n.i
Smp Info : WG224895-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Meth Date : 19-Mar-2018 08:27 cgomez   Quant Type: ISTD
Cal Date : 16-MAR-2018 14:06   Cal File: N7972.D
Als bottle: 6   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.607	2.639	(0.374)	342510	10.0000	10.6(M)	M6
	2 1,4-Dioxane	88	2.660	2.660	(0.382)	334998	10.0000	9.14	
	3 N-Nitrosodimethylamine	74	3.195	3.216	(0.459)	448036	10.0000	10.9	
	4 Pyridine	79	3.216	3.247	(0.462)	755157	10.0000	11.0	
	5 Benzaldehyde	77	6.412	6.402	(0.921)	221751	10.0000	10.8	
	6 Phenol	94	6.664	6.663	(0.957)	1024036	10.0000	10.3	
	7 Bis(2-Chloroethyl)ether	93	6.664	6.643	(0.957)	842435	10.0000	10.4	
	8 2-Chlorophenol	128	6.744	6.724	(0.968)	913913	10.0000	10.4	
	9 1,3-Dichlorobenzene	146	6.895	6.875	(0.990)	947378	10.0000	10.6	
*	10 1,4-Dichlorobenzene-D4	152	6.965	6.955	(1.000)	50235	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.986	6.975	(1.003)	963655	10.0000	10.4	
	12 1,2-Dichlorobenzene	146	7.187	7.167	(1.032)	916596	10.0000	10.4	
	13 2,2'-Oxybis(1-chloropropane)	45	7.358	7.338	(1.056)	1184741	10.0000	10.4	
	14 2-Methylphenol	108	7.408	7.398	(1.064)	757567	10.0000	10.2	
	15 Acetophenone	105	7.519	7.499	(0.872)	1034709	10.0000	10.4	
	16 N-Nitroso-di-n-propylamine	70	7.539	7.519	(1.082)	542388	10.0000	10.2	
	17 3&4-Methylphenol	108	7.630	7.620	(1.095)	796680	10.0000	11.0	
	18 Hexachloroethane	117	7.610	7.589	(1.092)	335339	10.0000	10.3	
	19 Nitrobenzene	77	7.720	7.710	(0.895)	790193	10.0000	9.59	
	20 Isophorone	82	8.042	8.032	(0.932)	1376783	10.0000	10.9	
	21 2-Nitrophenol	139	8.153	8.133	(0.945)	454389	10.0000	10.4	

JCG
2:47 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7972.D
Report Date: 19-Mar-2018 09:22

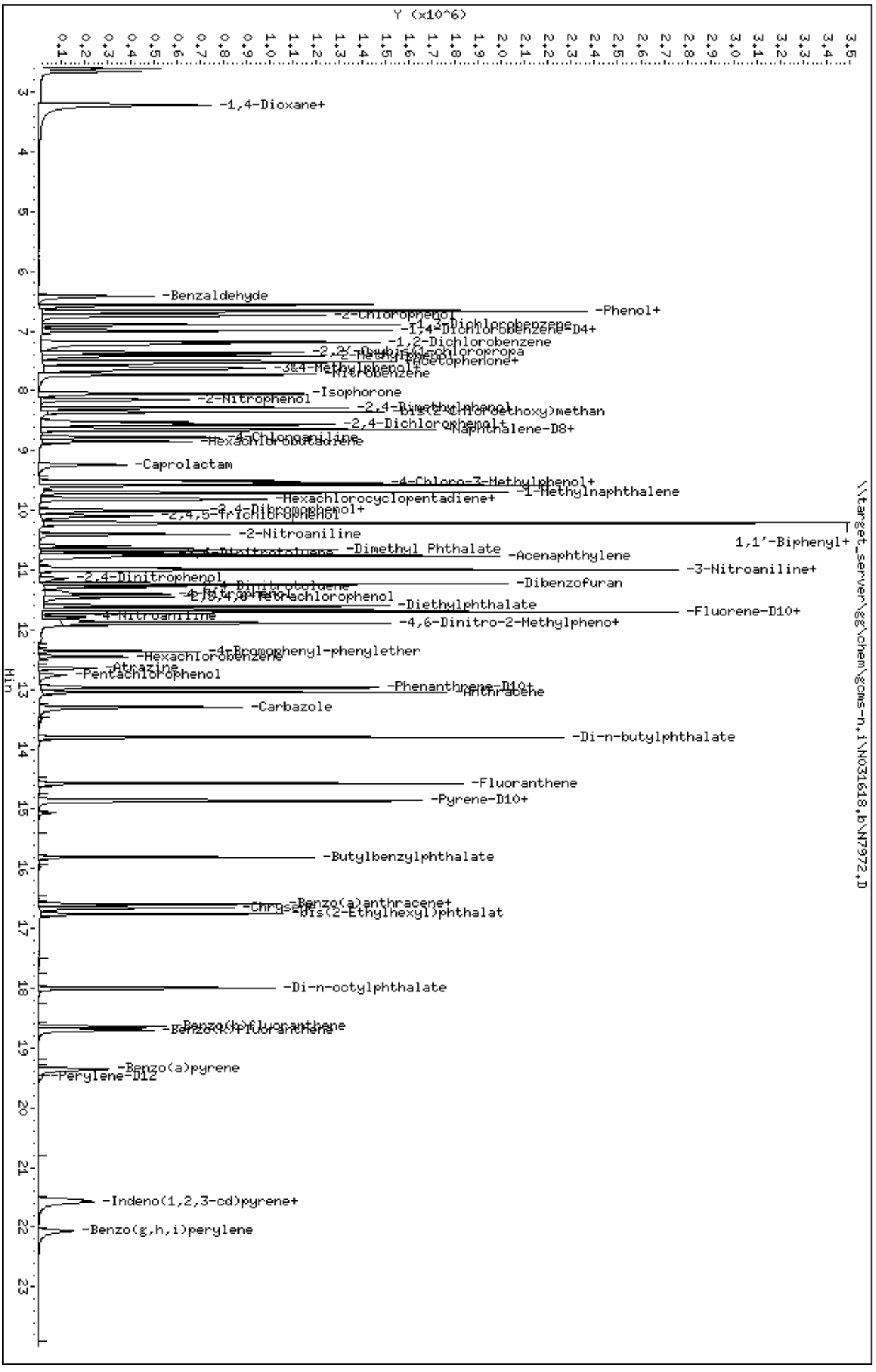
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.284	8.274	(0.960)	735749	10.0000	10.4	
	23 bis(2-Chloroethoxy)methane	93	8.355	8.344	(0.968)	934781	10.0000	10.6	
	24 2,4-Dichlorophenol	162	8.526	8.515	(0.988)	629203	10.0000	10.5	
	25 1,2,4-Trichlorobenzene	180	8.566	8.556	(0.993)	627676	10.0000	10.0	
*	26 Naphthalene-D8	136	8.626	8.606	(1.000)	162226	0.80000	(a)	
	27 Naphthalene	128	8.646	8.636	(1.002)	2086855	10.0000	10.2	
	28 4-Chloroaniline	127	8.777	8.767	(1.018)	898454	10.0000	11.0	
	29 Hexachlorobutadiene	225	8.848	8.828	(1.026)	340619	10.0000	10.2	
	30 Caprolactam	113	9.237	9.228	(1.071)	225055	10.0000	10.0	
	31 4-Chloro-3-Methylphenol	107	9.503	9.493	(1.102)	588188	10.0000	10.3	
$	32 2-Methylnaphthalene-D10	152	9.543	9.523	(1.106)	971577	10.0000	10.2	
	33 2-Methylnaphthalene	142	9.582	9.562	(1.111)	1329374	10.0000	10.2	
	34 1-Methylnaphthalene	142	9.710	9.690	(1.126)	1236584	10.0000	9.42	
	35 Hexachlorocyclopentadiene	237	9.808	9.789	(0.895)	203810	10.0000	10.2	
	36 1,2,4,5-Tetrachlorobenzene	216	9.818	9.798	(0.896)	562132	10.0000	10.0	
$	37 2,4-Dibromophenol	252	9.995	9.985	(0.912)	313790	10.0000	10.2	
	38 2,4,6-Trichlorophenol	196	10.005	9.995	(0.913)	366176	10.0000	10.4	
	39 2,4,5-Trichlorophenol	196	10.094	10.084	(0.921)	389419	10.0000	9.89	
	40 1,1'-Biphenyl	154	10.212	10.192	(0.932)	1503125	10.0000	9.79	
	41 2-Chloronaphthalene	164	10.222	10.202	(0.933)	395040	10.0000	10.0	
	42 2-Nitroaniline	65	10.399	10.389	(0.949)	354189	10.0000	10.6	
	43 Dimethyl Phthalate	163	10.660	10.638	(0.973)	1347085	10.0000	10.1	
	44 2,6-Dinitrotoluene	165	10.725	10.714	(0.979)	330535	10.0000	10.3	
	45 Acenaphthylene	152	10.769	10.747	(0.983)	1725268	10.0000	9.94	
	46 3-Nitroaniline	138	10.965	10.954	(1.001)	291797	10.0000	10.8	
*	47 Acenaphthene-D10	164	10.954	10.943	(1.000)	65421	0.80000	(a)	
	48 Acenaphthene	153	10.998	10.976	(1.004)	1115485	10.0000	9.84	
	49 2,4-Dinitrophenol	184	11.139	11.117	(1.017)	134026	10.0000	9.91	
	50 Dibenzofuran	168	11.237	11.226	(1.026)	1519614	10.0000	10.1	
	51 2,4-Dinitrotoluene	165	11.281	11.270	(1.030)	396026	10.0000	10.8	
	52 4-Nitrophenol	139	11.357	11.357	(1.037)	188194	10.0000	9.85(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	11.455	11.444	(1.046)	313001	10.0000	10.8	
	54 Diethylphthalate	149	11.597	11.586	(1.059)	1315639	10.0000	10.0	
$	55 Fluorene-D10	174	11.662	11.640	(1.065)	797698	10.0000	9.90	
	56 Fluorene	166	11.695	11.673	(1.068)	1159211	10.0000	9.96	
	57 4-Chlorophenyl-phenylether	204	11.717	11.695	(1.070)	613239	10.0000	10.0	
	58 4-Nitroaniline	138	11.793	11.782	(1.077)	221935	10.0000	9.18	
	59 4,6-Dinitro-2-Methylphenol	198	11.847	11.826	(0.915)	197030	10.0000	10.0	
	60 N-Nitrosodiphenylamine	169	11.891	11.869	(0.919)	963428	10.0000	9.81	
	61 4-Bromophenyl-phenylether	248	12.367	12.346	(0.955)	317856	10.0000	9.76	
	62 Hexachlorobenzene	284	12.453	12.431	(0.962)	265617	10.0000	9.64	
	63 Atrazine	200	12.645	12.623	(0.977)	207694	10.0000	9.93	
	64 Pentachlorophenol	266	12.762	12.741	(0.986)	123795	10.0000	9.97	
*	65 Phenanthrene-D10	188	12.944	12.922	(1.000)	95916	0.80000	(a)	
	66 Phenanthrene	178	12.965	12.954	(1.002)	1499124	10.0000	10.1	
	67 Anthracene	178	13.040	13.018	(1.007)	1598149	10.0000	9.65	
	68 Carbazole	167	13.296	13.275	(1.027)	1246686	10.0000	9.96	
	69 Di-n-butylphthalate	149	13.798	13.776	(1.066)	2052849	10.0000	9.86	
	70 Fluoranthene	202	14.569	14.551	(1.126)	1346246	10.0000	9.66	
$	71 Pyrene-D10	212	14.841	14.813	(0.894)	830841	10.0000	9.47	
	72 Pyrene	202	14.860	14.841	(0.895)	1425356	10.0000	9.33	
	73 Butylbenzylphthalate	149	15.798	15.780	(0.951)	809418	10.0000	9.74	
	74 Benzo(a)anthracene	228	16.596	16.624	(0.999)	863491	10.0000	9.93	
	75 3,3'-Dichlorobenzidine	252	16.605	16.577	(1.000)	245710	10.0000	9.46	

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7972.D
Report Date: 19-Mar-2018 09:22

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.605	16.577	(1.000)	49659	0.80000	(a)	
	77 Chrysene	228	16.652	16.624	(1.003)	905814	10.0000	10.3	
	78 bis(2-Ethylhexyl)phthalate	149	16.755	16.727	(1.009)	1173681	10.0000	9.70	
	79 Di-n-octylphthalate	149	17.998	17.964	(1.084)	1752547	10.0000	9.82	
	80 Benzo(b)fluoranthene	252	18.646	18.611	(0.956)	647962	10.0000	10.2	
	81 Benzo(k)fluoranthene	252	18.702	19.316	(0.959)	824559	10.0000	9.36(H)	
	82 Benzo(a)pyrene	252	19.350	19.316	(0.992)	627223	10.0000	9.84	
*	83 Perylene-D12	264	19.497	19.440	(1.000)	38397	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.542	21.507	(1.297)	588033	10.0000	9.90	
	86 Dibenzo(a,h)anthracene	278	21.576	21.541	(1.107)	450191	10.0000	10.2	
	87 Benzo(g,h,i)perylene	276	22.064	22.018	(1.132)	537739	10.0000	9.71	
M	88 Total PAHs	100				3834877	180.000	(a)	
M	324 Total Low PAHs	100				10513466	70.0000	(a)	
M	325 Total High PAHs	100				5618321	60.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N031618.b\N7972.D
Date : 16-MAR-2018 14:06
Client ID:
Sample Info: WG224895-6
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N031618.b\N7972.D
Y (x10^6)
Min
-1,4-Dioxane+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-2-Methylphenol
-Acetophenone+
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-2,4-Dinitrophenol
-4-Nitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Report Date: 19-Mar-2018 09:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Lab Smp Id: WG224895-7
Inj Date : 16-MAR-2018 14:38 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG224895-7
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Meth Date : 19-Mar-2018 08:27 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.607	2.639	(0.374)	549785	15.0000	16.0(AM)	M6
	2 1,4-Dioxane	88	2.649	2.660	(0.380)	519722	15.0000	13.3	
	3 N-Nitrosodimethylamine	74	3.184	3.216	(0.457)	764290	15.0000	17.4(A)	
	4 Pyridine	79	3.205	3.247	(0.460)	1136126	15.0000	15.5(A)	
	5 Benzaldehyde	77	6.412	6.402	(0.919)	325627	15.0000	14.8	
	6 Phenol	94	6.663	6.663	(0.955)	1529957	15.0000	14.4	
	7 Bis(2-Chloroethyl)ether	93	6.663	6.643	(0.955)	1271107	15.0000	14.8	
	8 2-Chlorophenol	128	6.734	6.724	(0.965)	1372992	15.0000	14.6	
	9 1,3-Dichlorobenzene	146	6.895	6.875	(0.988)	1405047	15.0000	14.8	
*	10 1,4-Dichlorobenzene-D4	152	6.975	6.955	(1.000)	53605	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.996	6.975	(1.003)	1403496	15.0000	14.2	
	12 1,2-Dichlorobenzene	146	7.187	7.167	(1.030)	1368805	15.0000	14.5	
	13 2,2'-Oxybis(1-chloropropane)	45	7.358	7.338	(1.055)	1761148	15.0000	14.5	
	14 2-Methylphenol	108	7.408	7.398	(1.062)	1157791	15.0000	14.7	
	15 Acetophenone	105	7.519	7.499	(0.872)	1595725	15.0000	14.9	
	16 N-Nitroso-di-n-propylamine	70	7.539	7.519	(1.081)	832905	15.0000	14.7	
	17 3&4-Methylphenol	108	7.630	7.620	(1.094)	1172750	15.0000	15.2(A)	
	18 Hexachloroethane	117	7.610	7.589	(1.091)	503447	15.0000	14.5	
	19 Nitrobenzene	77	7.720	7.710	(0.895)	1179991	15.0000	13.3	
	20 Isophorone	82	8.052	8.032	(0.933)	2090678	15.0000	15.4(A)	
	21 2-Nitrophenol	139	8.153	8.133	(0.945)	694820	15.0000	14.9	



2:47 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Report Date: 19-Mar-2018 09:22

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.284	8.274	(0.960)	1110700	15.0000	14.6	
	23 bis(2-Chloroethoxy)methane	93	8.354	8.344	(0.968)	1374198	15.0000	14.5	
	24 2,4-Dichlorophenol	162	8.516	8.515	(0.987)	973555	15.0000	15.1(A)	
	25 1,2,4-Trichlorobenzene	180	8.576	8.556	(0.994)	956187	15.0000	14.3	
*	26 Naphthalene-D8	136	8.626	8.606	(1.000)	174056	0.80000	(a)	
	27 Naphthalene	128	8.656	8.636	(1.004)	3112347	15.0000	14.1	
	28 4-Chloroaniline	127	8.777	8.767	(1.018)	1398139	15.0000	16.0(A)	
	29 Hexachlorobutadiene	225	8.848	8.828	(1.026)	507886	15.0000	14.2	
	30 Caprolactam	113	9.257	9.228	(1.073)	362056	15.0000	15.0	
	31 4-Chloro-3-Methylphenol	107	9.503	9.493	(1.102)	905618	15.0000	14.7	
$	32 2-Methylnaphthalene-D10	152	9.543	9.523	(1.106)	1455163	15.0000	14.2	
	33 2-Methylnaphthalene	142	9.582	9.562	(1.111)	1921570	15.0000	14.9	
	34 1-Methylnaphthalene	142	9.710	9.690	(1.126)	1881289	15.0000	13.4	
	35 Hexachlorocyclopentadiene	237	9.808	9.789	(1.000)	343236	15.0000	14.9	
	36 1,2,4,5-Tetrachlorobenzene	216	9.818	9.798	(1.000)	836442	15.0000	14.0	
$	37 2,4-Dibromophenol	252	9.985	9.985	(1.000)	495974	15.0000	15.1	
	38 2,4,6-Trichlorophenol	196	10.005	9.995	(1.000)	566779	15.0000	15.2(A)	
	39 2,4,5-Trichlorophenol	196	10.084	10.084	(1.000)	578007	15.0000	13.8	
	40 1,1'-Biphenyl	154	10.212	10.192	(1.000)	2303020	15.0000	14.1	
	41 2-Chloronaphthalene	164	10.222	10.202	(1.000)	605746	15.0000	14.4	
	42 2-Nitroaniline	65	10.399	10.389	(1.000)	562167	15.0000	15.8(A)	
	43 Dimethyl Phthalate	163	10.660	10.638	(1.000)	2104749	15.0000	14.8	
	44 2,6-Dinitrotoluene	165	10.725	10.714	(1.000)	517071	15.0000	15.1(A)	
	45 Acenaphthylene	152	10.769	10.747	(1.000)	2650474	15.0000	14.3	
	46 3-Nitroaniline	138	10.954	10.954	(1.000)	474825	15.0000	16.5(A)	
*	47 Acenaphthene-D10	164	10.954	10.943	(1.000)	69651	0.80000	(aM)	M6
	48 Acenaphthene	153	10.997	10.976	(1.000)	1725652	15.0000	14.3	
	49 2,4-Dinitrophenol	184	11.128	11.117	(1.000)	254810	15.0000	15.0	
	50 Dibenzofuran	168	11.237	11.226	(1.000)	2291082	15.0000	14.3	
	51 2,4-Dinitrotoluene	165	11.281	11.270	(1.000)	638599	15.0000	16.4(A)	
	52 4-Nitrophenol	139	11.335	11.357	(1.000)	336531	15.0000	15.0(A)	
	53 2,3,4,6-Tetrachlorophenol	232	11.455	11.444	(1.000)	489040	15.0000	15.9(A)	
	54 Diethylphthalate	149	11.608	11.586	(1.000)	2031695	15.0000	14.5	
$	55 Fluorene-D10	174	11.662	11.640	(1.000)	1255376	15.0000	14.6(A)	
	56 Fluorene	166	11.695	11.673	(1.000)	1779187	15.0000	14.4	
	57 4-Chlorophenyl-phenylether	204	11.717	11.695	(1.000)	951365	15.0000	14.6	
	58 4-Nitroaniline	138	11.782	11.782	(1.000)	350909	15.0000	13.6	
	59 4,6-Dinitro-2-Methylphenol	198	11.836	11.826	(0.914)	334890	15.0000	15.1(A)	
	60 N-Nitrosodiphenylamine	169	11.891	11.869	(0.919)	1555715	15.0000	14.2	
	61 4-Bromophenyl-phenylether	248	12.356	12.346	(0.955)	501309	15.0000	13.8	
	62 Hexachlorobenzene	284	12.453	12.431	(0.962)	413700	15.0000	13.5	
	63 Atrazine	200	12.645	12.623	(0.977)	340283	15.0000	14.6	
	64 Pentachlorophenol	266	12.751	12.741	(0.985)	210901	15.0000	15.1(A)	
*	65 Phenanthrene-D10	188	12.944	12.922	(1.000)	106583	0.80000	(a)	
	66 Phenanthrene	178	12.976	12.954	(1.002)	2322232	15.0000	14.1	
	67 Anthracene	178	13.040	13.018	(1.007)	2471830	15.0000	13.4	
	68 Carbazole	167	13.285	13.275	(1.026)	2069133	15.0000	14.9	
	69 Di-n-butylphthalate	149	13.798	13.776	(1.066)	3149170	15.0000	13.6	
	70 Fluoranthene	202	14.569	14.551	(1.126)	2139924	15.0000	13.8	
$	71 Pyrene-D10	212	14.841	14.813	(0.894)	1326389	15.0000	12.8(A)	
	72 Pyrene	202	14.860	14.841	(0.895)	2306612	15.0000	12.8	
	73 Butylbenzylphthalate	149	15.798	15.780	(0.951)	1312589	15.0000	13.4	
	74 Benzo(a)anthracene	228	16.596	16.624	(0.999)	1487646	15.0000	14.5	
	75 3,3'-Dichlorobenzidine	252	16.596	16.577	(0.999)	382746	15.0000	12.5	



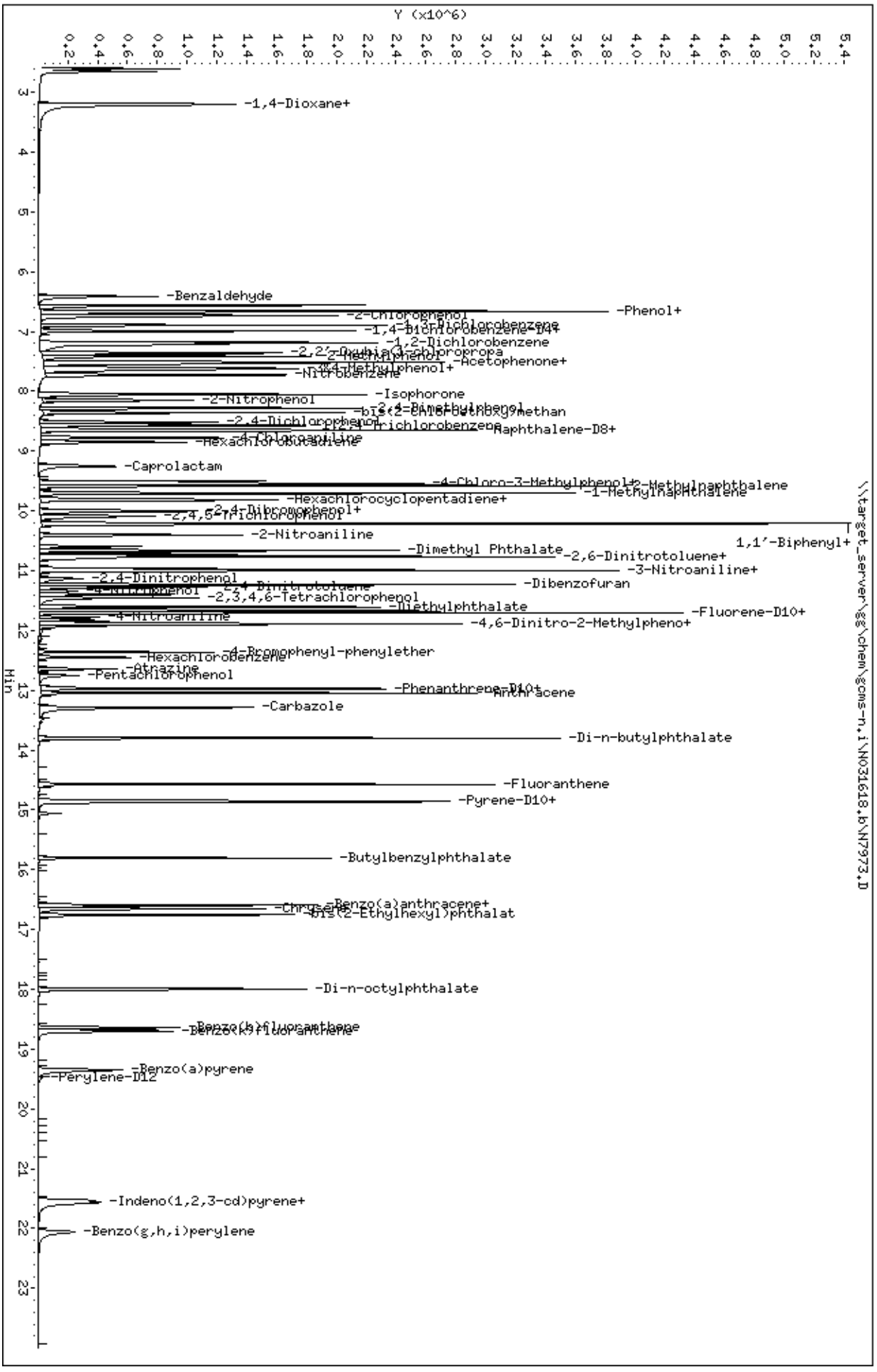
2:47 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Report Date: 19-Mar-2018 09:22

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.605	16.577	(1.000)	58471	0.80000	(a)	
	77 Chrysene	228	16.652	16.624	(1.003)	1488528	15.0000	14.5	
	78 bis(2-Ethylhexyl)phthalate	149	16.755	16.727	(1.009)	1882123	15.0000	13.2	
	79 Di-n-octylphthalate	149	17.998	17.964	(1.084)	2962602	15.0000	14.1	
	80 Benzo(b)fluoranthene	252	18.646	18.611	(0.957)	1113696	15.0000	15.3(A)	
	81 Benzo(k)fluoranthene	252	18.702	19.316	(0.960)	1330798	15.0000	13.2(H)	
	82 Benzo(a)pyrene	252	19.350	19.316	(0.993)	1045024	15.0000	14.4	
*	83 Perylene-D12	264	19.486	19.440	(1.000)	43804	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.530	21.507	(1.297)	983248	15.0000	14.0	
	86 Dibenzo(a,h)anthracene	278	21.576	21.541	(1.107)	756920	15.0000	15.0(A)	
	87 Benzo(g,h,i)perylene	276	22.053	22.018	(1.132)	881467	15.0000	14.0	
M	88 Total PAHs	100				6190498	270.000	(a)	
M	324 Total Low PAHs	100				15983292	105.000	(a)	
M	325 Total High PAHs	100				9224654	90.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 16-MAR-2018 14:38
Client ID:
Sample Info: WG224895-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N031618.b\N7973.D
Y (x10^6)
Min
-1,4-Dioxane+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Acetophenone+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-2-Methylnaphthalene
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7974.D
Report Date: 19-Mar-2018 08:08

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N031618.b\N7974.D
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Inj Date : 16-MAR-2018 15:10 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG224895-8
Misc Info : WG224895,WG224895,WG224895-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N031618.b\NSPSIM86.m
Meth Date : 16-Mar-2018 15:07 gcms-n.i Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 8 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
2	1,4-Dioxane	88	2.654	2.649	(0.381)	162380	5.00346	167	
3	N-Nitrosodimethylamine	74	3.210	3.184	(0.461)	202589	5.55900	185	
4	Pyridine	79	3.231	3.205	(0.464)	360200	5.90434	197	
5	Benzaldehyde	77	6.427	6.412	(0.922)	106871	5.87313	196	
6	Phenol	94	6.689	6.663	(0.960)	447519	5.08991	170	
7	Bis(2-Chloroethyl)ether	93	6.668	6.663	(0.957)	393868	5.50056	183	
8	2-Chlorophenol	128	6.749	6.734	(0.968)	384723	4.93243	164	
9	1,3-Dichlorobenzene	146	6.900	6.895	(0.990)	404298	5.12428	171	
* 10	1,4-Dichlorobenzene-D4	152	6.970	6.975	(1.000)	44508	0.80000	(Q)	
11	1,4-Dichlorobenzene	146	6.991	6.996	(1.003)	417803	5.10648	170	
12	1,2-Dichlorobenzene	146	7.192	7.187	(1.032)	390656	4.99840	167	
13	2,2'-Oxybis(1-chloropropane)	45	7.363	7.358	(1.056)	426426	4.23618	141	
14	2-Methylphenol	108	7.423	7.408	(1.065)	354361	5.40649	180	
15	Acetophenone	105	7.524	7.519	(0.872)	440759	5.17067	172	
16	N-Nitroso-di-n-propylamine	70	7.534	7.539	(1.081)	221472	4.67280	156	
17	3&4-Methylphenol	108	7.635	7.630	(1.095)	329969	5.15156	172	
18	Hexachloroethane	117	7.604	7.610	(1.091)	143073	4.95963	165	
19	Nitrobenzene	77	7.725	7.720	(0.895)	346332	4.92677	164	
20	Isophorone	82	8.047	8.052	(0.932)	538207	4.99731	166	
21	2-Nitrophenol	139	8.158	8.153	(0.945)	186844	5.03990	168	

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7974.D
Report Date: 19-Mar-2018 08:08

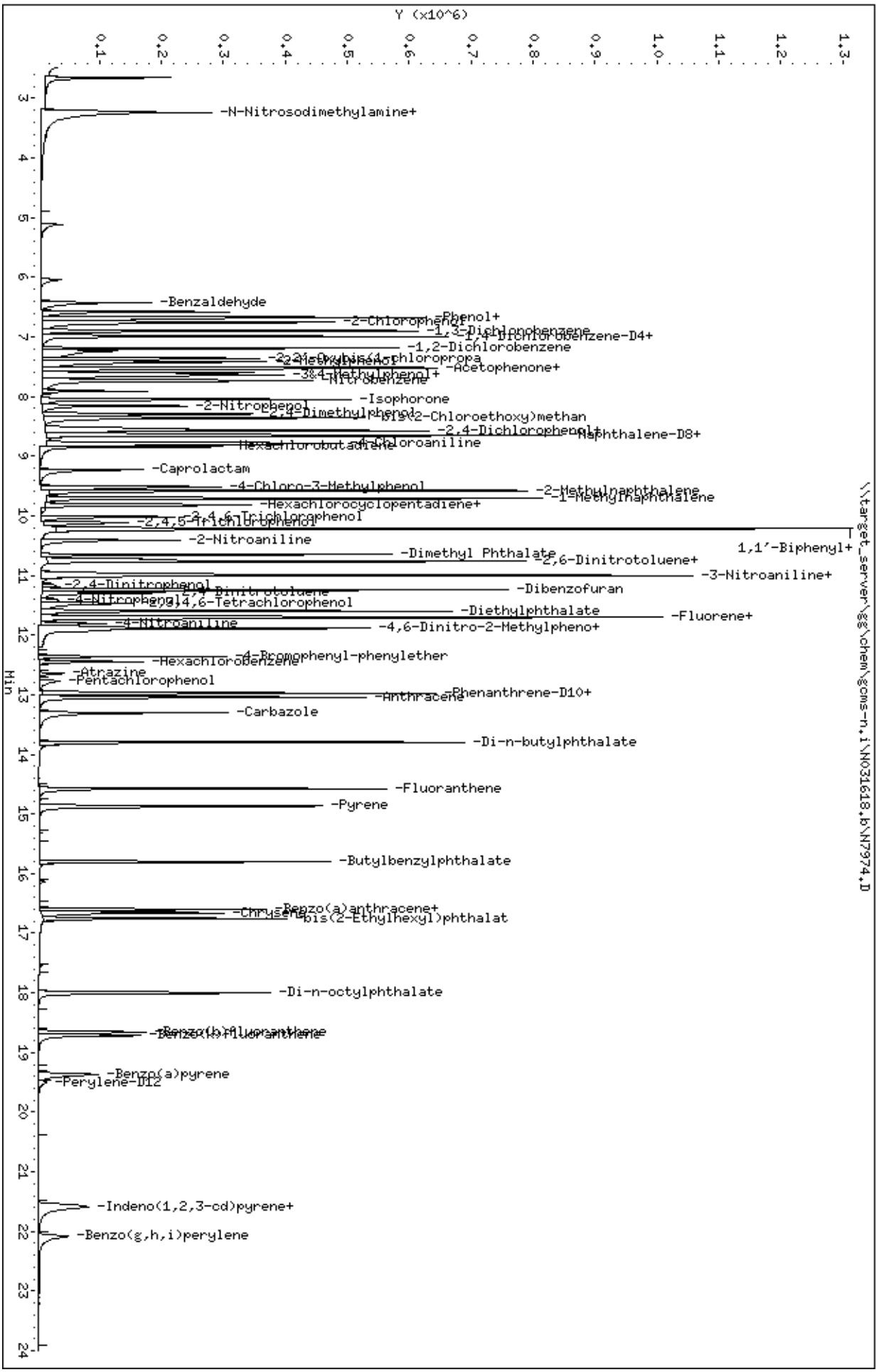
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
22	2,4-Dimethylphenol	107	8.289	8.284	(0.960)	299159	4.93993	165	
23	bis(2-Chloroethoxy)methane	93	8.359	8.354	(0.969)	384689	5.11310	170	
24	2,4-Dichlorophenol	162	8.541	8.516	(0.990)	260524	5.08648	170	
25	1,2,4-Trichlorobenzene	180	8.571	8.576	(0.993)	272704	5.12336	171	
* 26	Naphthalene-D8	136	8.631	8.626	(1.000)	138373	0.80000		
27	Naphthalene	128	8.651	8.656	(1.002)	887150	5.07269	169	
28	4-Chloroaniline	127	8.782	8.777	(1.017)	334368	4.80150	160	
29	Hexachlorobutadiene	225	8.843	8.848	(1.024)	145716	5.10736	170	
30	Caprolactam	113	9.232	9.257	(1.070)	93633	4.92366	164	
31	4-Chloro-3-Methylphenol	107	9.518	9.503	(1.103)	237552	4.86224	162	
33	2-Methylnaphthalene	142	9.587	9.582	(1.111)	610661	4.87833	163	
34	1-Methylnaphthalene	142	9.705	9.710	(1.124)	498608	4.45472	148	
35	Hexachlorocyclopentadiene	237	9.803	9.808	(0.895)	46159	3.20373	107(R)	
36	1,2,4,5-Tetrachlorobenzene	216	9.823	9.818	(0.896)	242130	5.09141	170	
38	2,4,6-Trichlorophenol	196	10.020	10.005	(0.914)	144645	4.85090	162	
39	2,4,5-Trichlorophenol	196	10.108	10.084	(0.922)	163570	4.88106	163	
40	1,1'-Biphenyl	154	10.217	10.212	(0.932)	662000	5.06749	169	
41	2-Chloronaphthalene	164	10.226	10.222	(0.933)	166790	4.96157	165	
42	2-Nitroaniline	65	10.404	10.399	(0.949)	150583	5.28001	176	
43	Dimethyl Phthalate	163	10.654	10.660	(0.972)	560426	4.92253	164	
44	2,6-Dinitrotoluene	165	10.730	10.725	(0.979)	133455	4.87765	162	
45	Acenaphthylene	152	10.763	10.769	(0.982)	690264	4.67494	156	
46	3-Nitroaniline	138	10.970	10.954	(1.001)	121320	5.28272	176	
* 47	Acenaphthene-D10	164	10.959	10.954	(1.000)	55658	0.80000		
48	Acenaphthene	153	11.002	10.997	(1.004)	477771	4.95498	165	
49	2,4-Dinitrophenol	184	11.177	11.128	(1.020)	38637	4.08149	136	
50	Dibenzofuran	168	11.242	11.237	(1.026)	634685	4.95334	165	
51	2,4-Dinitrotoluene	165	11.296	11.281	(1.031)	152421	4.90499	163	
52	4-Nitrophenol	139	11.416	11.335	(1.042)	61017	4.22569	141	
53	2,3,4,6-Tetrachlorophenol	232	11.471	11.455	(1.047)	96372	3.92744	131(R)	
54	Diethylphthalate	149	11.602	11.608	(1.059)	548795	4.91154	164	
56	Fluorene	166	11.700	11.695	(1.068)	486281	4.91301	164	
57	4-Chlorophenyl-phenylether	204	11.721	11.717	(1.070)	251602	4.84484	161	
58	4-Nitroaniline	138	11.809	11.782	(1.078)	107370	5.22252	174	
59	4,6-Dinitro-2-Methylphenol	198	11.863	11.836	(0.917)	64127	4.27152	142	
60	N-Nitrosodiphenylamine	169	11.885	11.891	(0.919)	325090	4.05288	135	
61	4-Bromophenyl-phenylether	248	12.361	12.356	(0.955)	127880	4.80689	160	
62	Hexachlorobenzene	284	12.447	12.453	(0.962)	105733	4.69631	156	
63	Atrazine	200	12.649	12.645	(0.978)	40438	2.36784	78.9(R)	
64	Pentachlorophenol	266	12.767	12.751	(0.987)	42130	4.37625	146	
* 65	Phenanthrene-D10	188	12.938	12.944	(1.000)	78342	0.80000		
66	Phenanthrene	178	12.970	12.976	(1.002)	574439	4.74587	158	
67	Anthracene	178	13.044	13.040	(1.008)	605062	4.47386	149	
68	Carbazole	167	13.301	13.285	(1.028)	500239	4.89273	163	
69	Di-n-butylphthalate	149	13.802	13.798	(1.067)	867082	5.09699	170	
70	Fluoranthene	202	14.574	14.569	(1.126)	537052	4.71972	157	
72	Pyrene	202	14.865	14.860	(0.895)	545947	4.53244	151	
73	Butylbenzylphthalate	149	15.803	15.798	(0.951)	325153	4.96196	165	
74	Benzo(a)anthracene	228	16.601	16.596	(0.999)	319997	4.66904	156	
75	3,3'-Dichlorobenzidine	252	16.610	16.596	(1.000)	103812	5.07165	169	
* 76	Chrysene-D12	240	16.610	16.605	(1.000)	39155	0.80000		
77	Chrysene	228	16.657	16.652	(1.003)	369918	5.24215	175	
78	bis(2-Ethylhexyl)phthalate	149	16.751	16.755	(1.008)	484939	5.08165	169	
79	Di-n-octylphthalate	149	18.003	17.998	(1.084)	715690	5.08679	170	

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7974.D
Report Date: 19-Mar-2018 08:08

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
80	Benzo(b)fluoranthene	252	18.650	18.646	(0.956)	255066	4.98943	166	
81	Benzo(k)fluoranthene	252	18.707	18.702	(0.959)	321919	4.55658	152(H)	
82	Benzo(a)pyrene	252	19.366	19.350	(0.993)	225200	4.40893	147	
* 83	Perylene-D12	264	19.502	19.486	(1.000)	30784	0.80000		
85	Indeno(1,2,3-cd)pyrene	276	21.558	21.530	(1.298)	229042	4.88829	163	
86	Dibenzo(a,h)anthracene	278	21.603	21.576	(1.108)	171616	4.85828	162	
87	Benzo(g,h,i)perylene	276	22.080	22.053	(1.132)	199076	4.48406	149	
M 88	Total PAHs	100				1503711	23.3731	779	
M 324	Total Low PAHs	100				4331628	33.7137	1120	
M 325	Total High PAHs	100				2169730	28.4306	948	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.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Volume Injected (uL): 1.0
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Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
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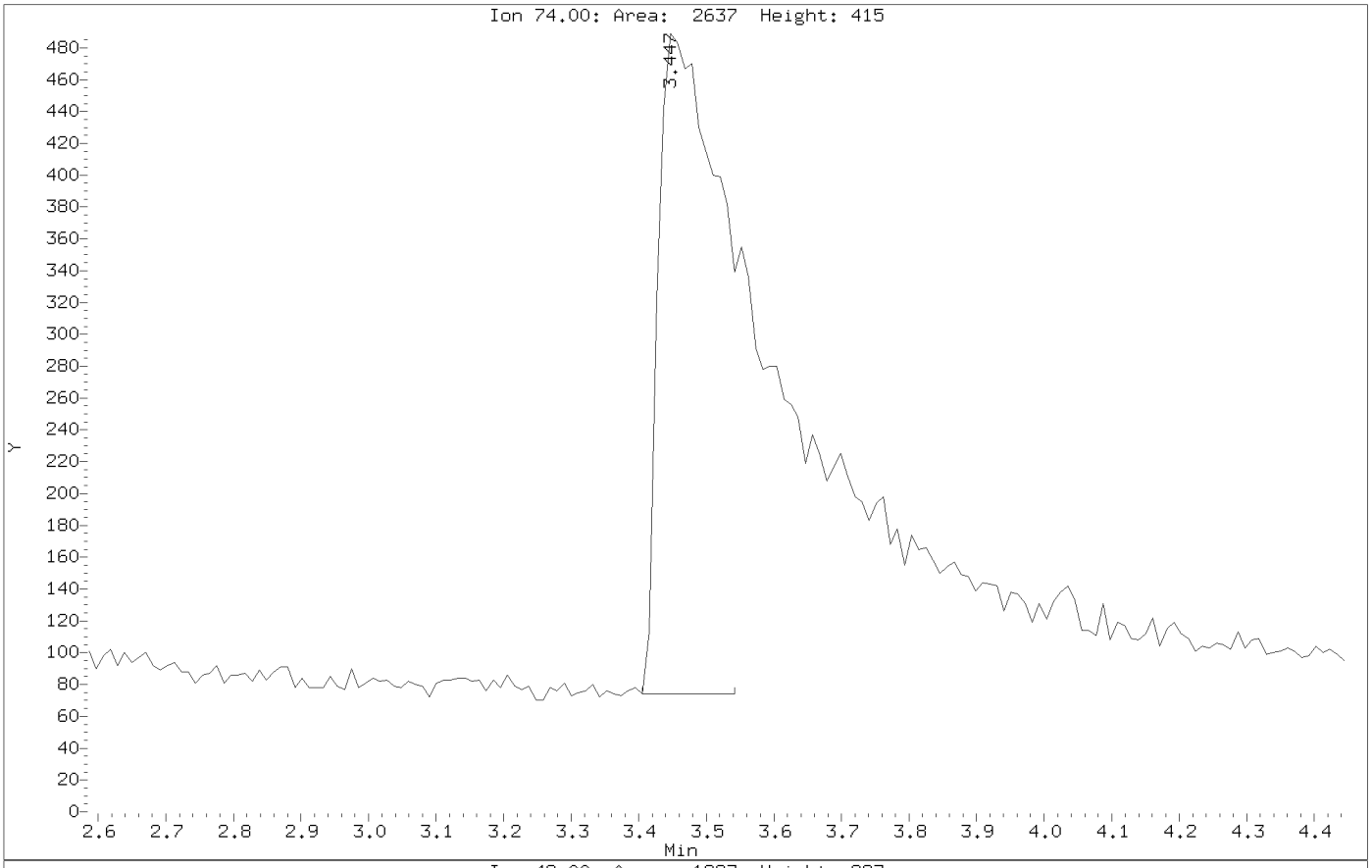
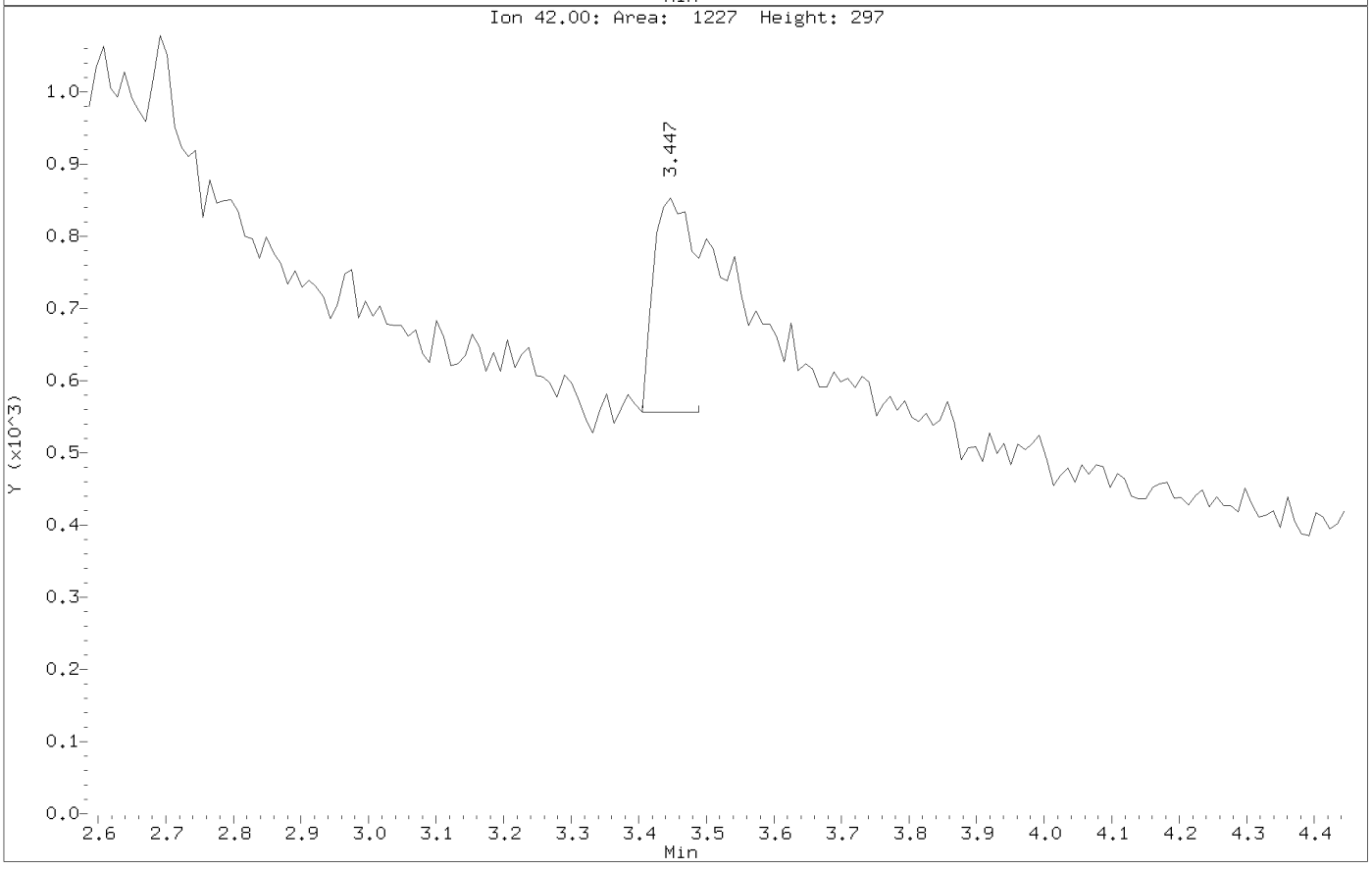
Y (x10^6)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-2-Chlorophenol+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Acetophenone+
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol+
-Naphthalene-D8+
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-Dibenzofuran
-Diethylphthalate
-Fluorene+
-4,6-Dinitro-2-Methylpheno+
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7969.D
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: N-Nitrosodimethylamine
CAS Number: 62-75-9

BEFORE MANUAL INTEGRATION





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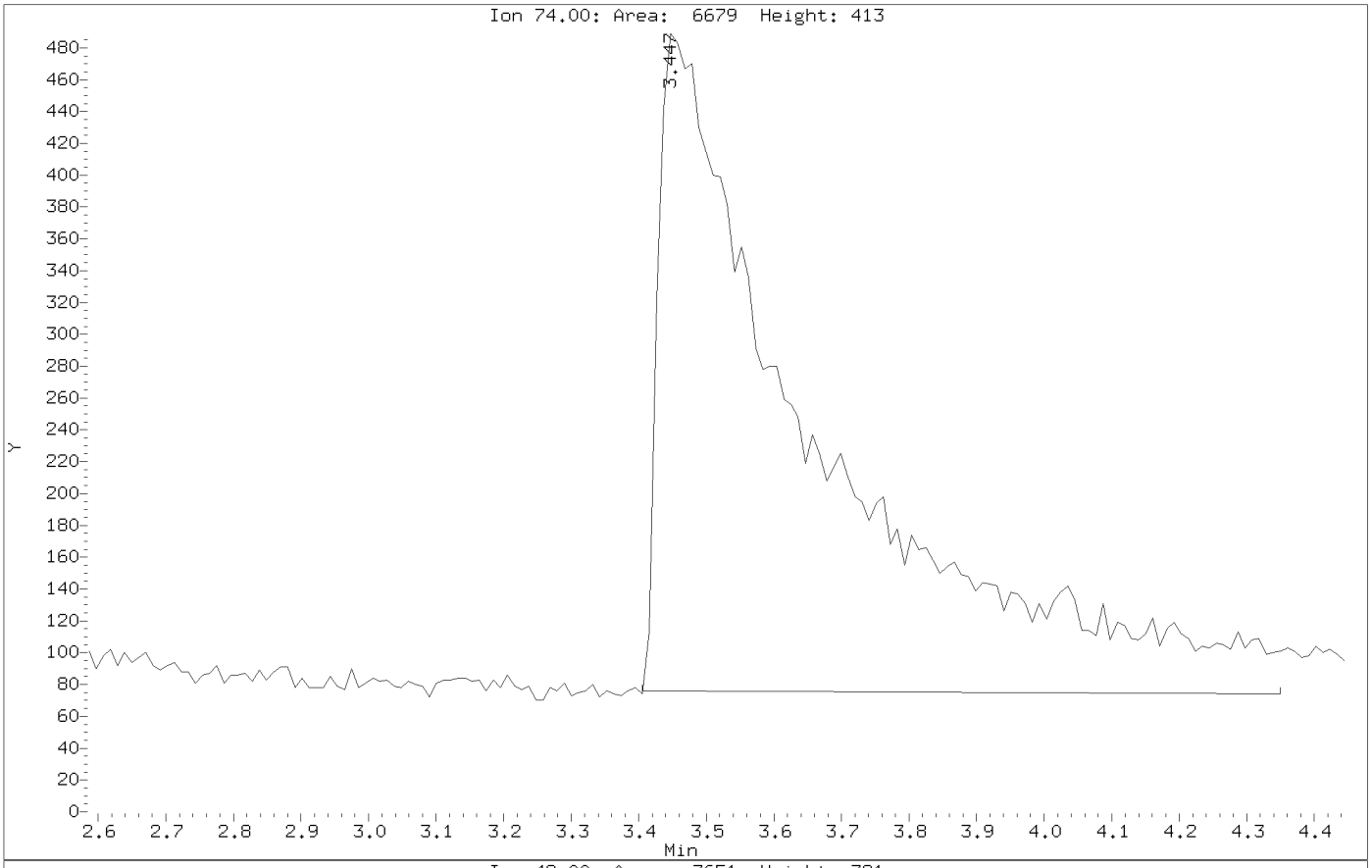
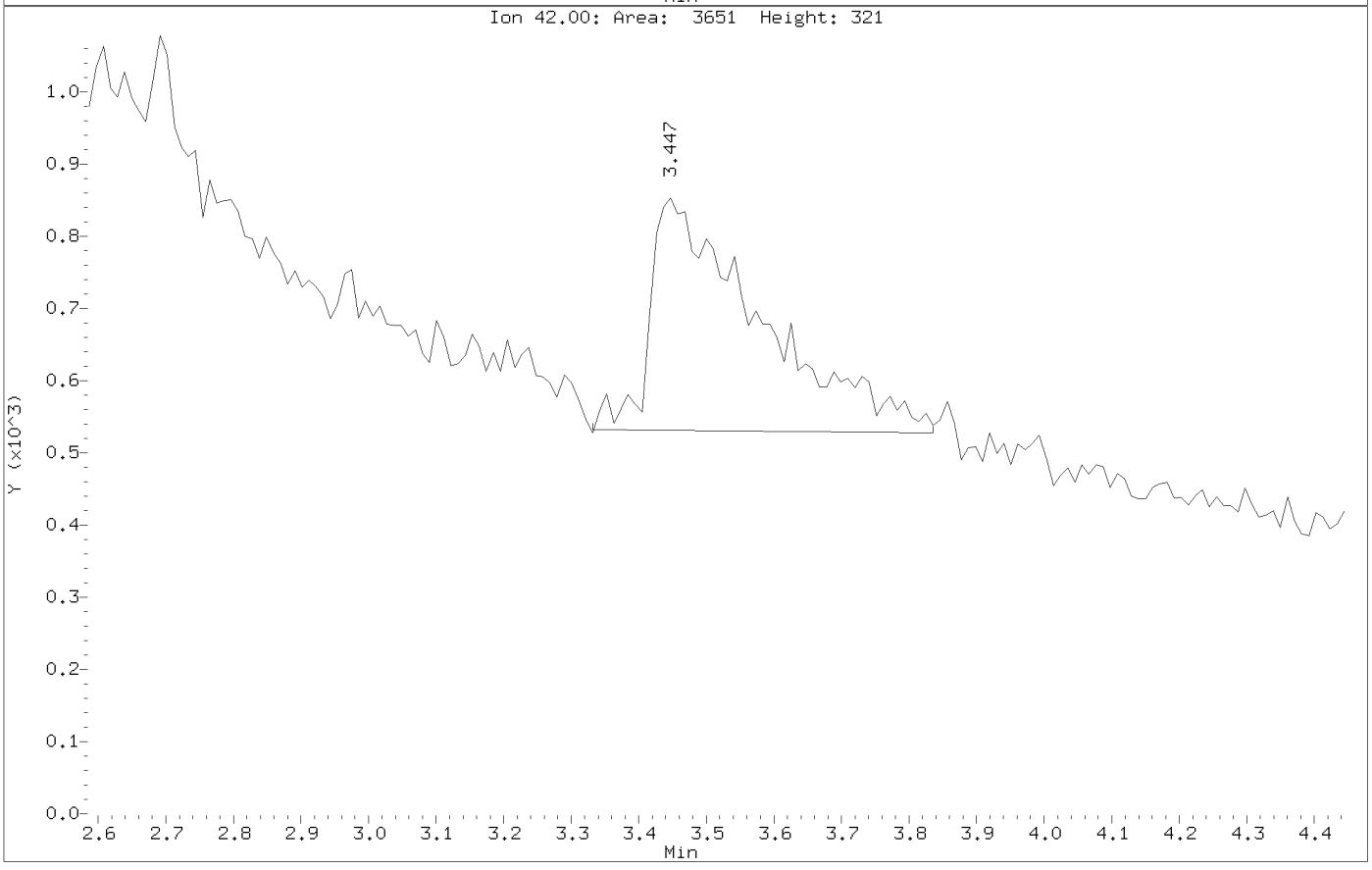
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: N-Nitrosodimethylamine
CAS Number: 62-75-9

AFTER MANUAL INTEGRATION





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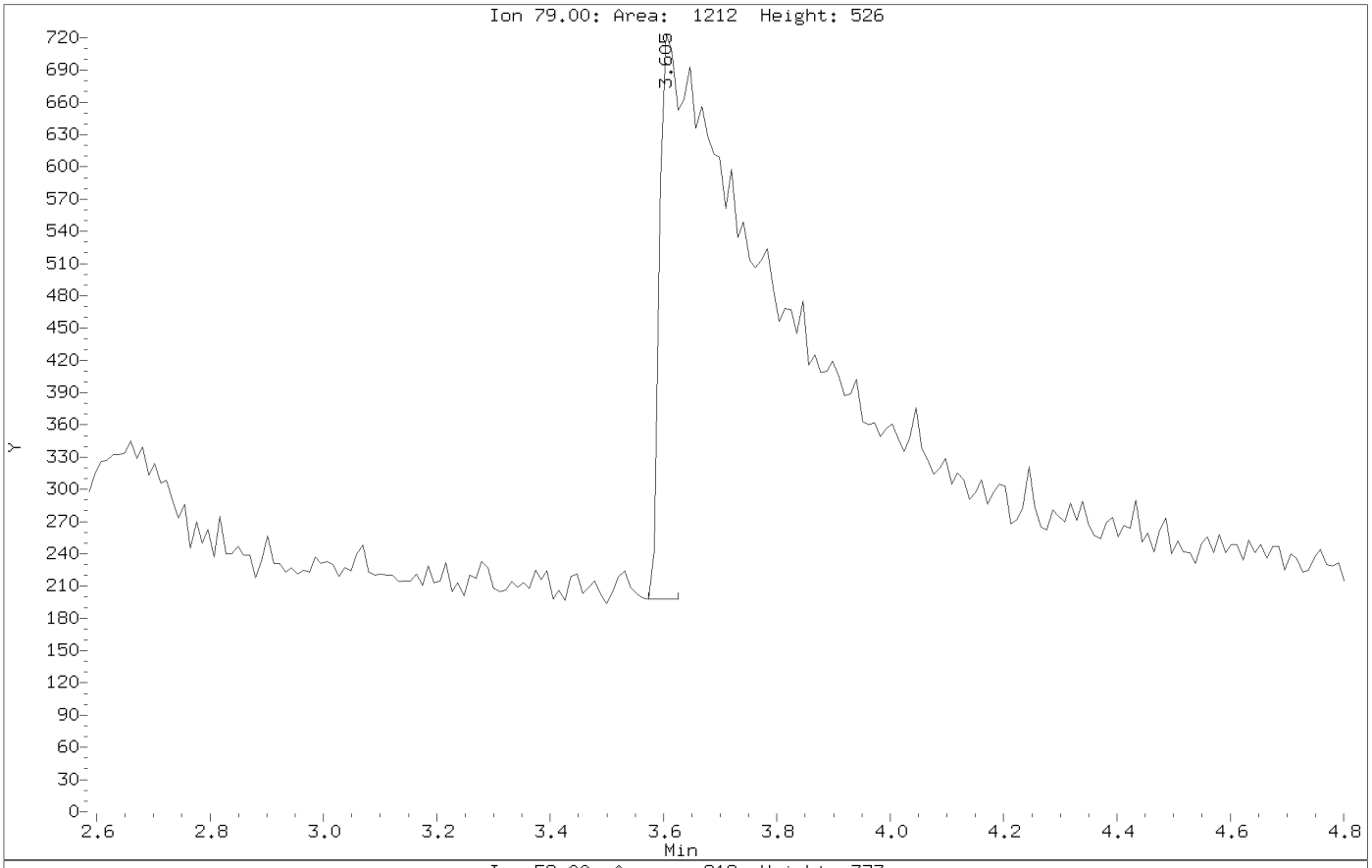
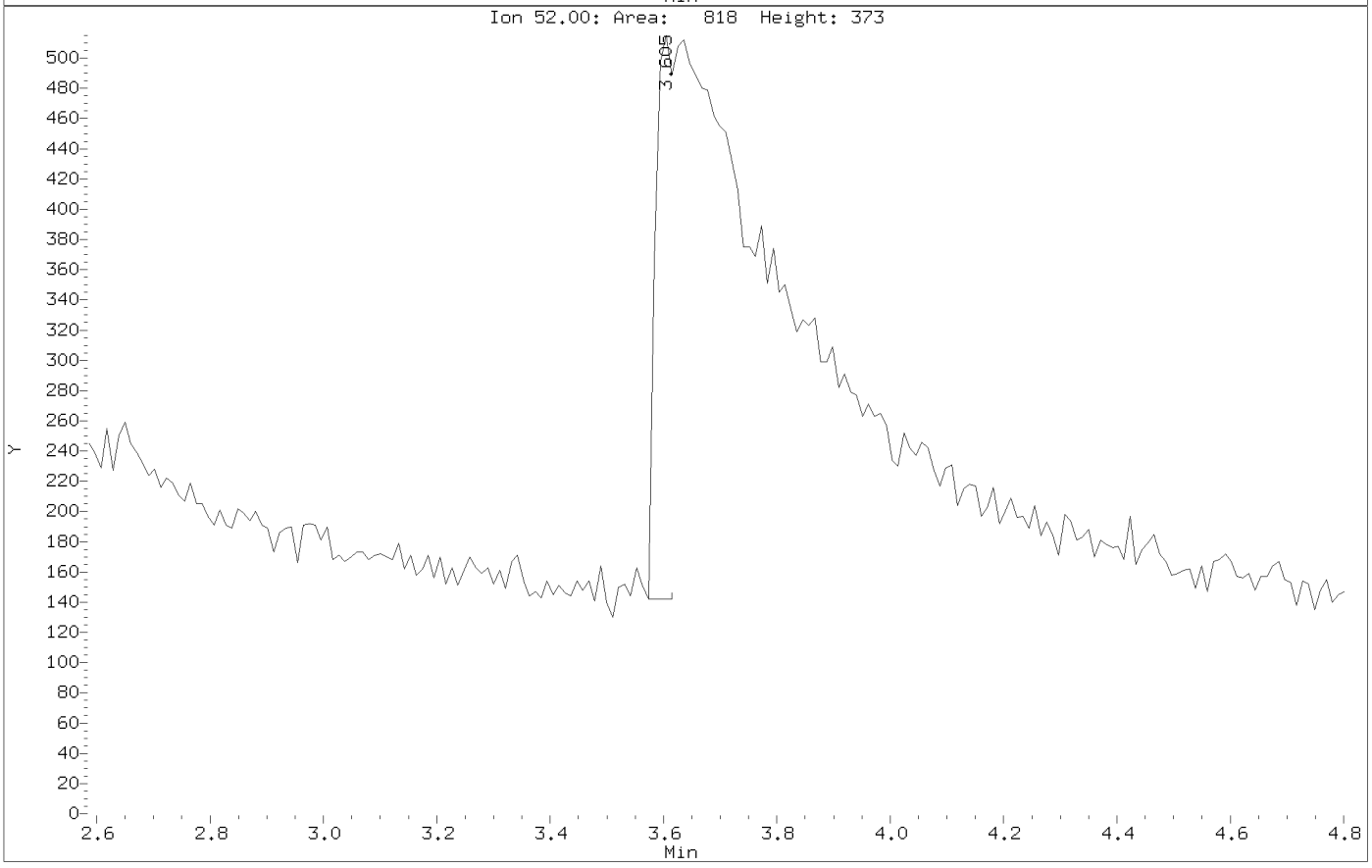
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Pyridine
CAS Number: 110-86-1

BEFORE MANUAL INTEGRATION





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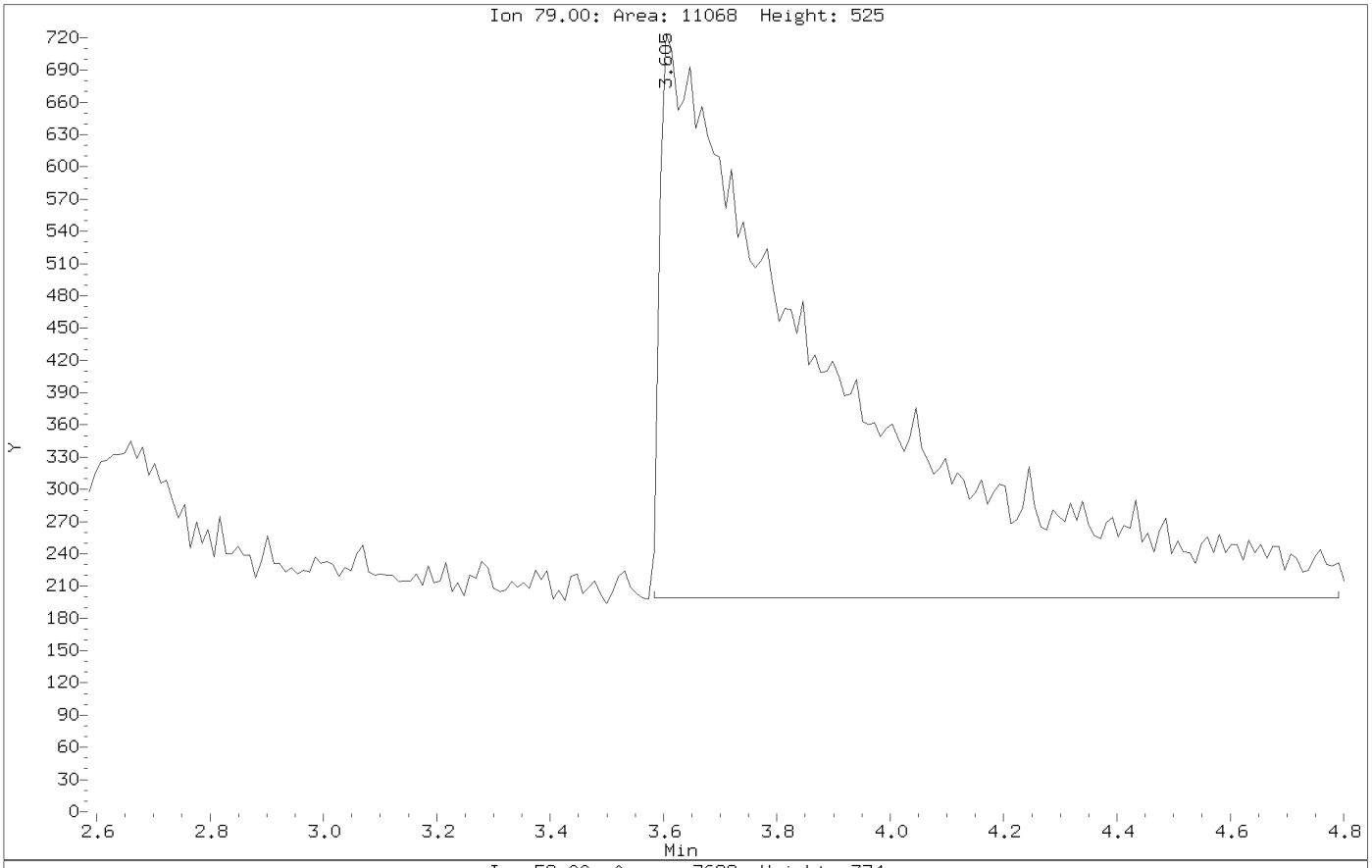
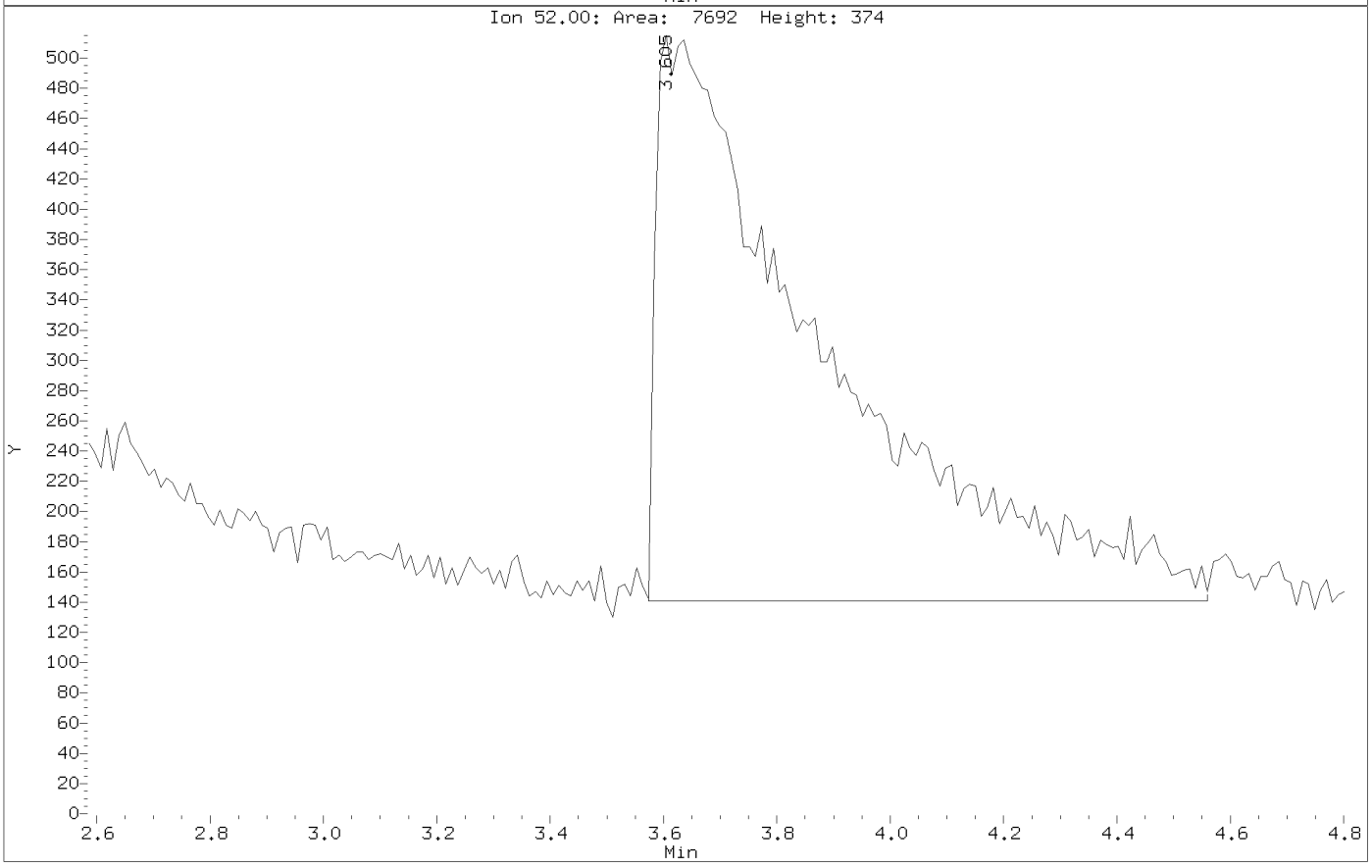
Instrument: gcms-n.i
Client Sample ID:

Compound: Pyridine
CAS Number: 110-86-1

AFTER MANUAL INTEGRATION





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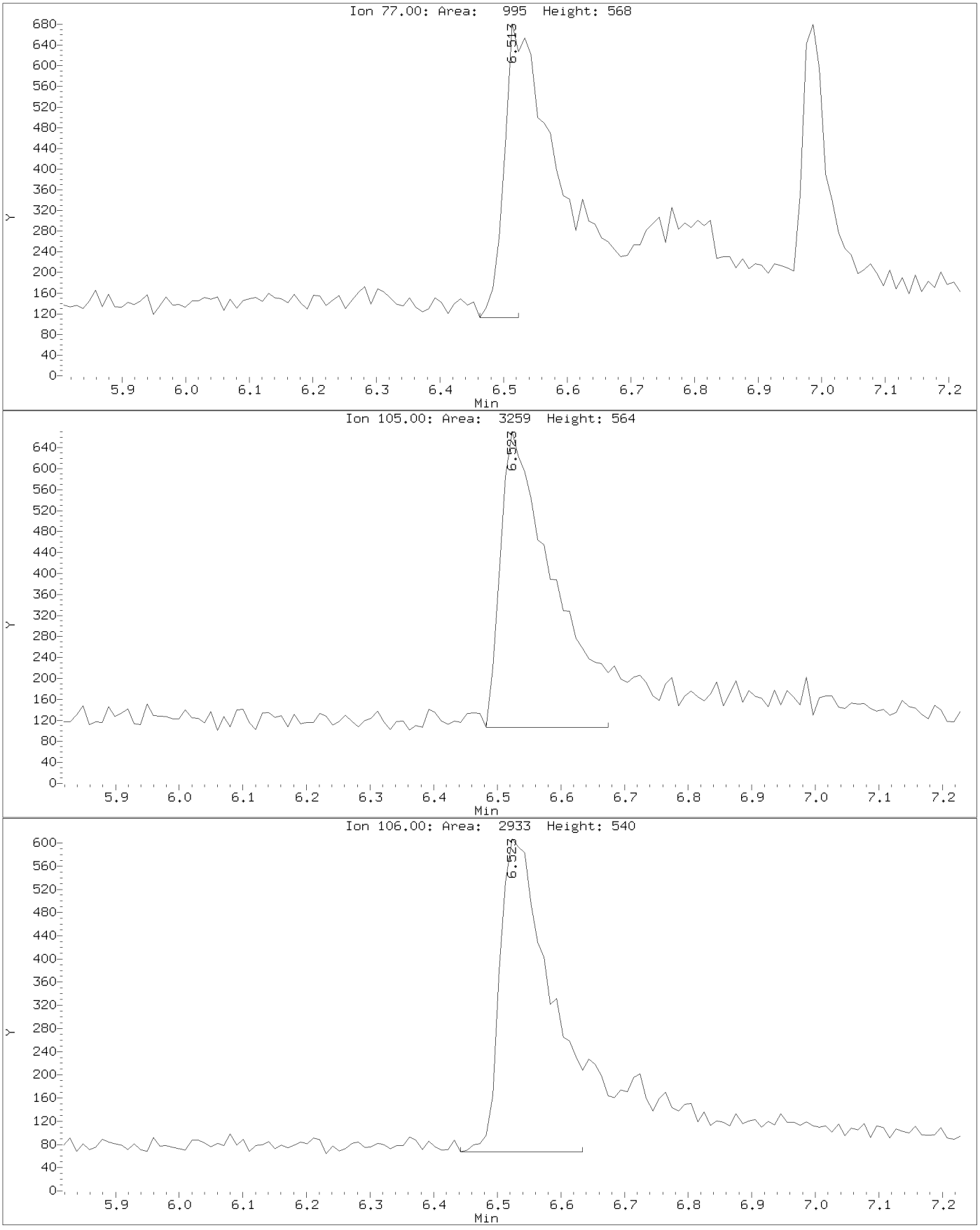
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzaldehyde
CAS Number: 100-52-7

BEFORE MANUAL INTEGRATION



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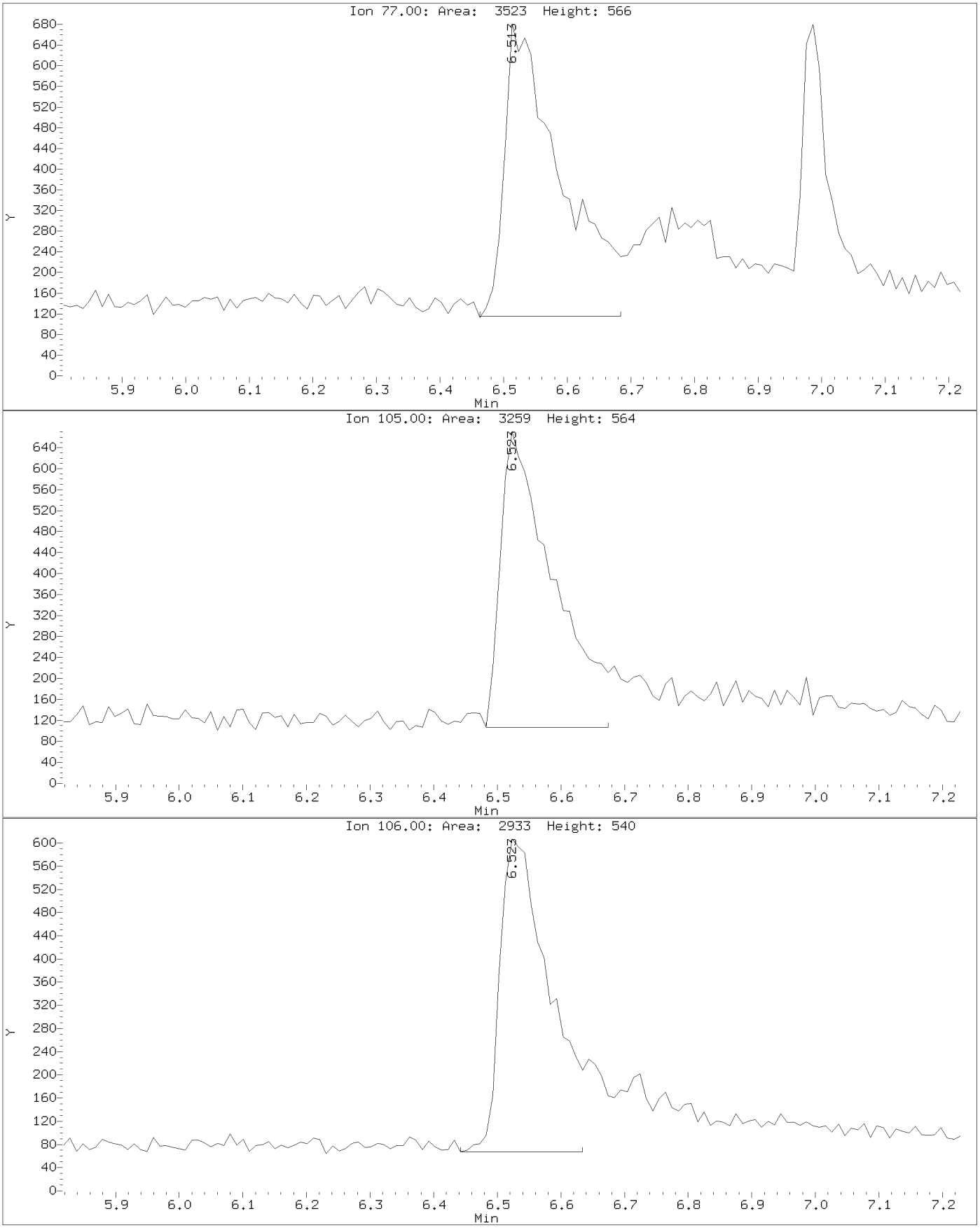
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzaldehyde
CAS Number: 100-52-7

AFTER MANUAL INTEGRATION



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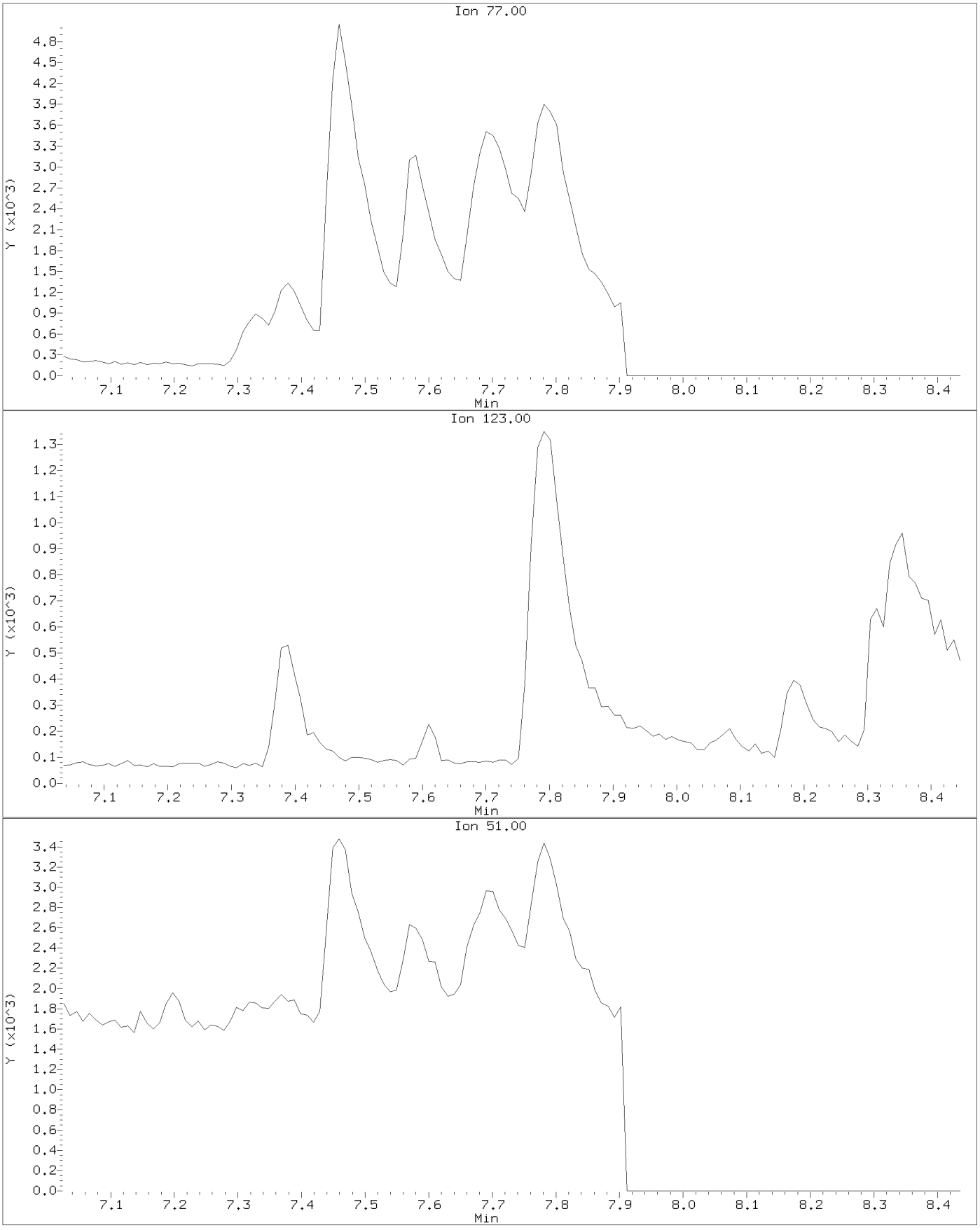
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Nitrobenzene
CAS Number: 98-95-3

BEFORE MANUAL INTEGRATION



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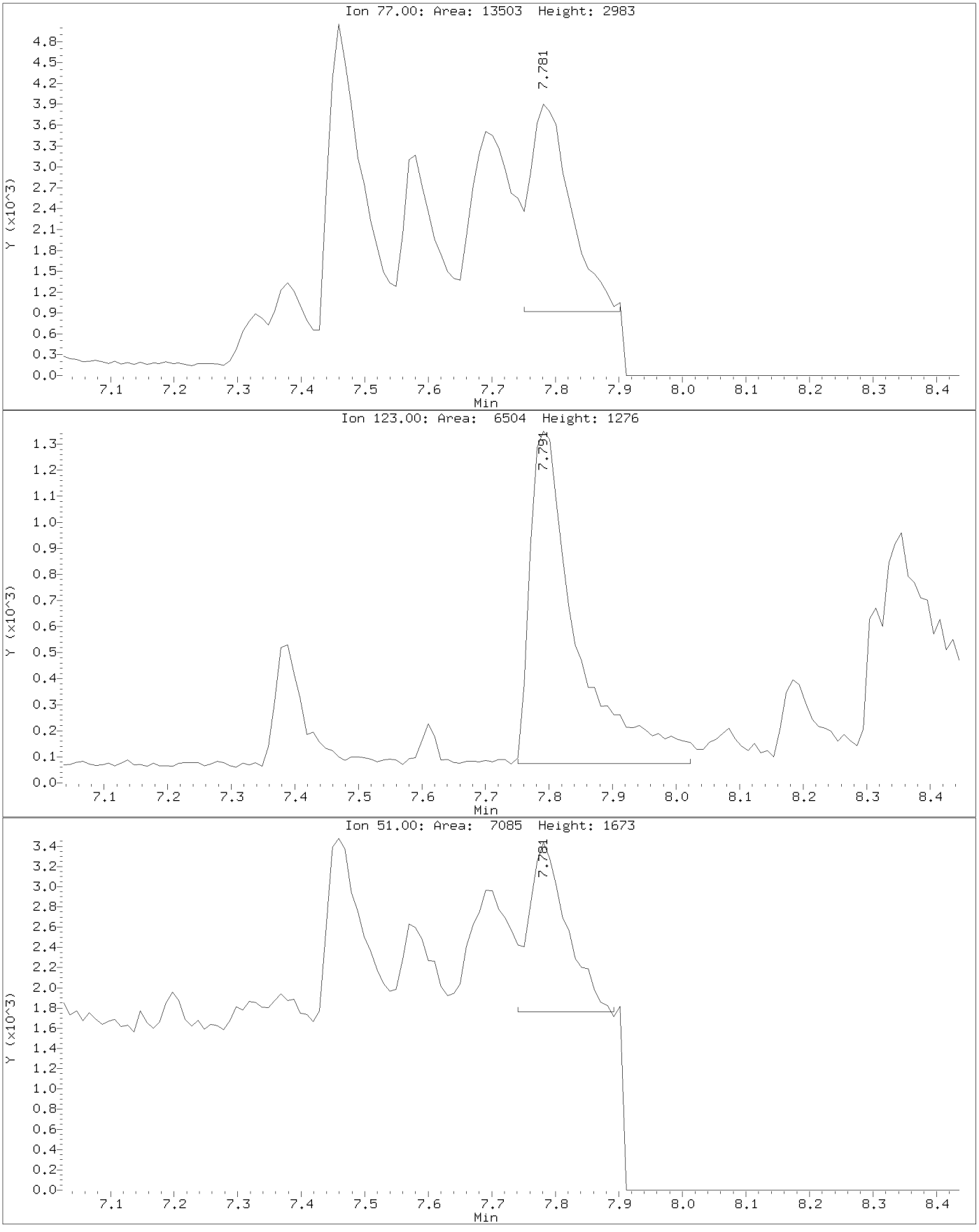
Instrument: gcms-n.i
Client Sample ID:

Compound: Nitrobenzene
CAS Number: 98-95-3

AFTER MANUAL INTEGRATION



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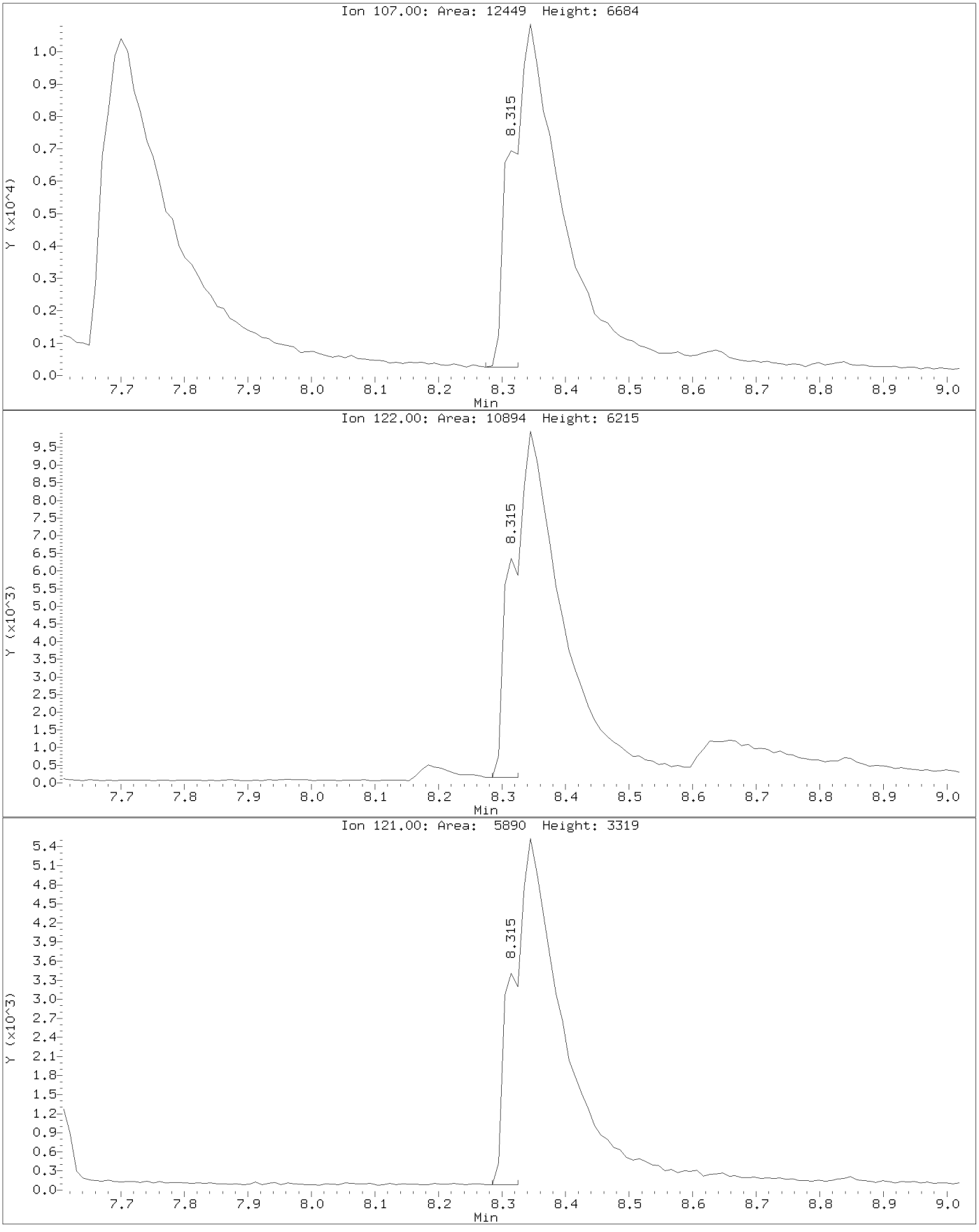
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dimethylphenol
CAS Number: 105-67-9

BEFORE MANUAL INTEGRATION



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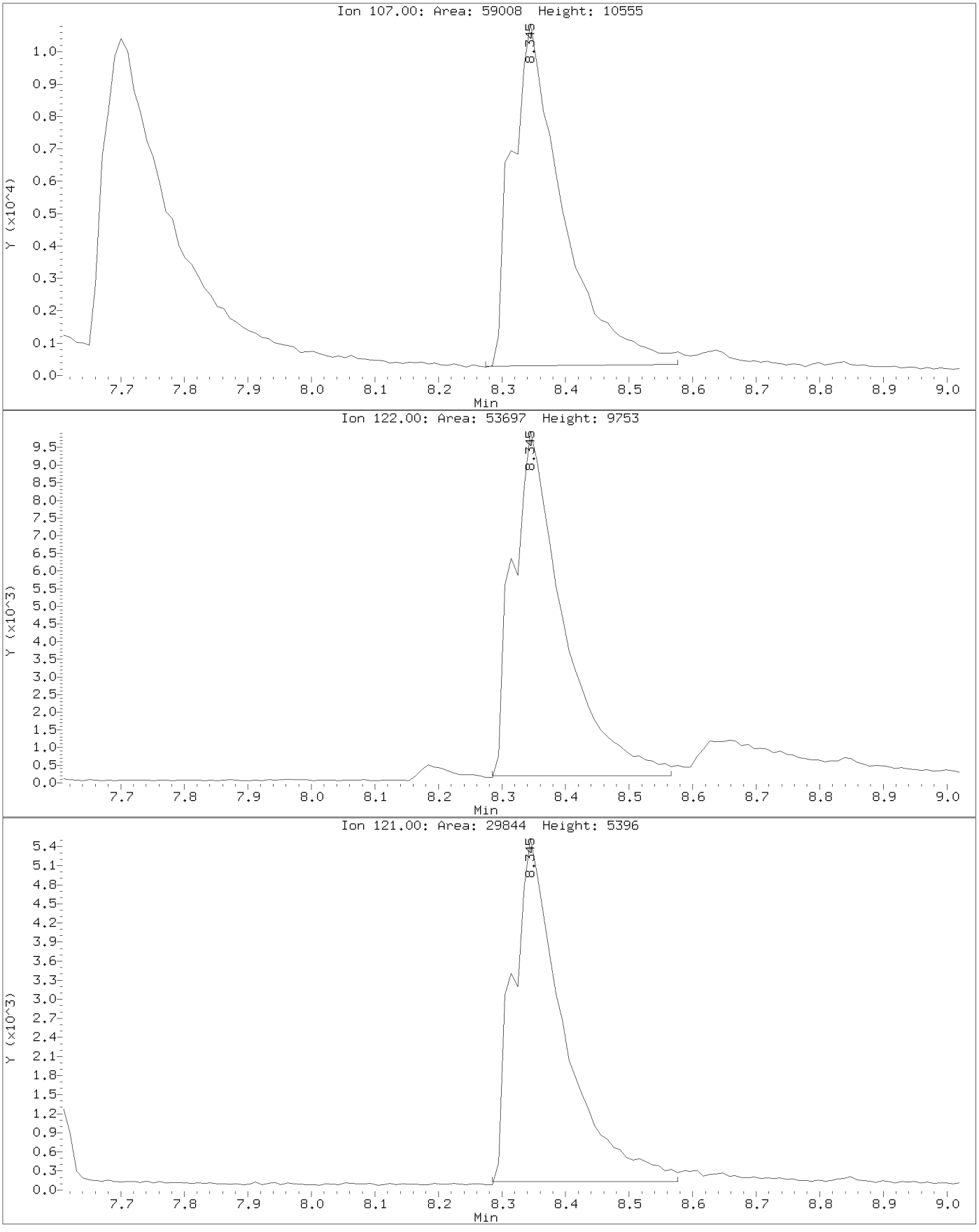
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dimethylphenol
CAS Number: 105-67-9

AFTER MANUAL INTEGRATION



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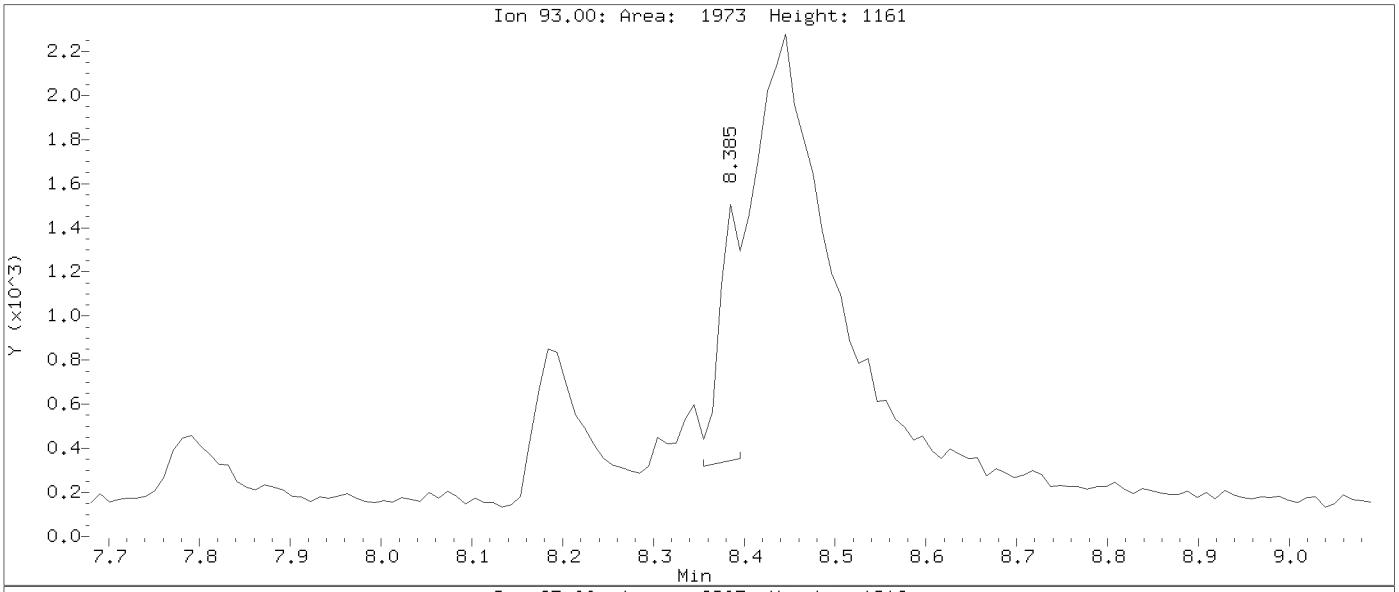
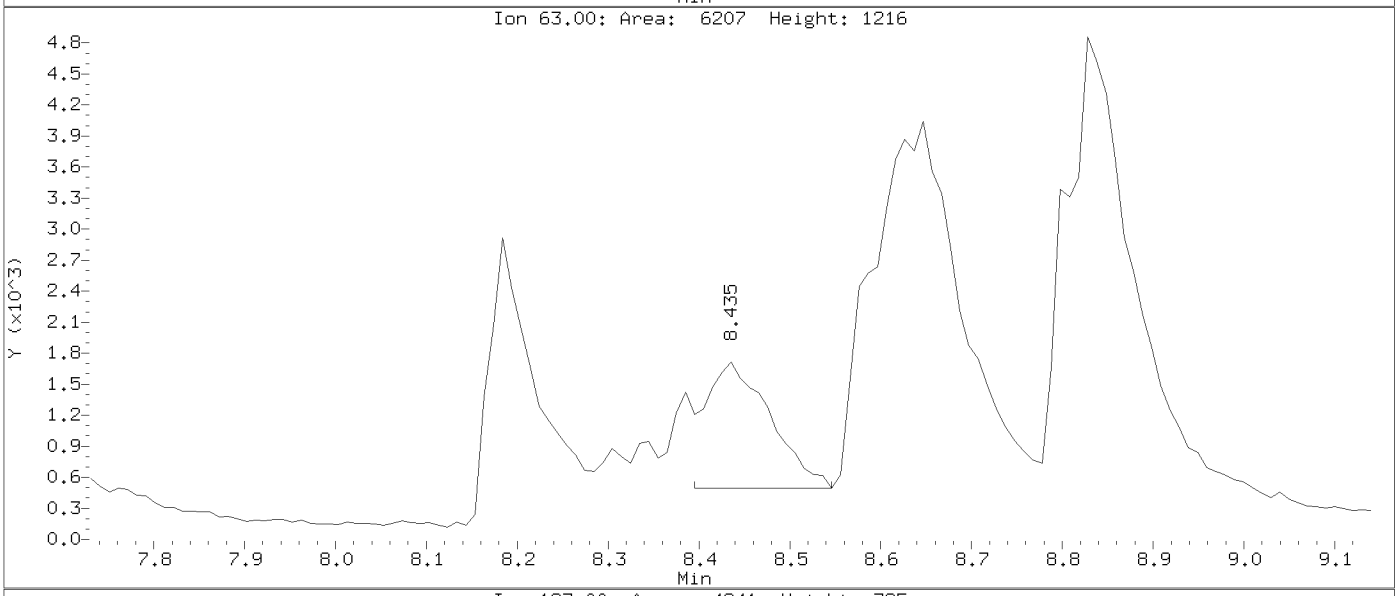
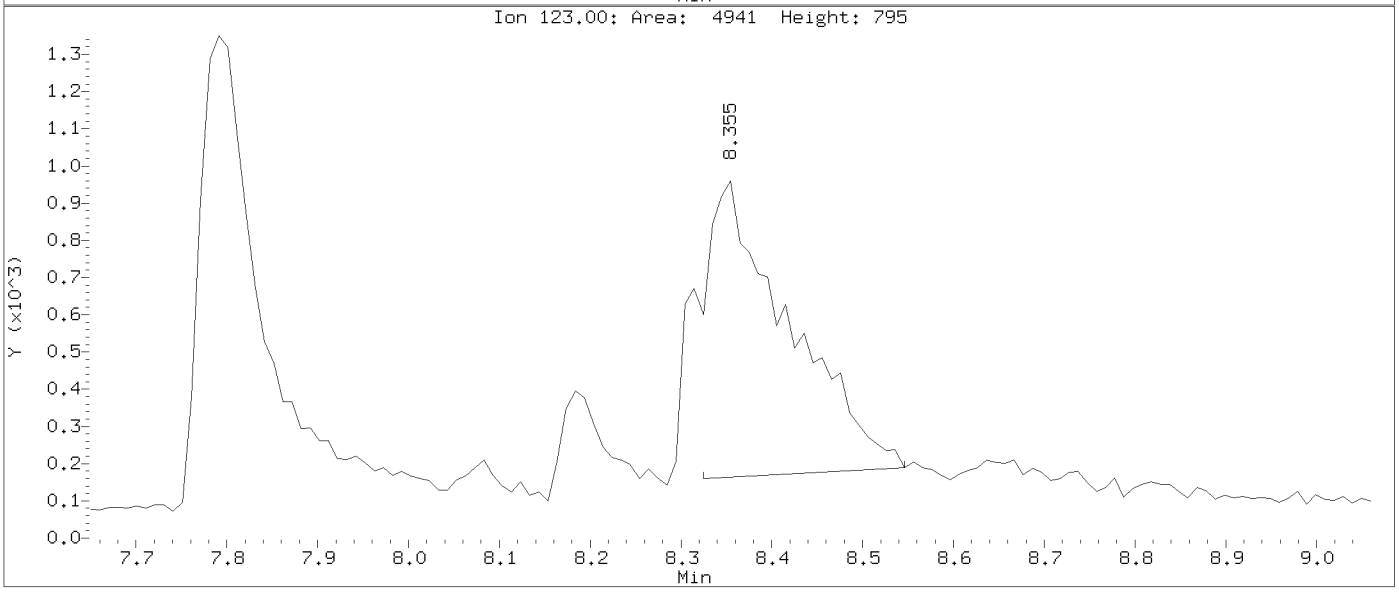
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: bis(2-Chloroethoxy)methane
CAS Number: 111-91-1

BEFORE MANUAL INTEGRATION







Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7969.D
Injection Date: 16-MAR-2018 12:30
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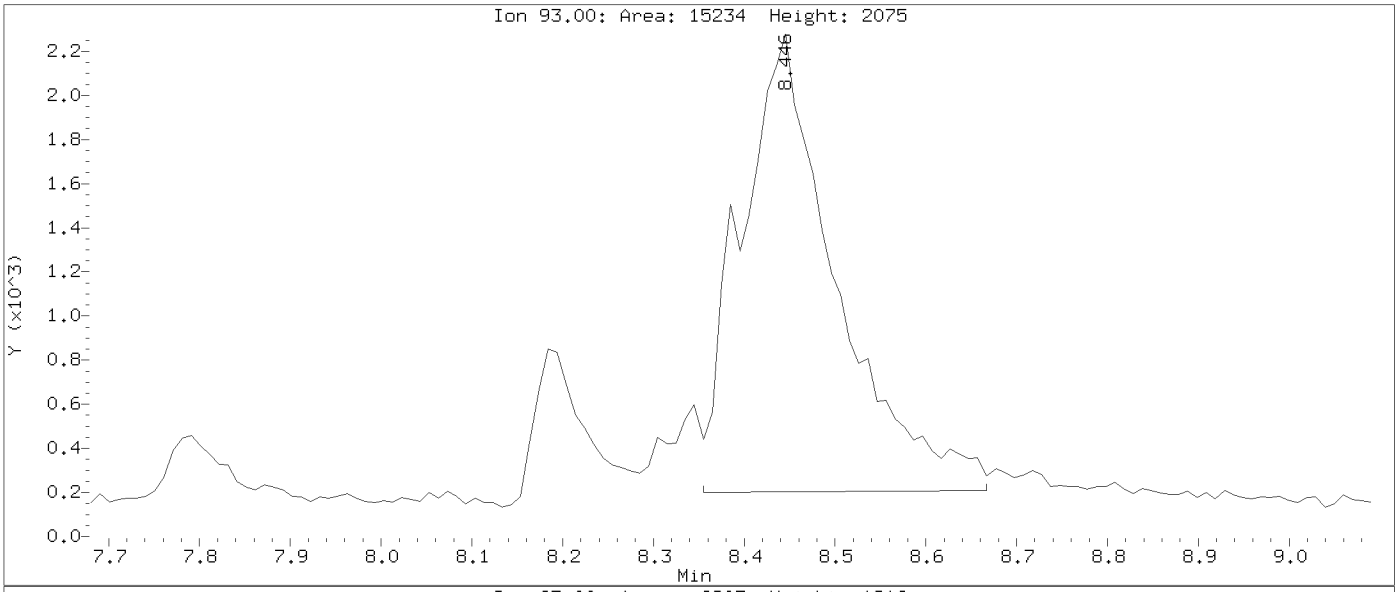
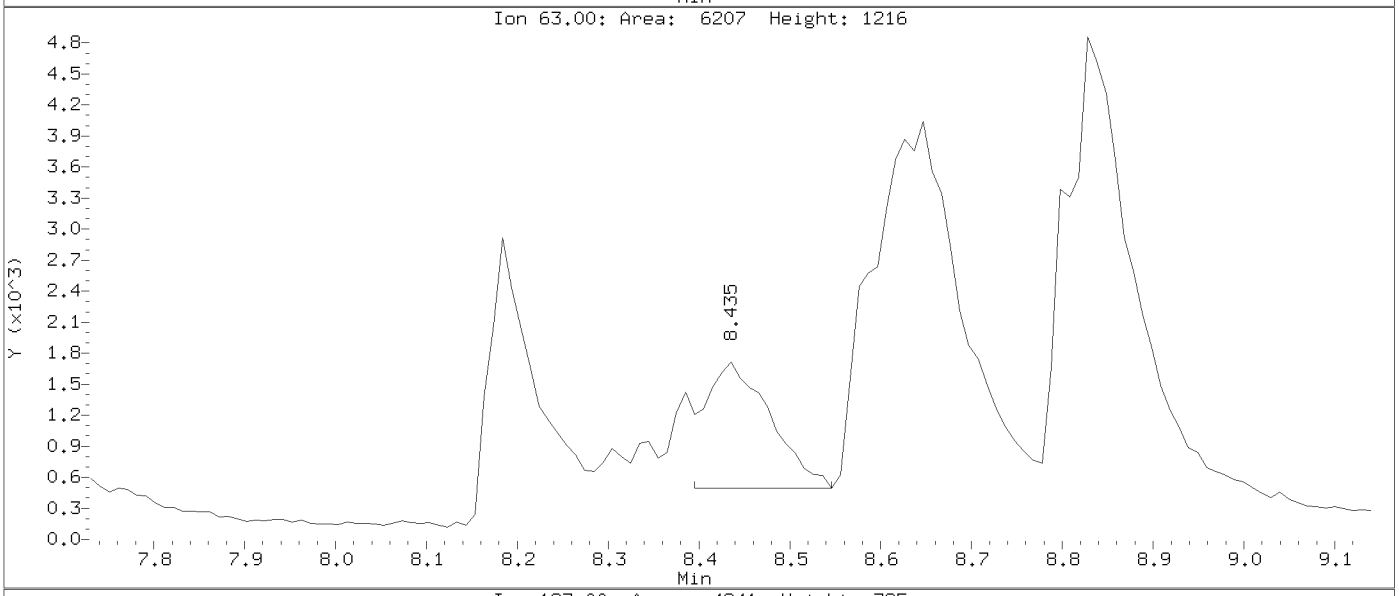
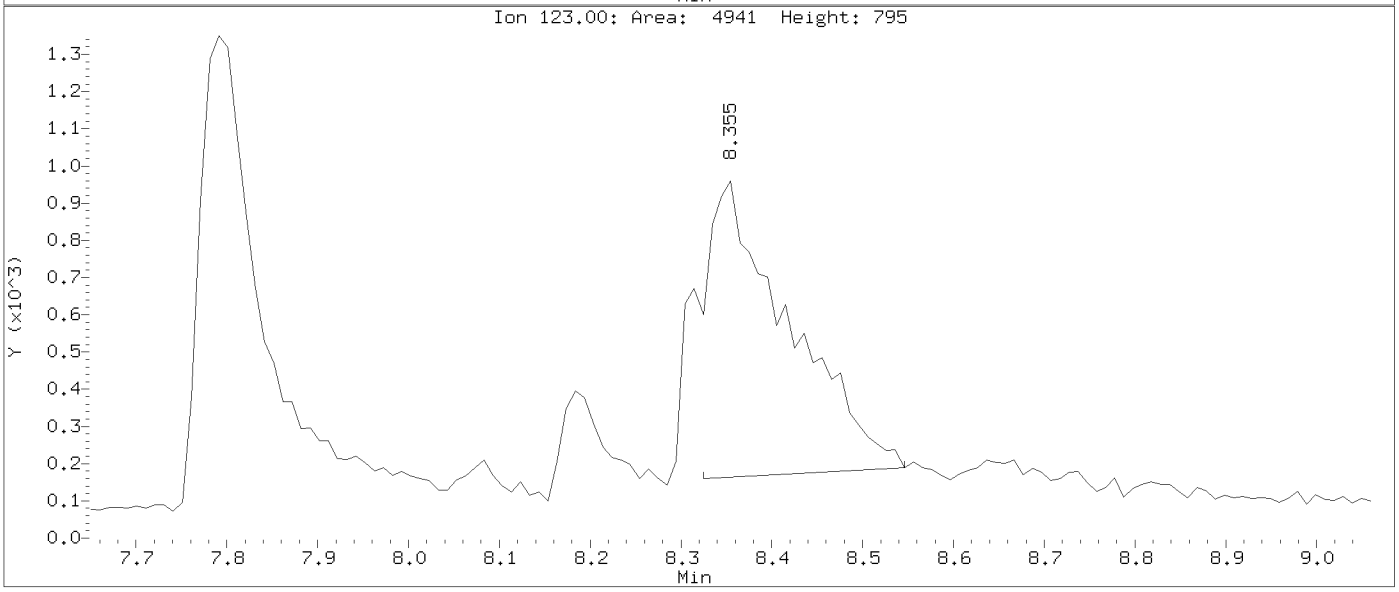
Client Sample ID:

Compound: bis(2-Chloroethoxy)methane
CAS Number: 111-91-1

AFTER MANUAL INTEGRATION







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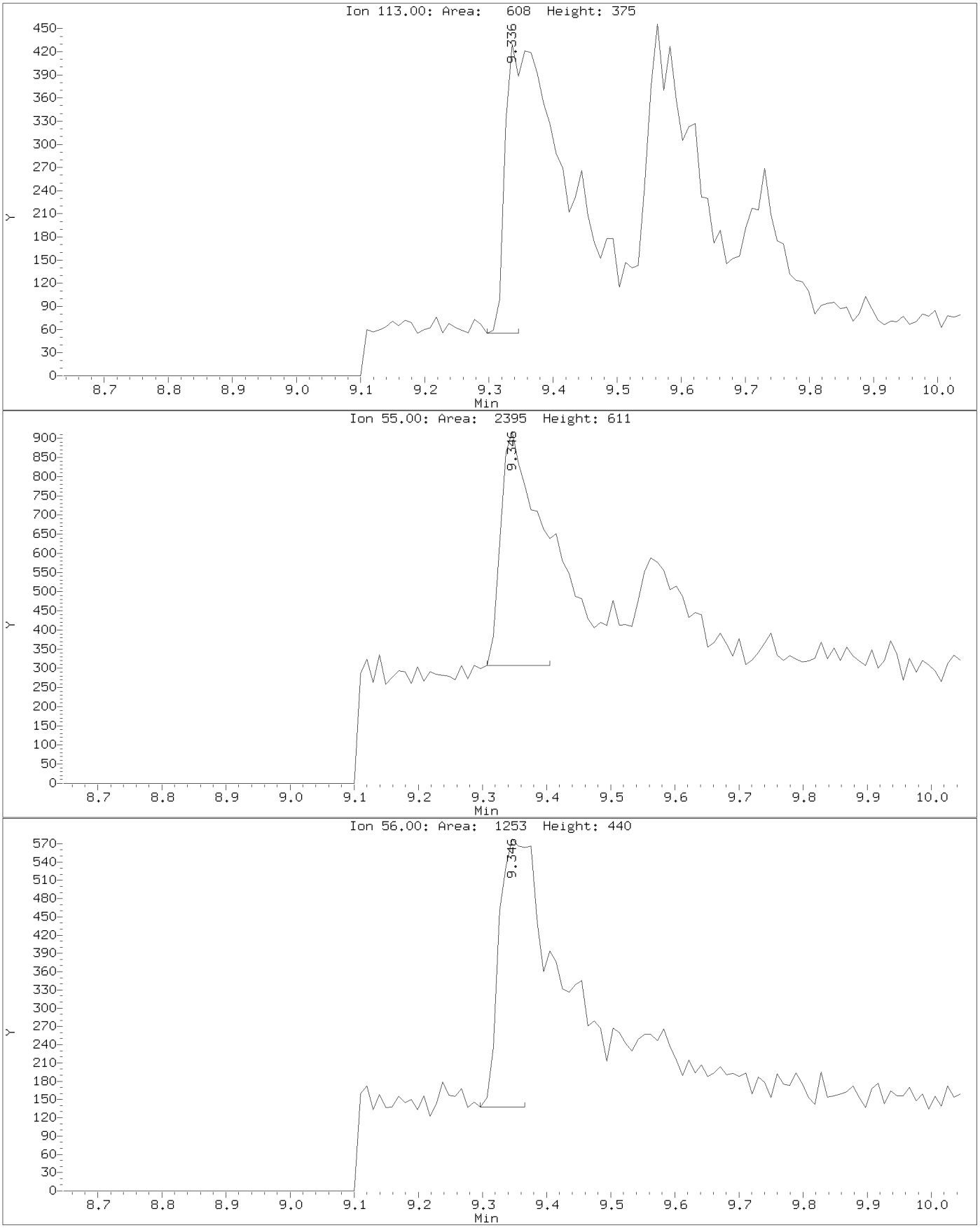
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

BEFORE MANUAL INTEGRATION



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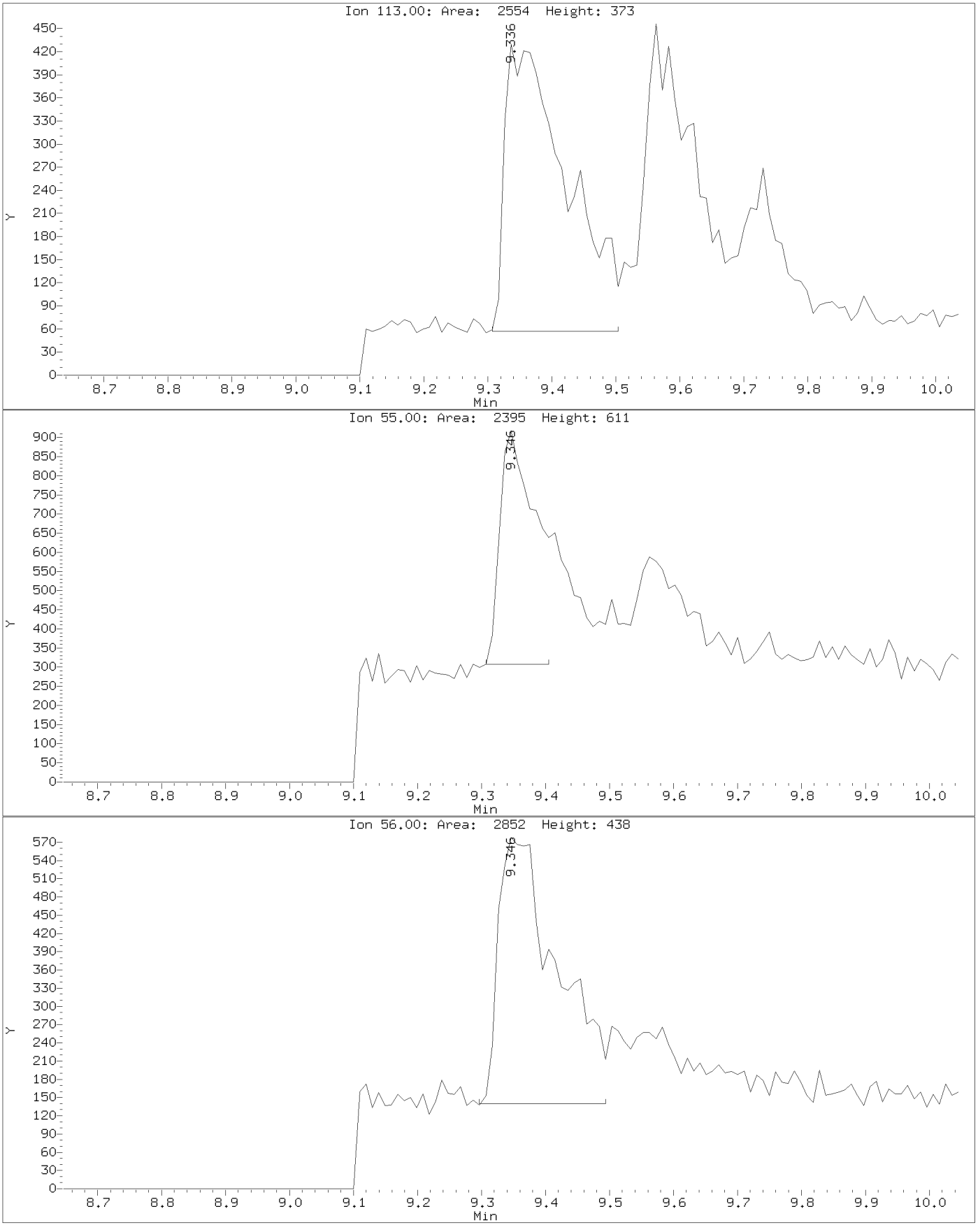
Instrument: gcms-n.i
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

AFTER MANUAL INTEGRATION



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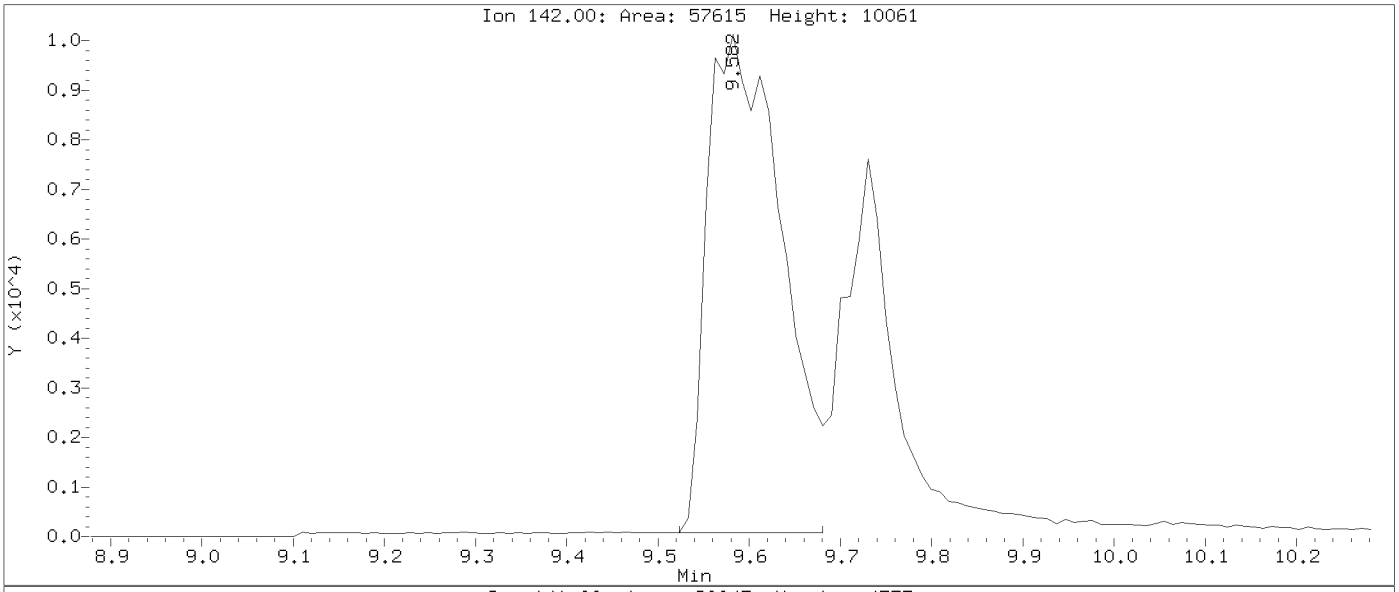
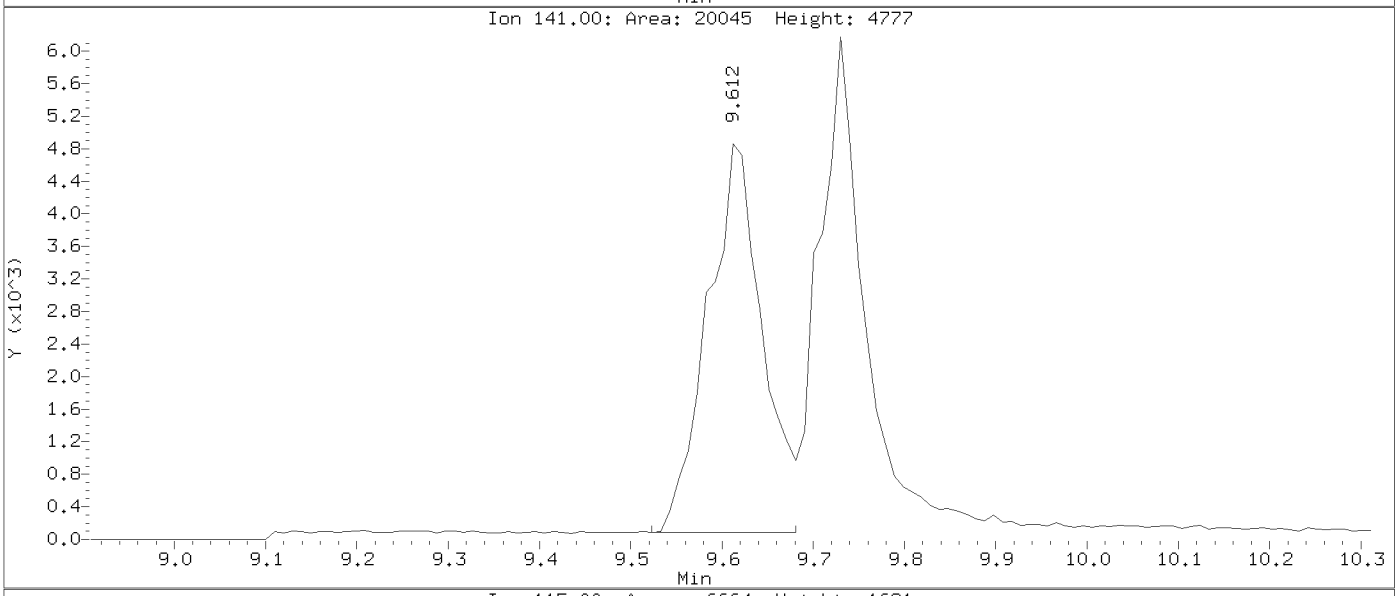
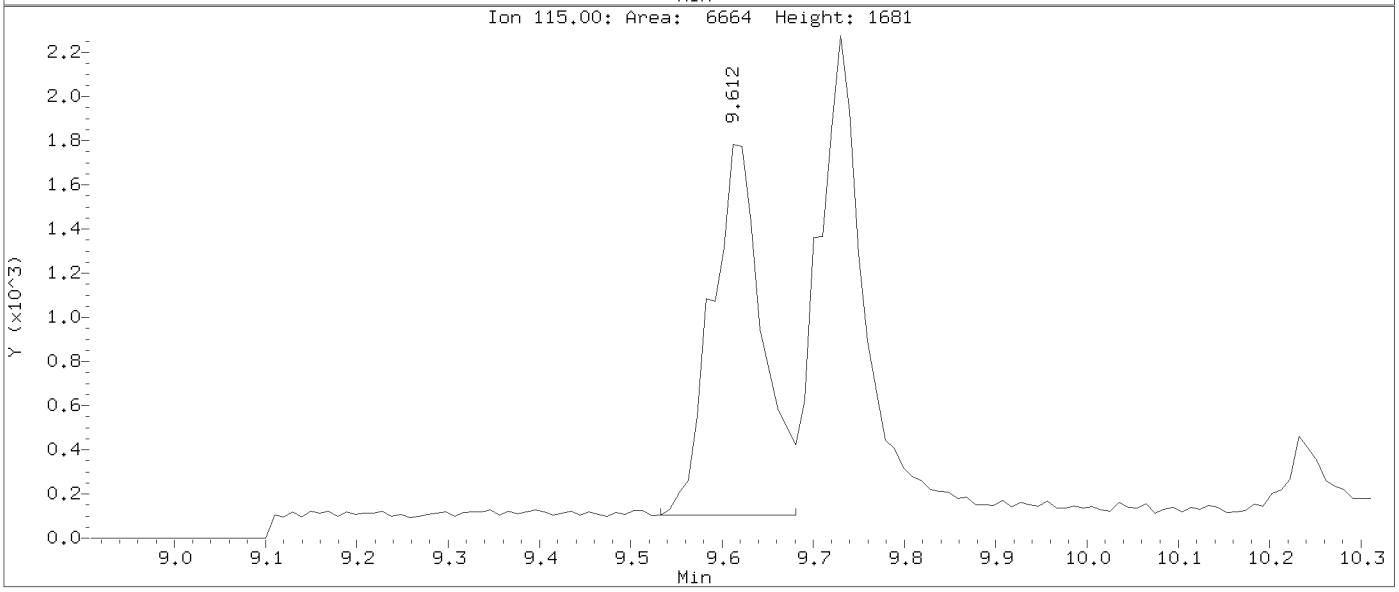
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: 2-Methylnaphthalene
CAS Number: 91-57-6

BEFORE MANUAL INTEGRATION







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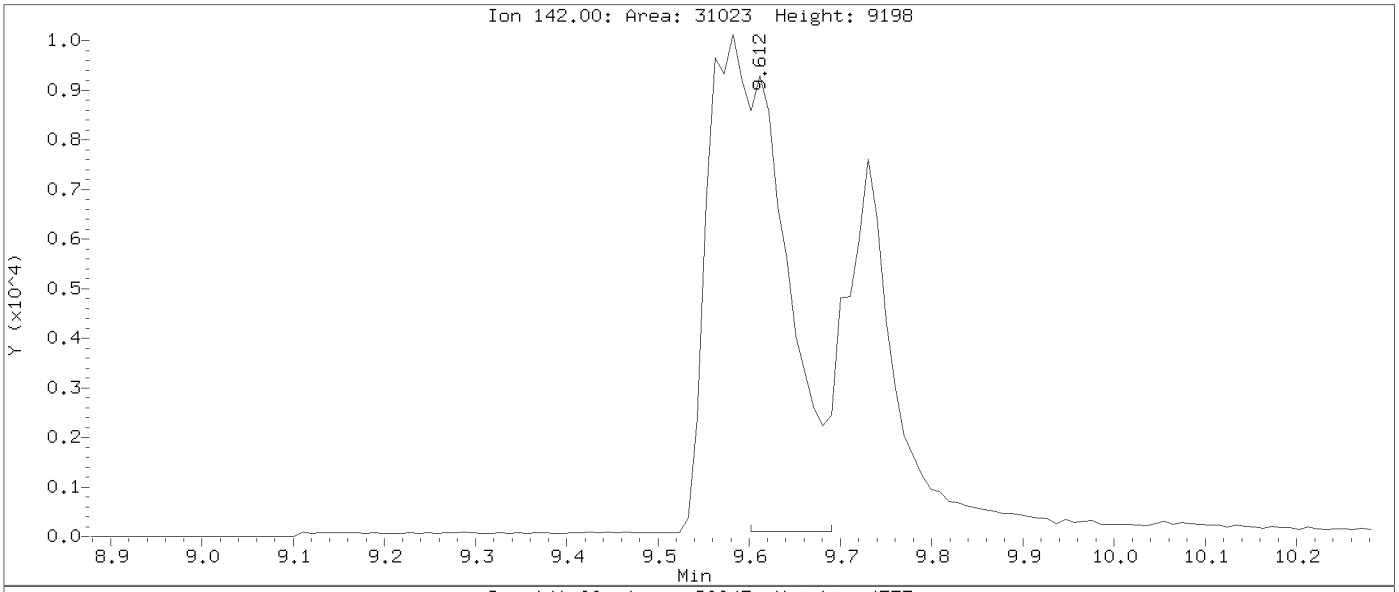
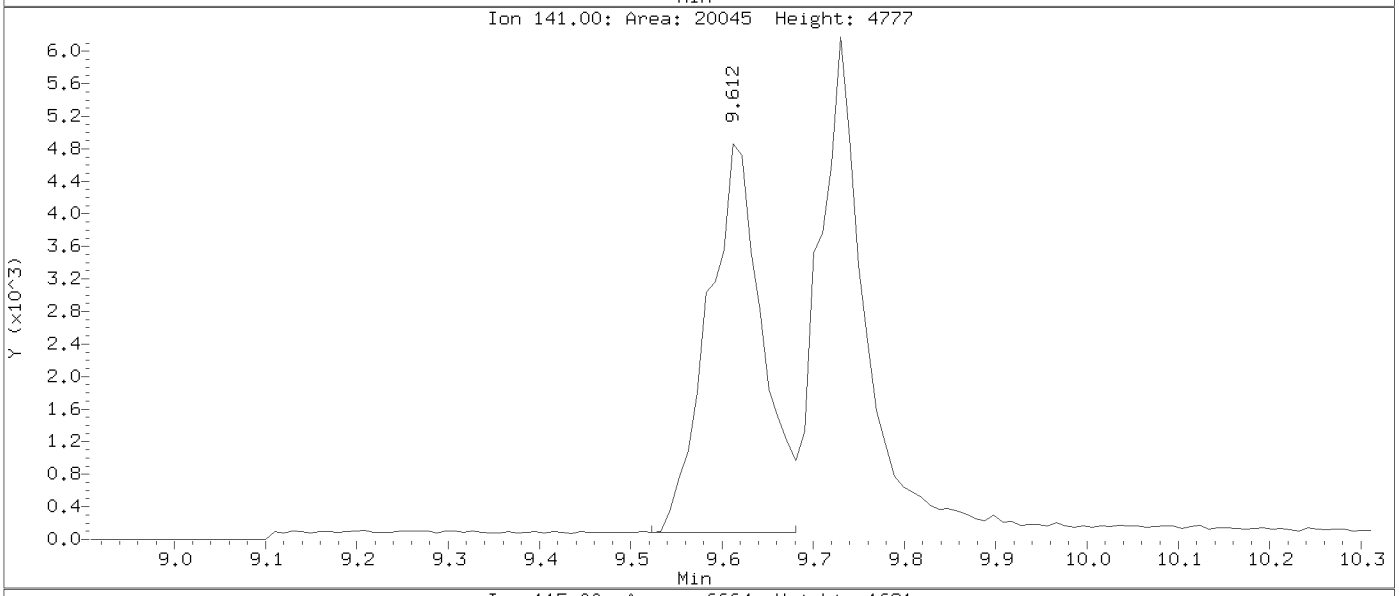
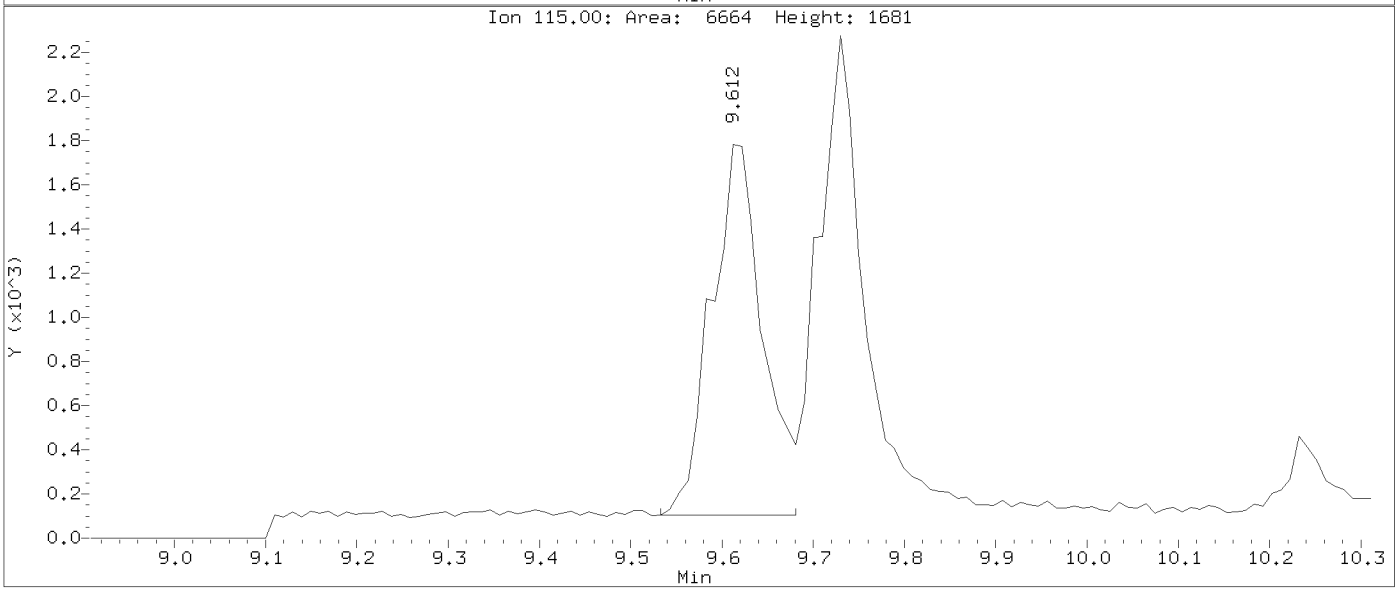
Client Sample ID:

Compound: 2-Methylnaphthalene
CAS Number: 91-57-6

AFTER MANUAL INTEGRATION







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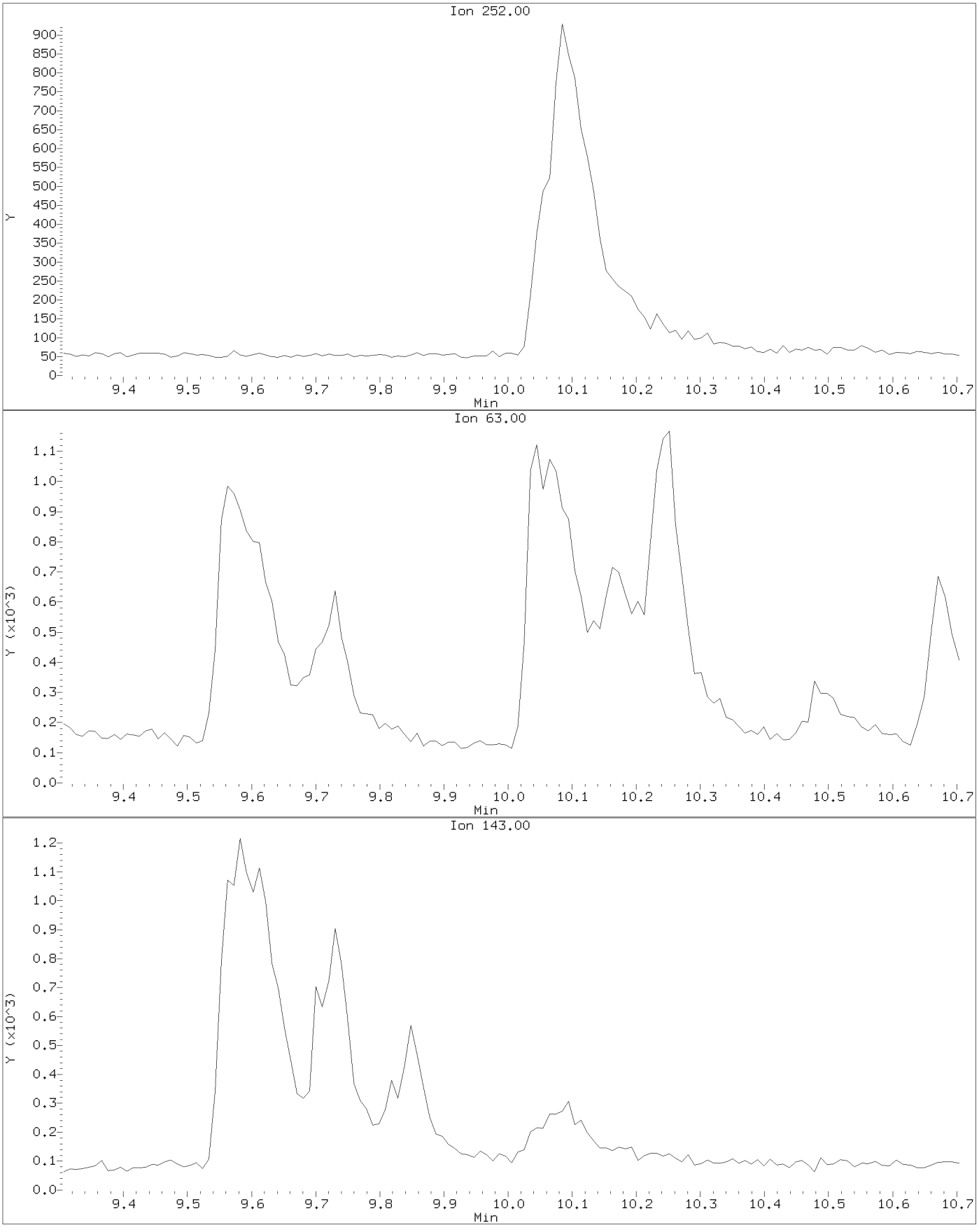
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: 2,4-Dibromophenol
CAS Number: 367-12-4

BEFORE MANUAL INTEGRATION



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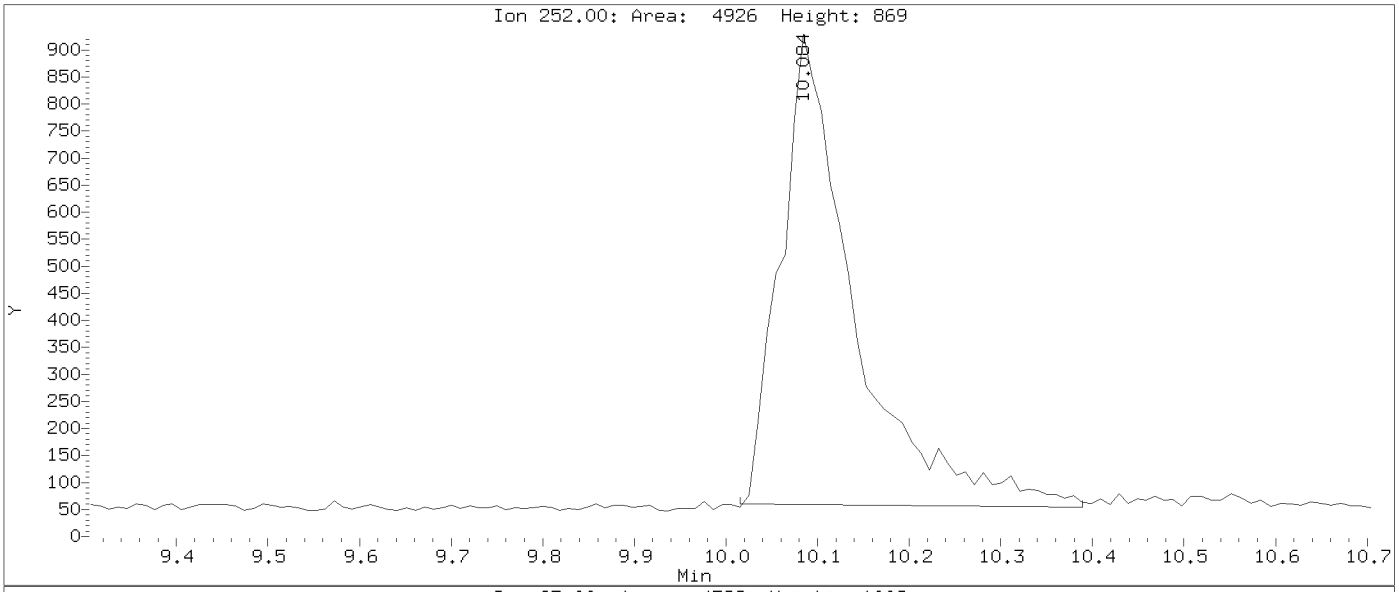
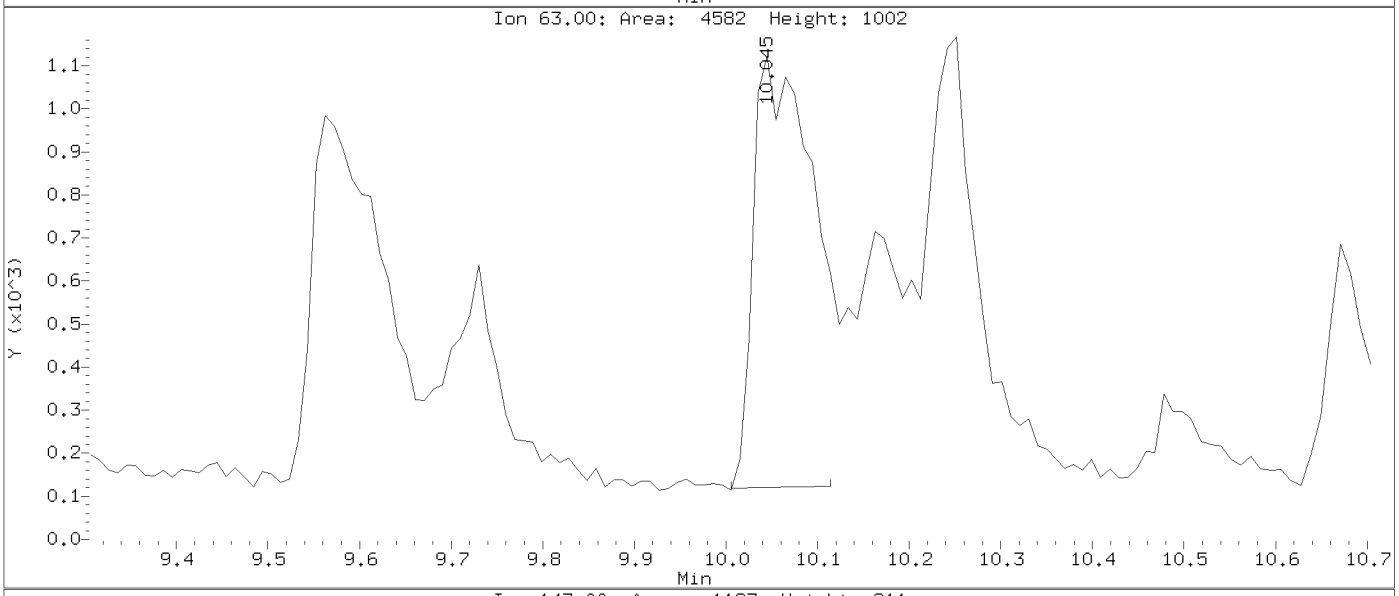
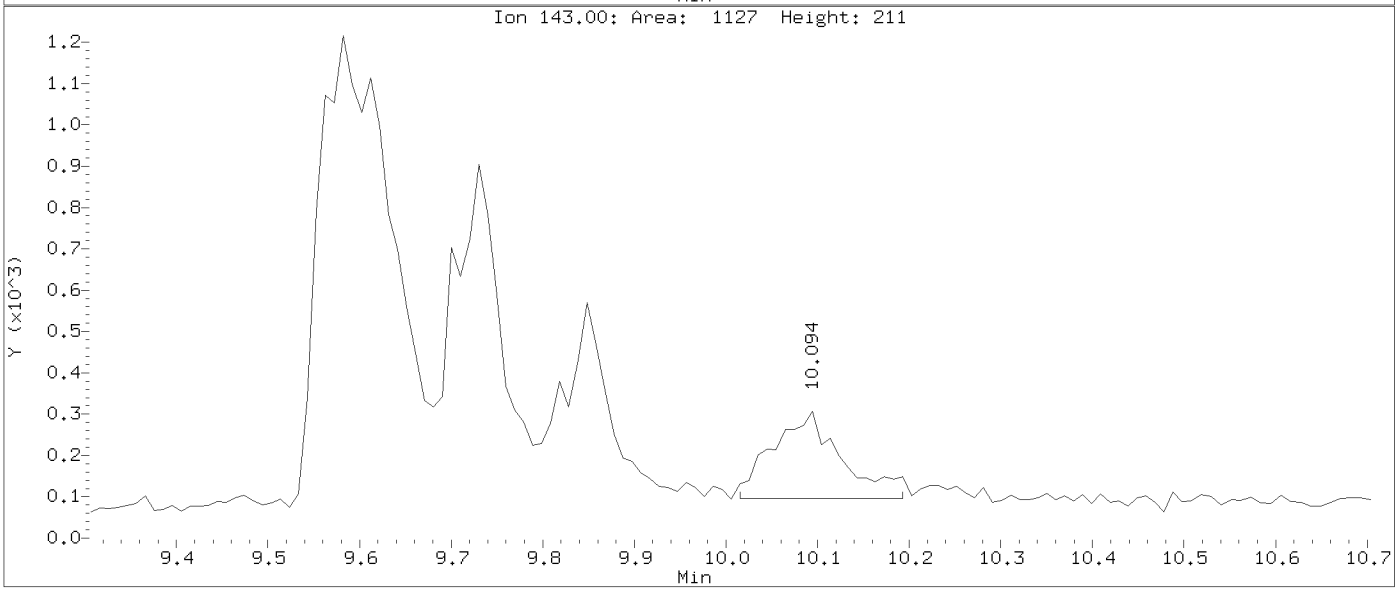
Client Sample ID:

Compound: 2,4-Dibromophenol
CAS Number: 367-12-4

AFTER MANUAL INTEGRATION







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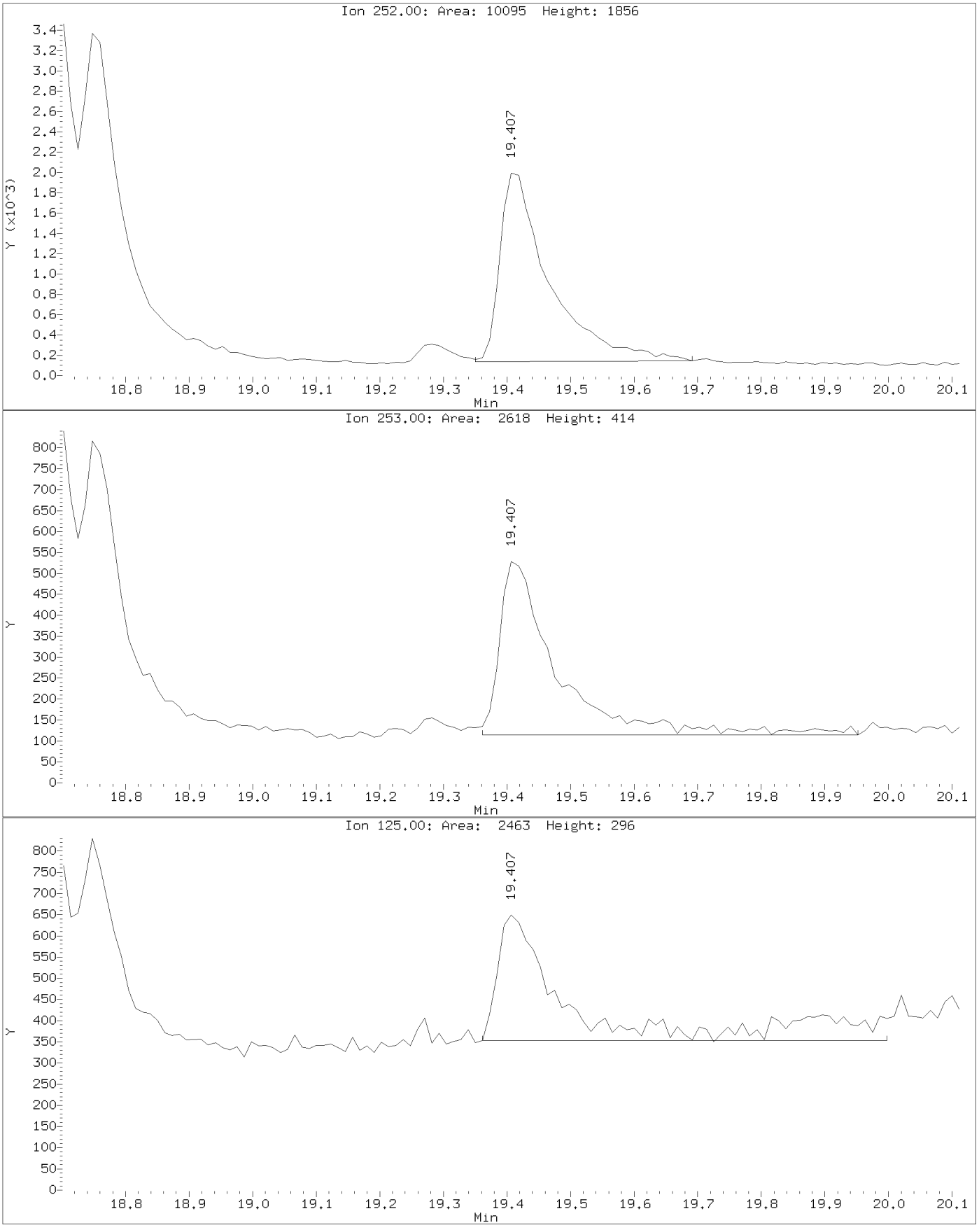
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

BEFORE MANUAL INTEGRATION



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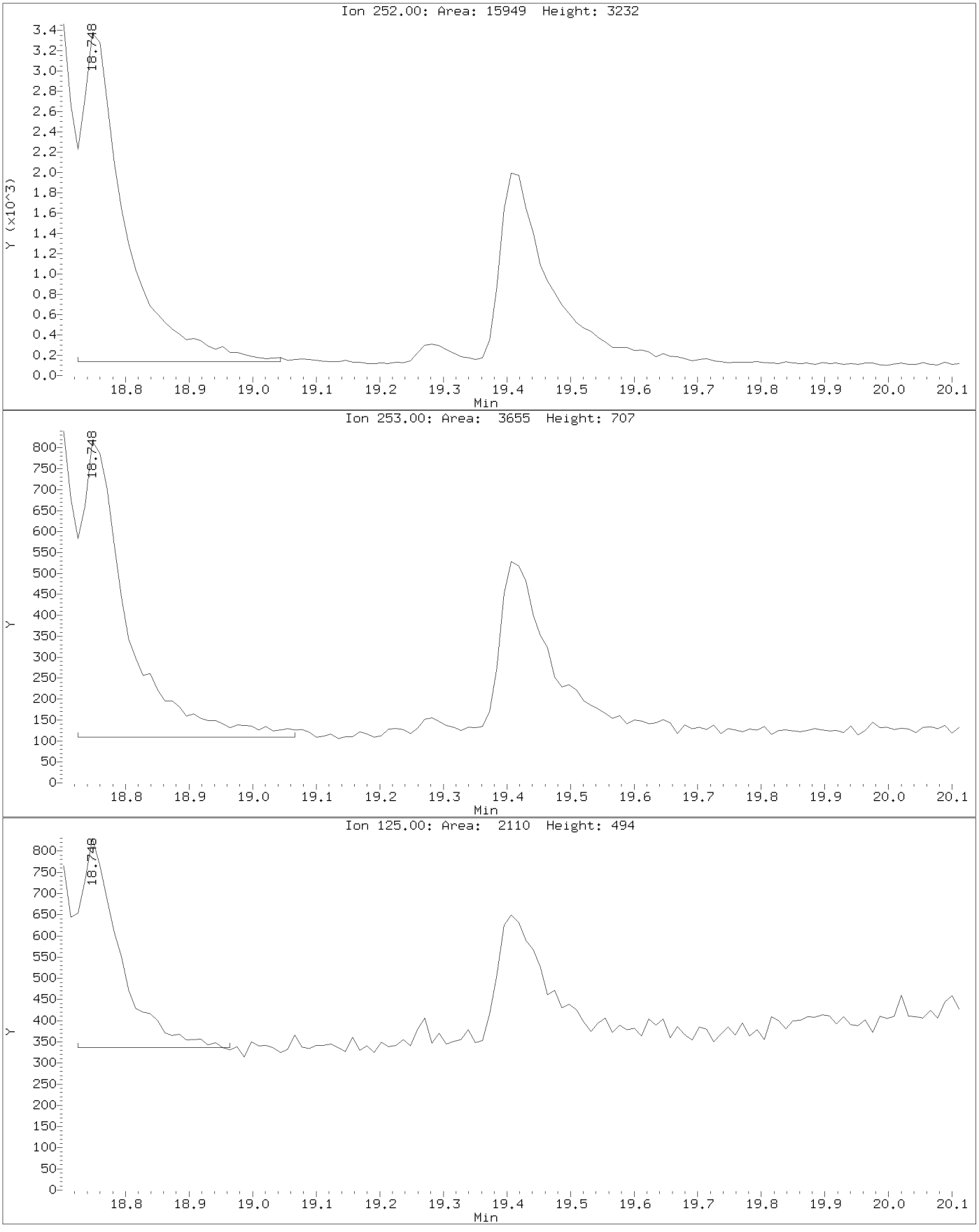
Injection Date: 16-MAR-2018 12:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

AFTER MANUAL INTEGRATION



BEFORE MANUAL INTEGRATION

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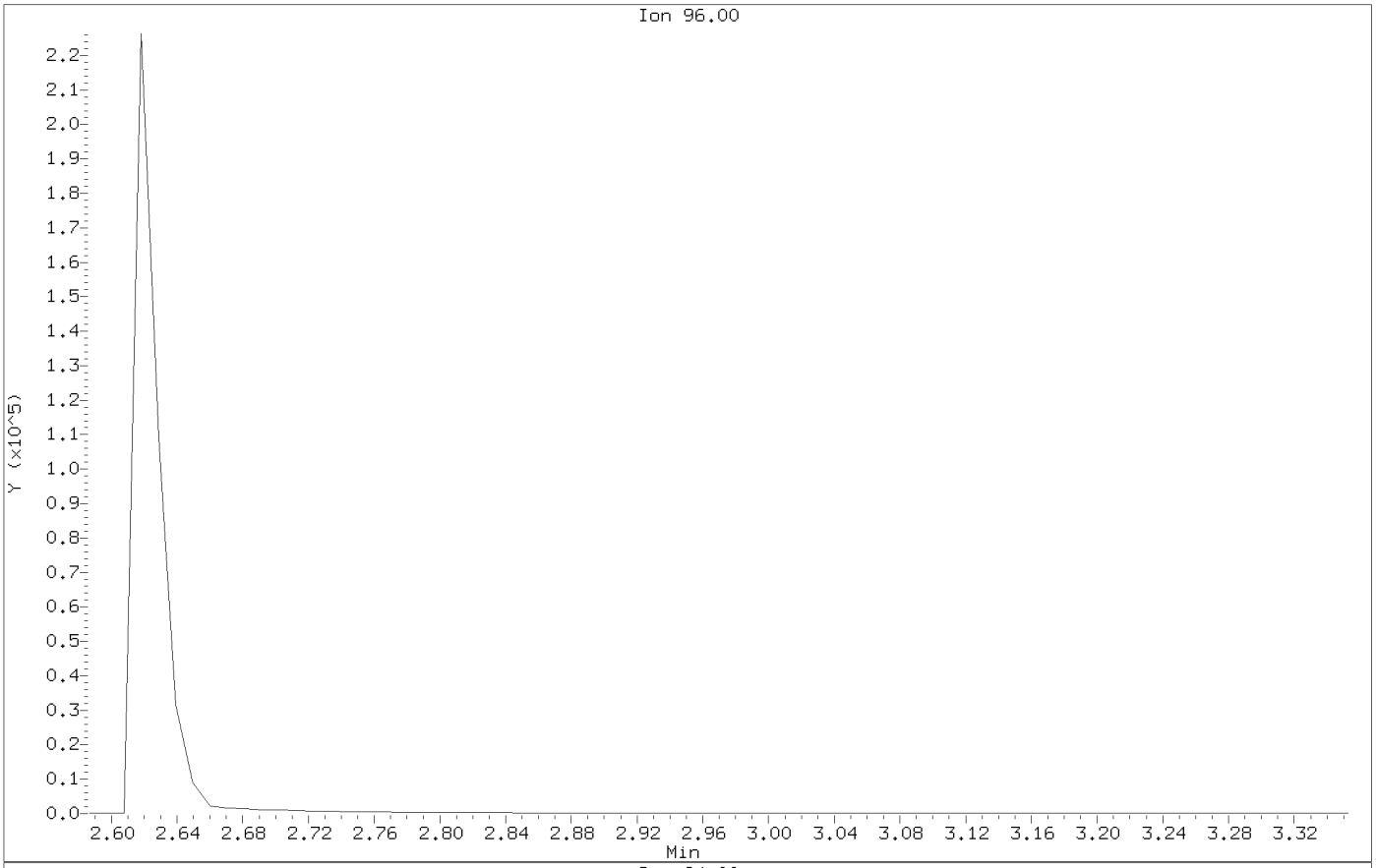
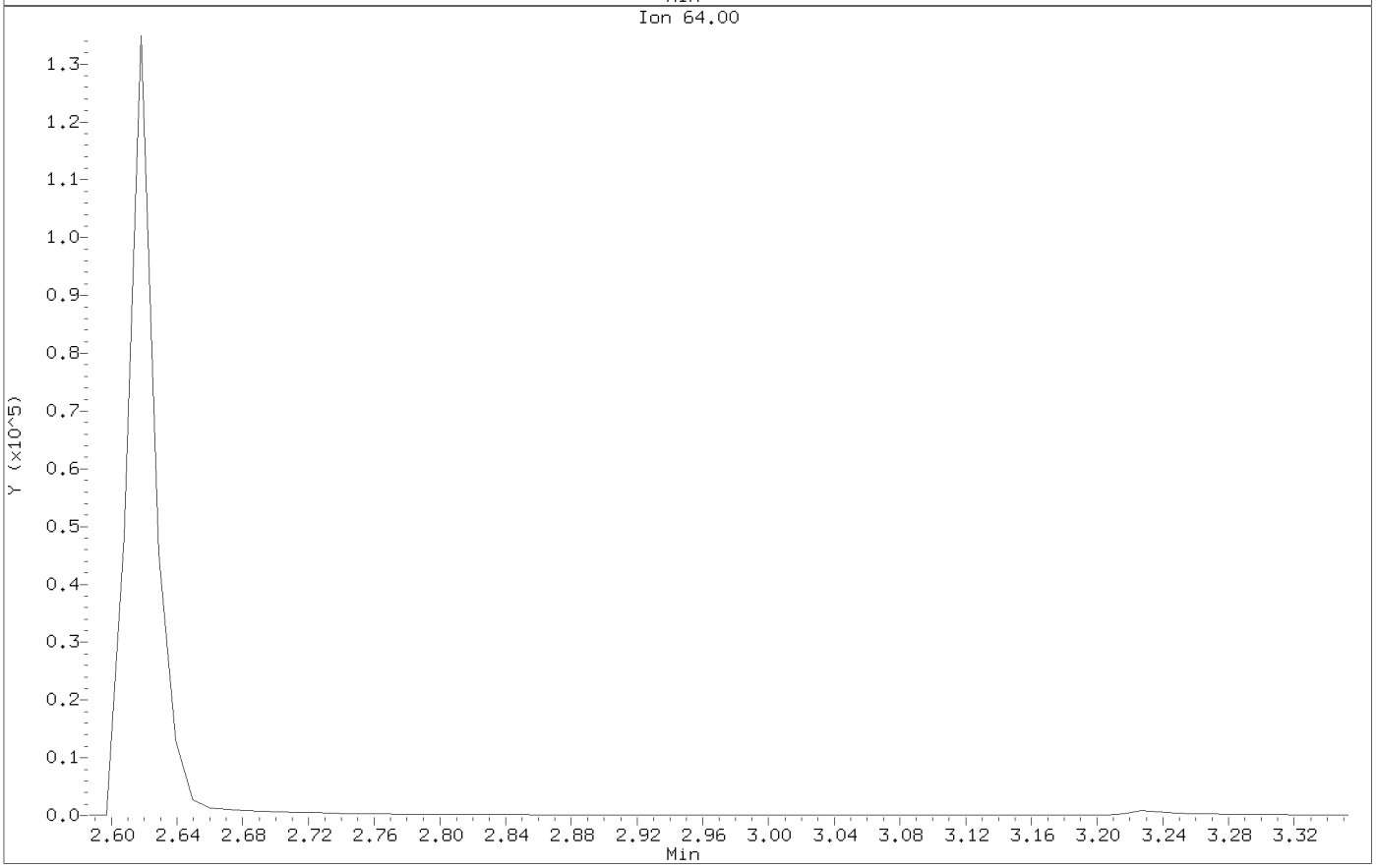
Injection Date: 16-MAR-2018 13:34
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane-d8
CAS Number: 534-52-1





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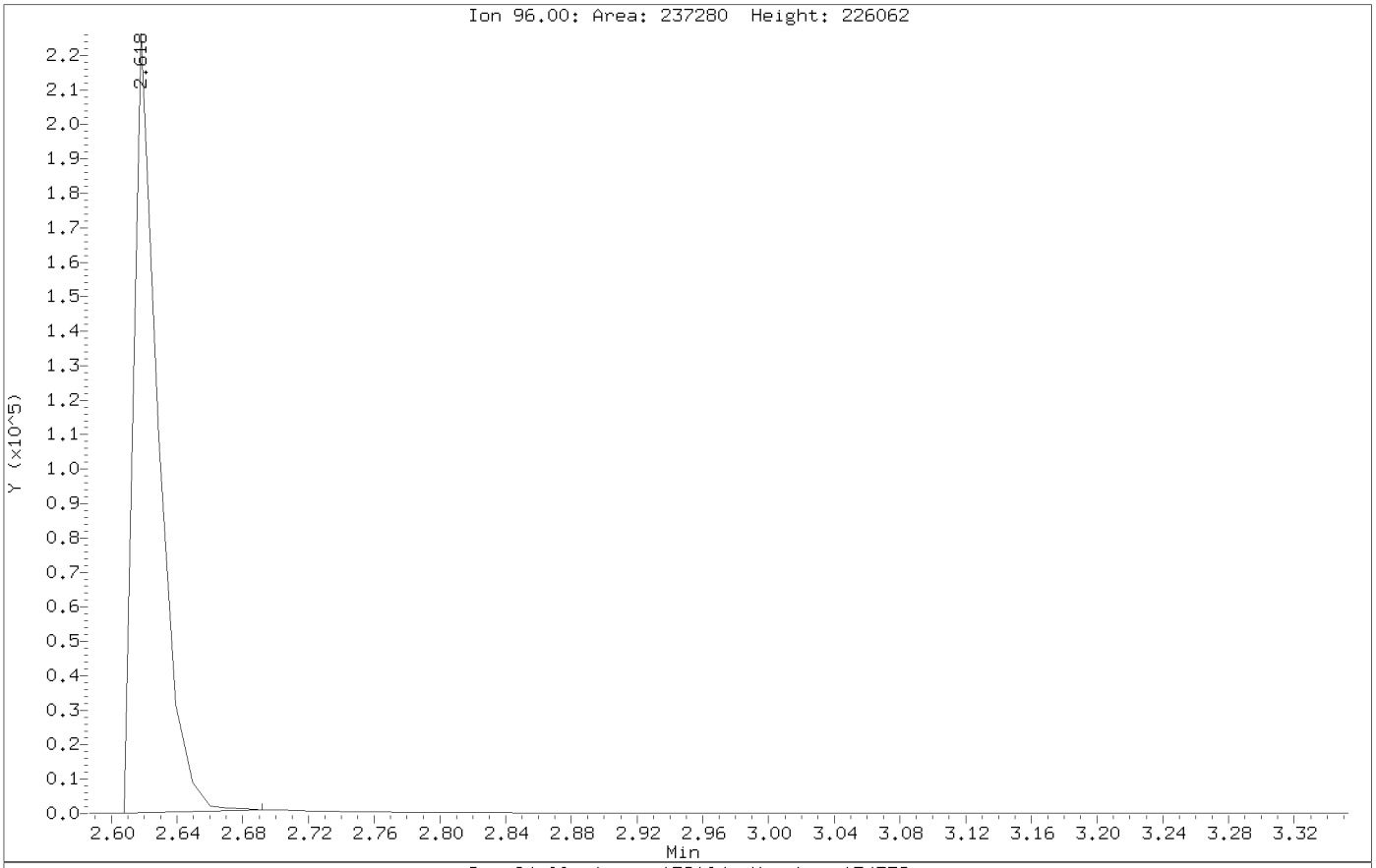
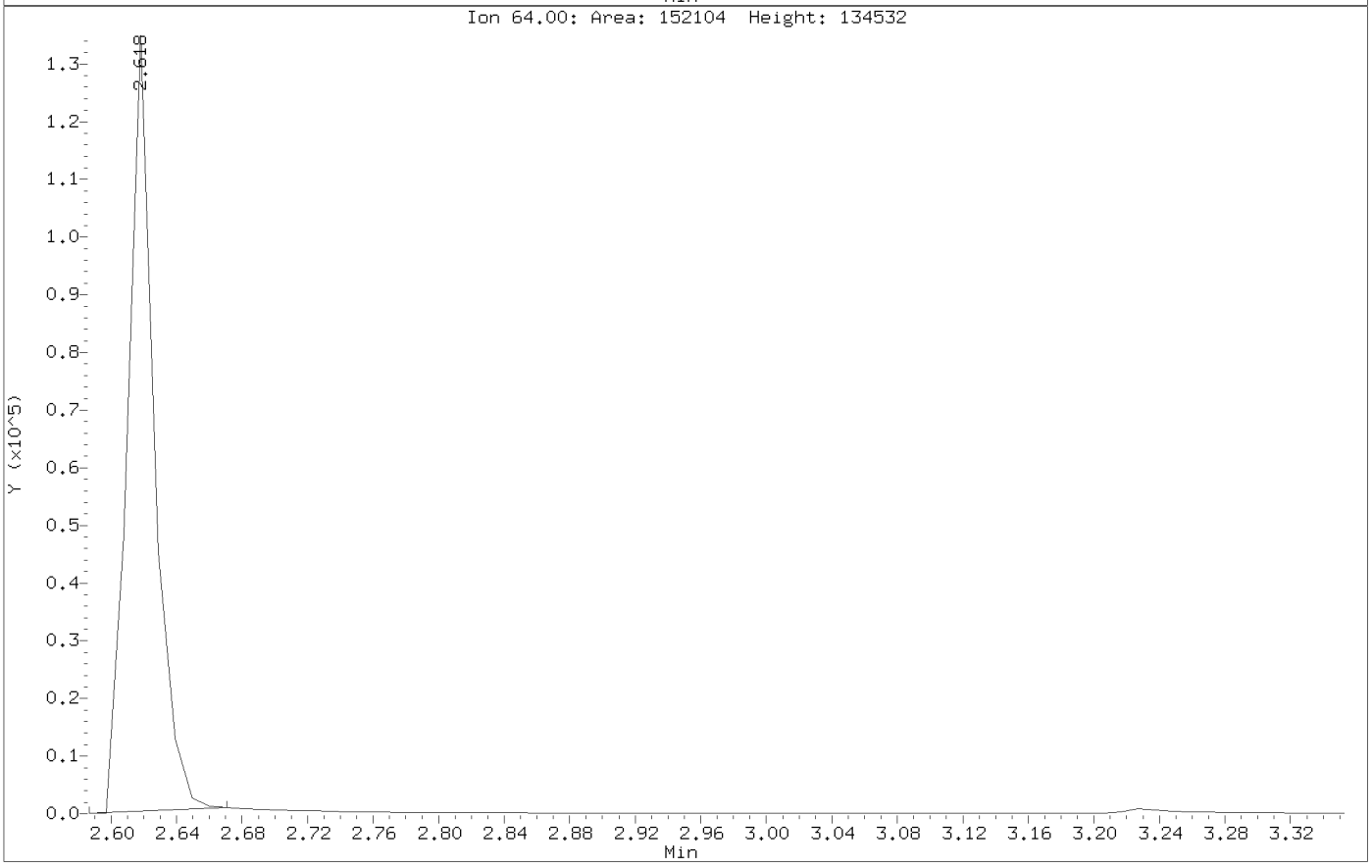
Injection Date: 16-MAR-2018 13:34
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane-d8
CAS Number: 534-52-1

AFTER MANUAL INTEGRATION

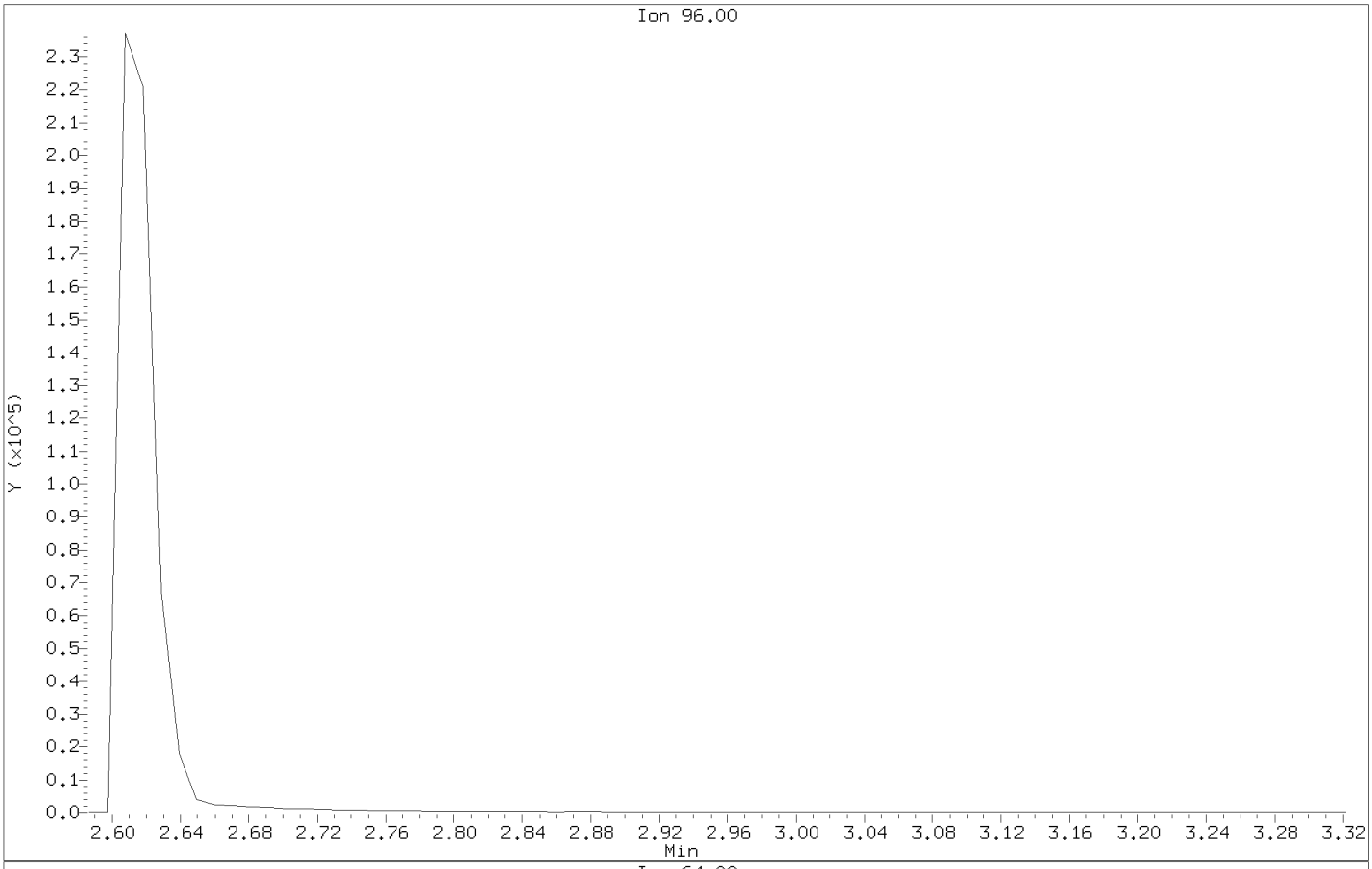


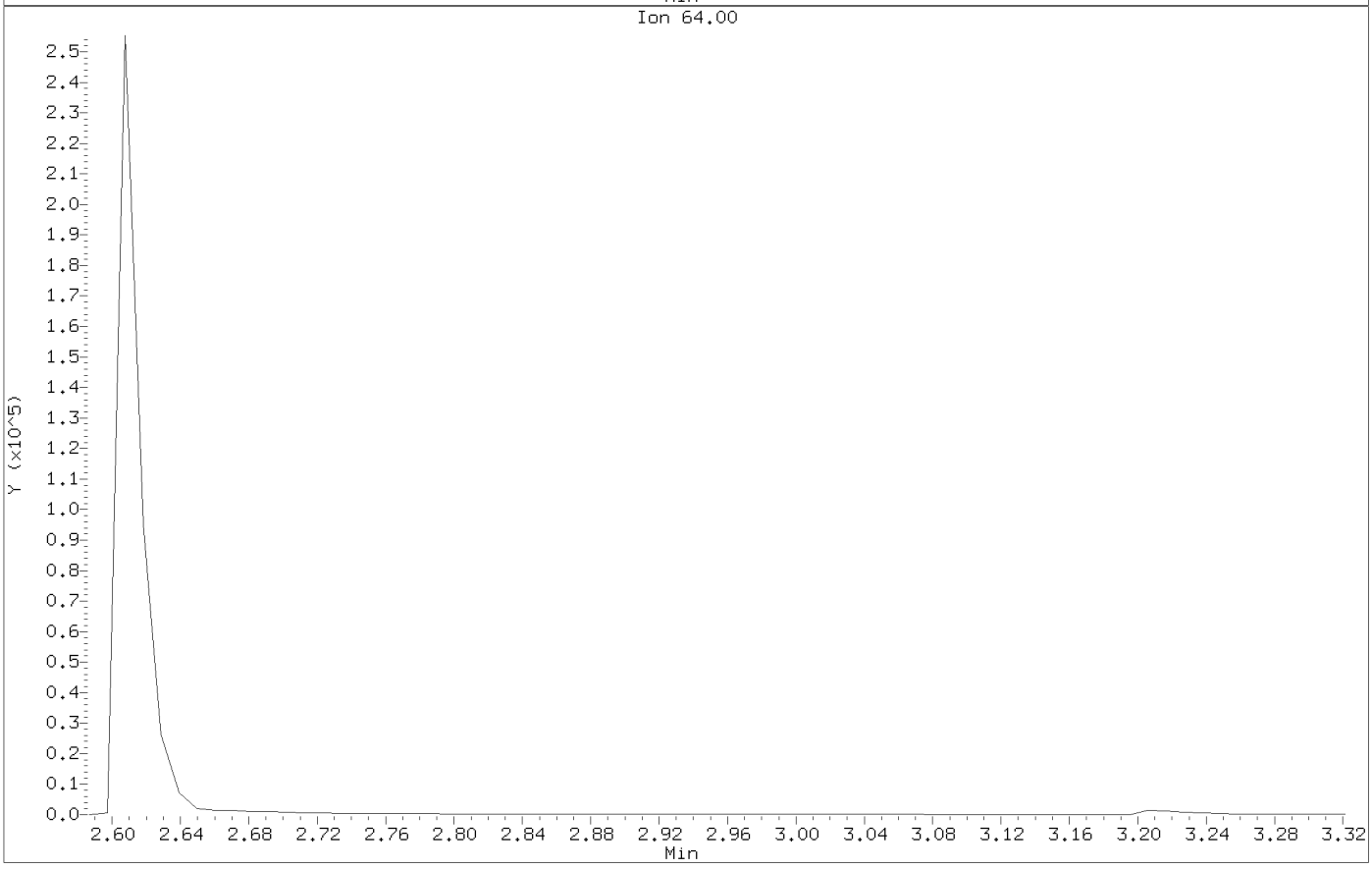


Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7972.D
Injection Date: 16-MAR-2018 14:06
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane-d8
CAS Number: 534-52-1

BEFORE MANUAL INTEGRATION

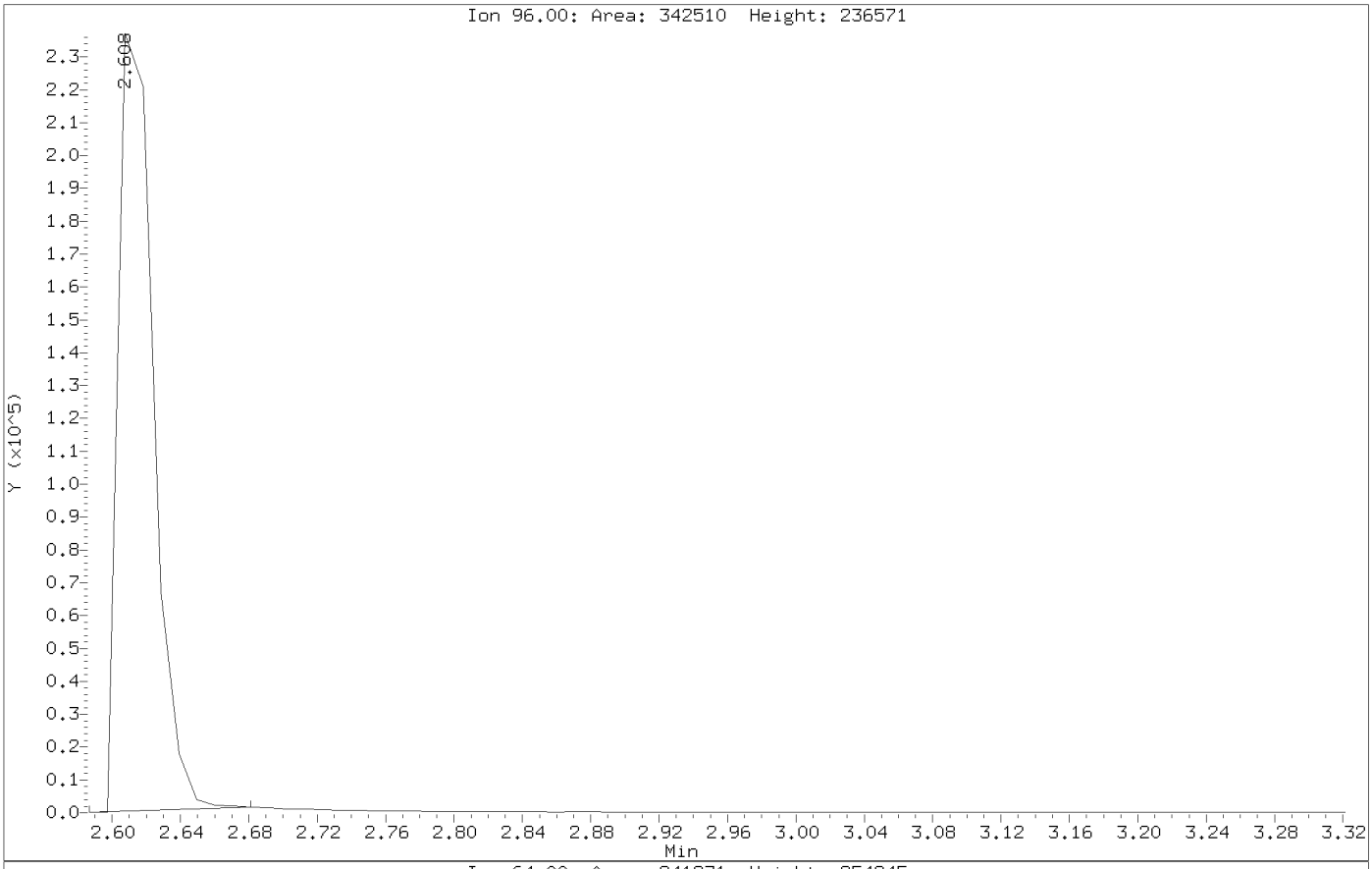


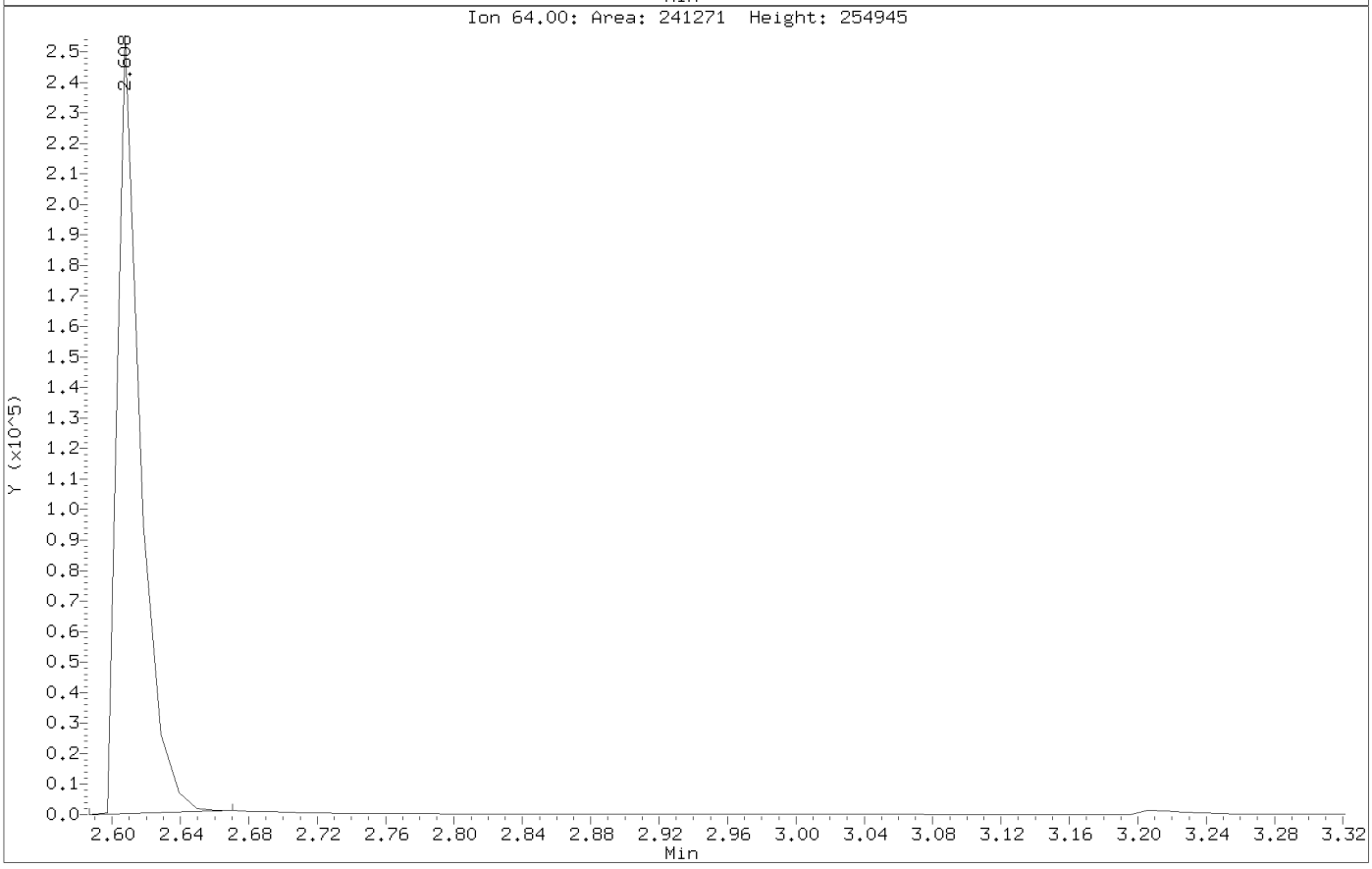


Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7972.D
Injection Date: 16-MAR-2018 14:06
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane-d8
CAS Number: 534-52-1

AFTER MANUAL INTEGRATION

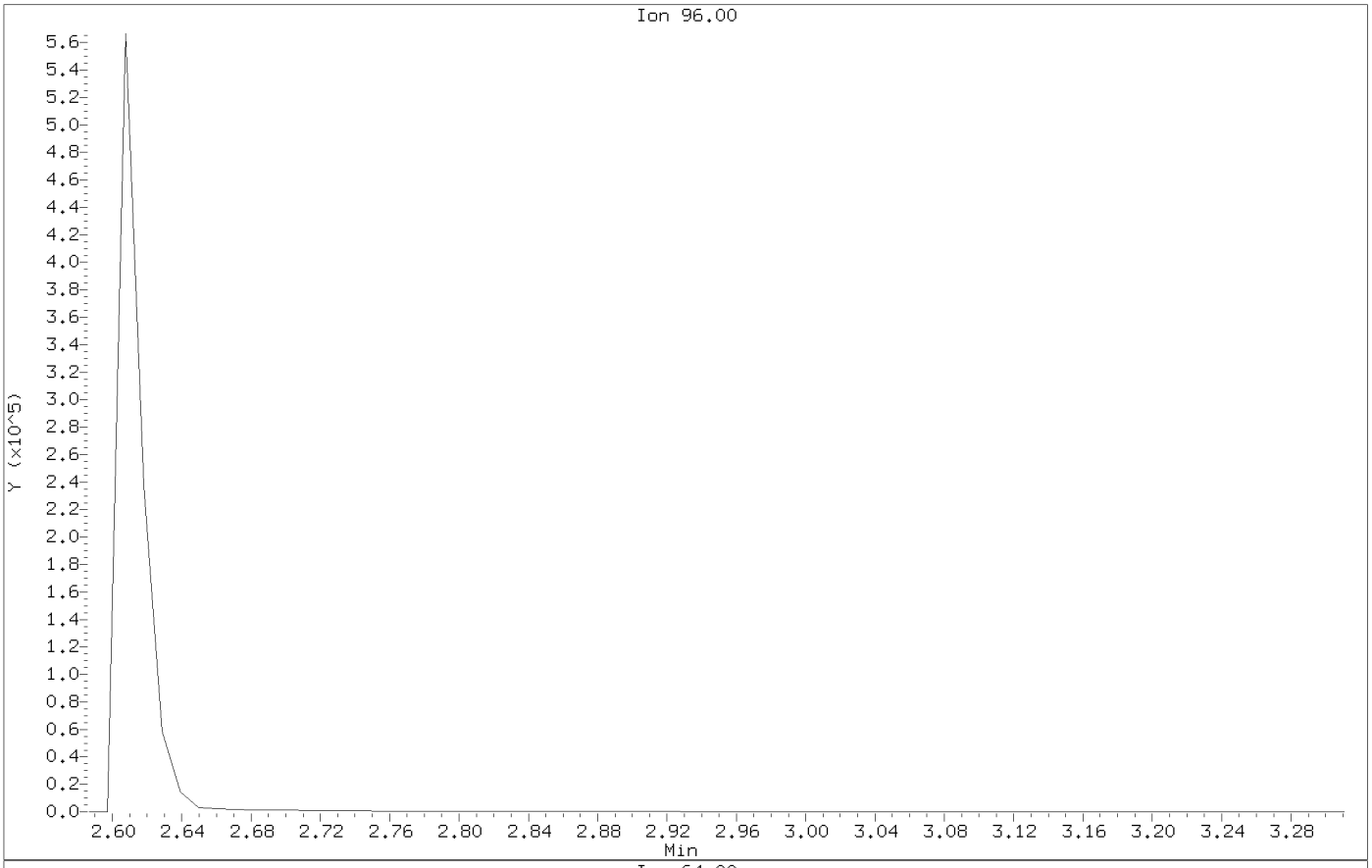


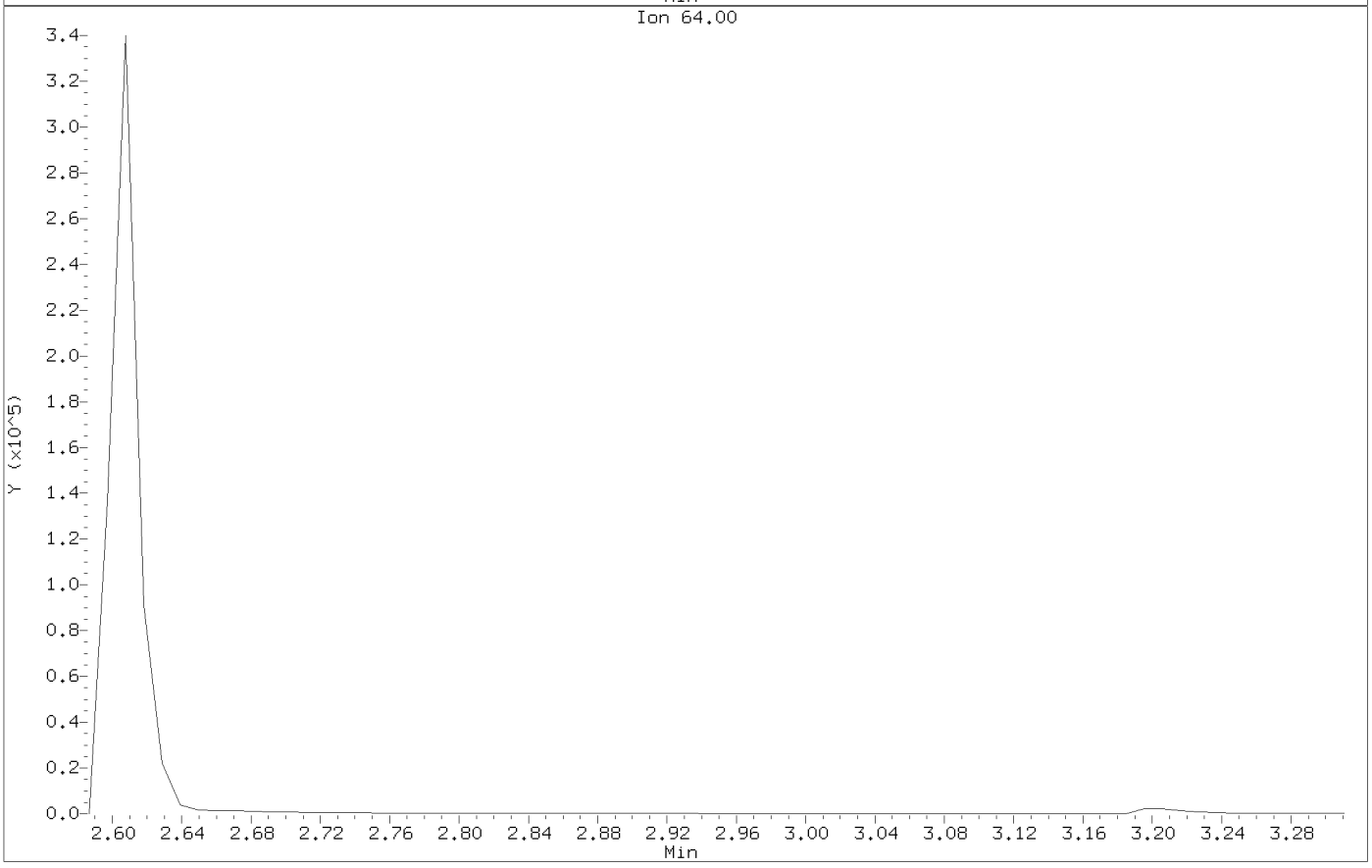


Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Injection Date: 16-MAR-2018 14:38
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane-d8
CAS Number: 534-52-1

BEFORE MANUAL INTEGRATION

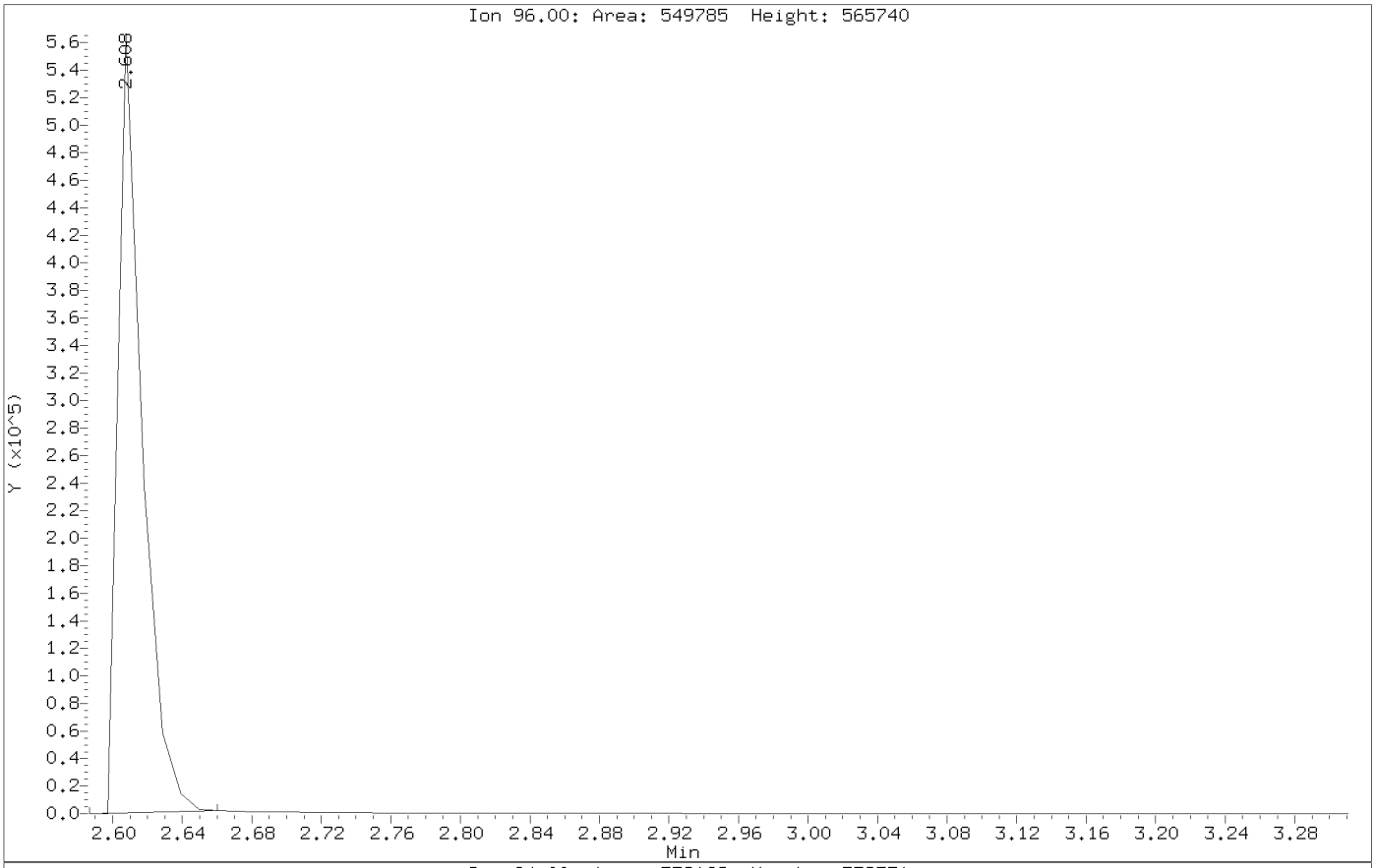


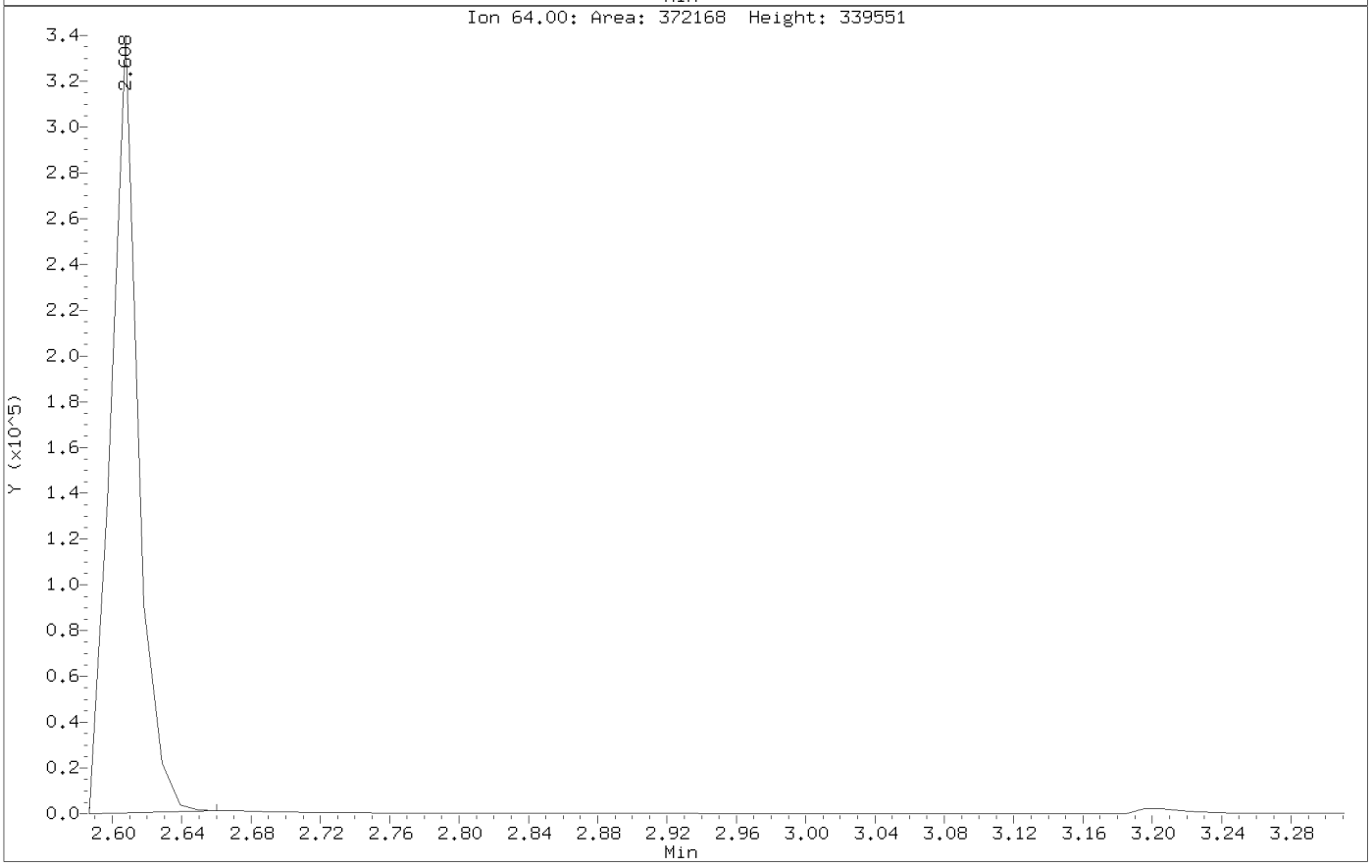


Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Injection Date: 16-MAR-2018 14:38
Instrument: gcms-n.i
Client Sample ID:

Compound: 1,4-Dioxane-d8
CAS Number: 534-52-1

AFTER MANUAL INTEGRATION

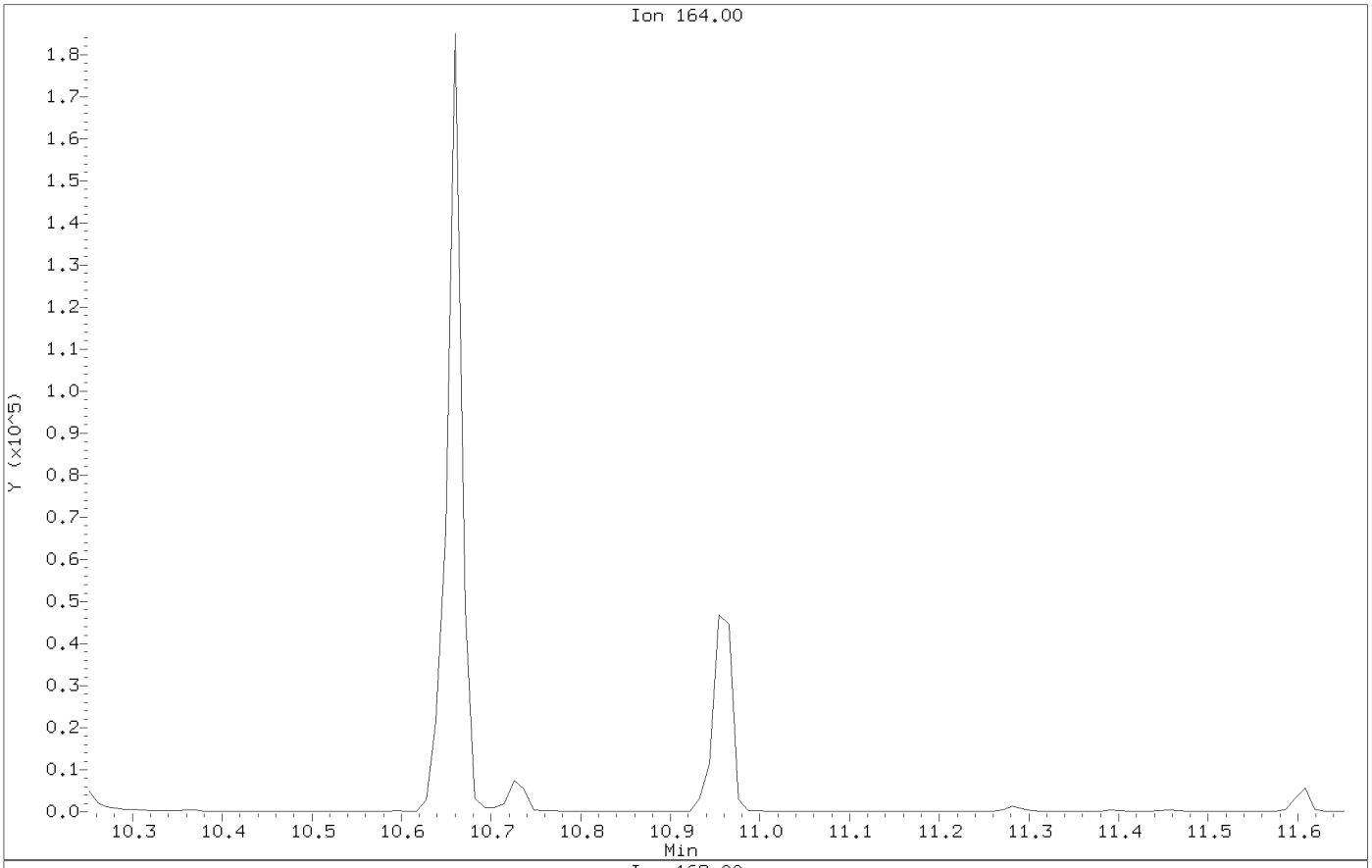


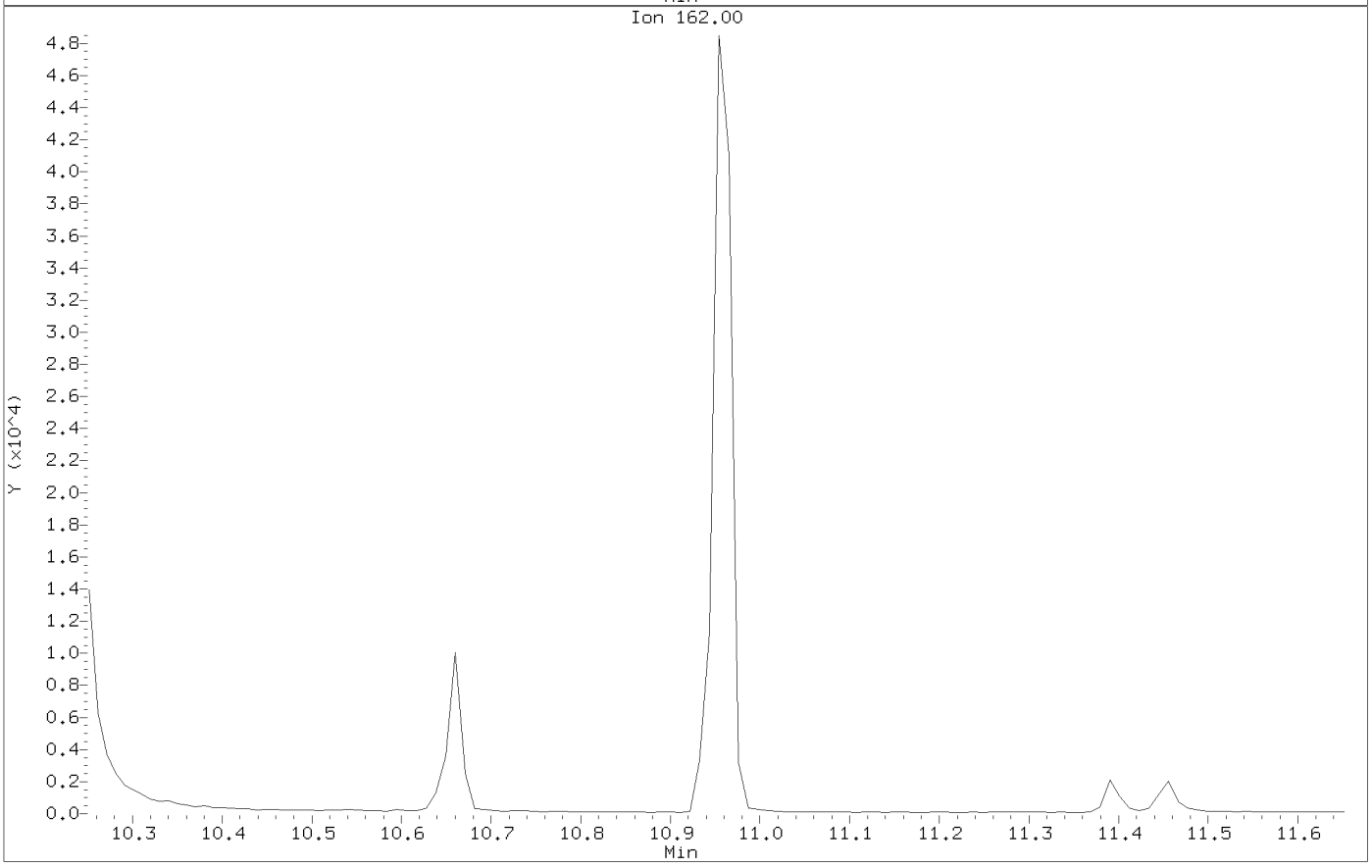


Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Injection Date: 16-MAR-2018 14:38
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

BEFORE MANUAL INTEGRATION

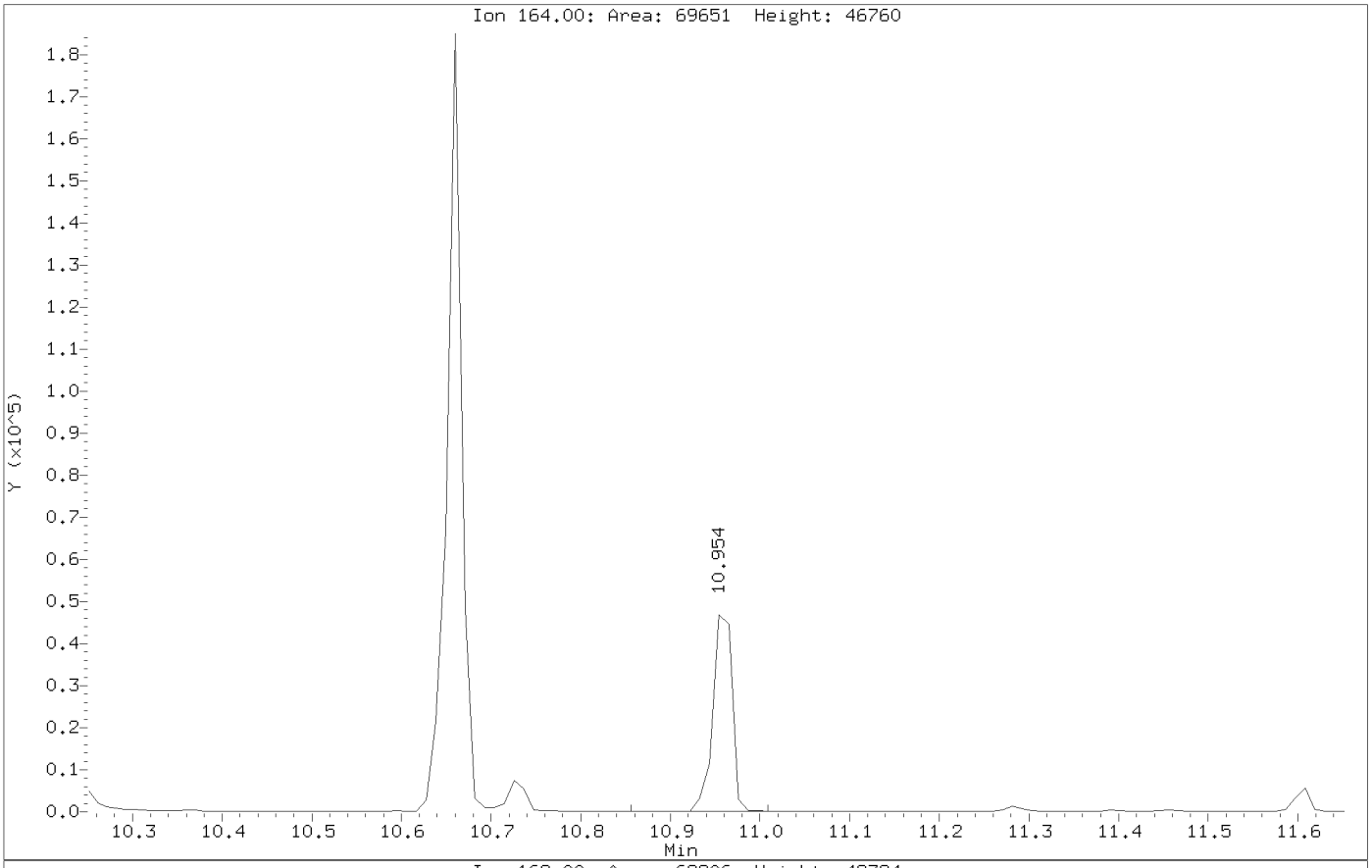


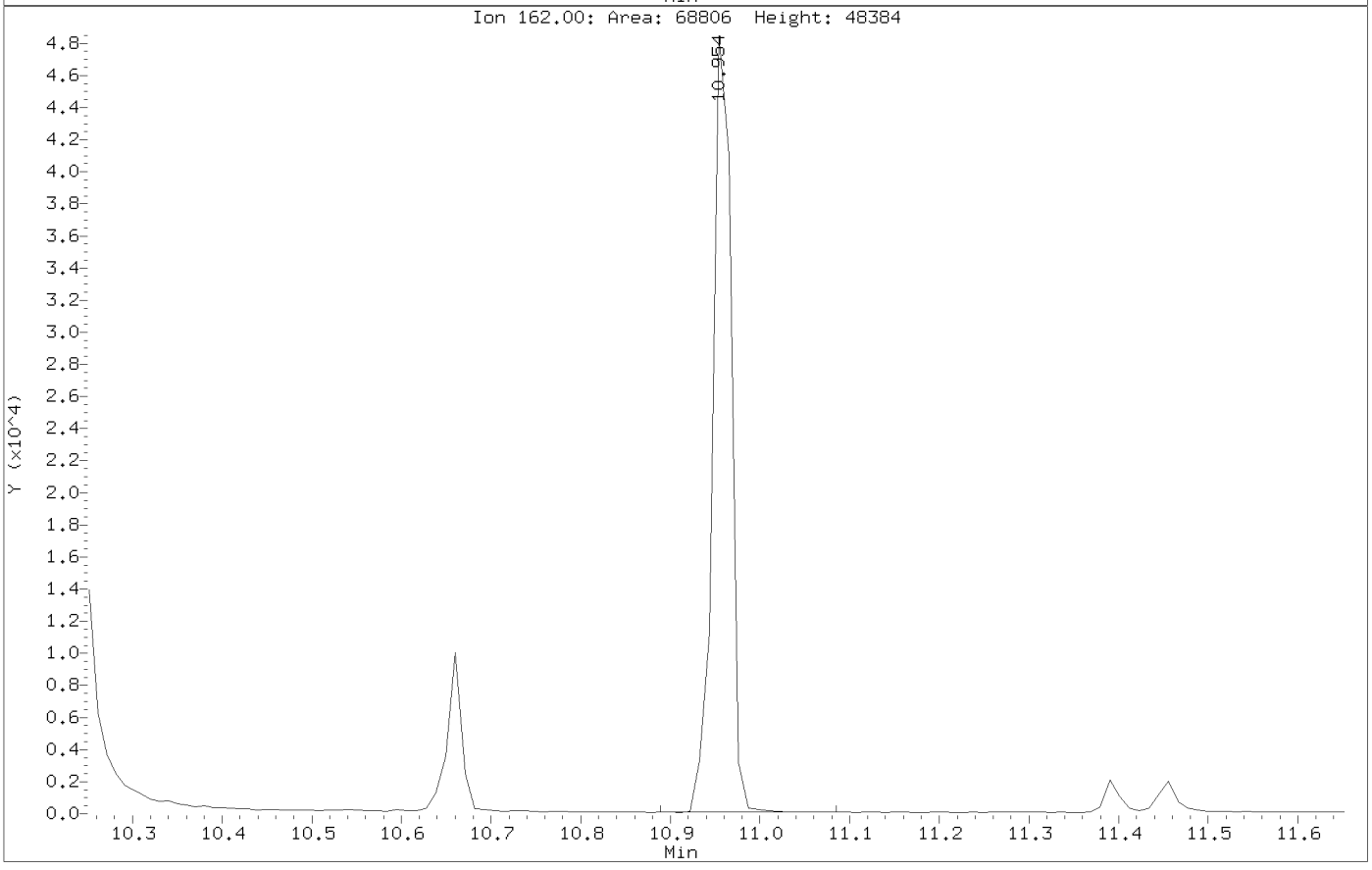


Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\N7973.D
Injection Date: 16-MAR-2018 14:38
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

AFTER MANUAL INTEGRATION





Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-N
Lab File IDs : N8052.D N8053.D N8051.D N8054.D N8055.D N8056.D
Column ID:
Calibration Date(s): 21-MAR-18 10:57, 21-MAR-18 13:37

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	2.0000	7.0000	10.0000	15.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	1.07500	1.08809	1.08006	1.08046	1.02883	0.99033	AVG		1.05713		3.69084	15.00000	O
2-Methylnaphthalene	62784	127645	406993	1328962	1786939	2509398	LNR	-0.32954	0.66509		0.99754	0.99000	O
Acenaphthylene	2.14734	2.23269	2.21135	2.26887	2.20245	2.14783	AVG		2.20175		2.17084	15.00000	O
Acenaphthene	1.39097	1.45017	1.43918	1.44802	1.41120	1.39751	AVG		1.42284		1.84372	15.00000	O
Fluorene	1.43282	1.50237	1.52141	1.55025	1.49286	1.48198	AVG		1.49695		2.64226	15.00000	O
Phenanthrene	1.29909	1.34791	1.34635	1.31942	1.25634	1.23968	AVG		1.30146		3.49647	15.00000	O
Anthracene	1.38780	1.37167	1.34449	1.36824	1.29536	1.22030	AVG		1.33131		4.74736	15.00000	O
Fluoranthene	1.26884	1.12264	1.11165	1.11296	1.04463	0.98606	AVG		1.10779		8.56423	15.00000	O
Pyrene	3.57506	3.27478	2.70179	2.86930	2.59192	2.56522	AVG		2.92968		13.97471	15.00000	O
Benzo(a)anthracene	1.58480	1.45129	1.45286	1.50547	1.42271	1.43442	AVG		1.47526		4.11399	15.00000	O
Chrysene	21037	48235	209861	657070	925951	1376317	LNR	-0.21498	1.38870		0.99903	0.99000	O
Benzo(b)fluoranthene	1.72701	1.68584	1.50350	1.79097	1.59462	1.75597	AVG		1.67632		6.46305	15.00000	O
Benzo(k)fluoranthene	13260	30578	158536	426654	662441	914672	LNR	-0.19550	1.77535		0.99769	0.99000	O
Benzo(a)pyrene	1.63149	1.37503	1.19172	1.33643	1.30233	1.32662	AVG		1.36060		10.76393	15.00000	O
Indeno(1,2,3-cd)pyrene	0.45065	0.42296	0.41093	0.46231	0.48893	0.47588	AVG		0.45194		6.69049	15.00000	O
Dibenzo(a,h)anthracene	0.64512	0.52229	0.47258	0.62856	0.63949	0.64329	AVG		0.59189		12.68007	15.00000	O
Benzo(g,h,i)perylene	0.97029	0.73788	0.71442	0.86780	0.84904	0.84054	AVG		0.82999		11.22883	15.00000	O
2-Methylnaphthalene-D10	0.47358	0.48234	0.49802	0.49397	0.46813	0.45500	AVG		0.47851		3.39470	15.00000	
Fluorene-D10	0.93562	0.98822	0.97844	0.99807	0.97596	0.99308	AVG		0.97823		2.30173	15.00000	
Pyrene-D10	1.73104	1.73596	1.53113	1.63794	1.49717	1.49055	AVG		1.60397		7.06995	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8057.D
Report Date: 21-Mar-2018 15:10

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: 021497
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: WG225136-8
Level: LOW Operator: JCG
Data Type: MS DATA SampleType: INDCHECK
SpikeList File: SIM_IND_CHK5.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Misc Info: WG225136,WG225136,WG225136-4

SPIKE	COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
2	1,4-Dioxane	5.00	4.70	94.11	80-120
3	N-Nitrosodimethyla	5.00	5.03	100.58	80-120
4	Pyridine	5.00	5.91	118.29	80-120
5	Benzaldehyde	5.00	5.30	106.06	80-120
7	Bis(2-Chloroethyl)	5.00	4.72	94.39	80-120
6	Phenol	5.00	5.20	104.10	80-120
8	2-Chlorophenol	5.00	4.95	98.99	80-120
9	1,3-Dichlorobenzen	5.00	5.09	101.78	80-120
11	1,4-Dichlorobenzen	5.00	5.06	101.24	80-120
12	1,2-Dichlorobenzen	5.00	5.07	101.43	80-120
13	2,2'-Oxybis(1-chlo	5.00	3.85	77.06*	80-120
14	2-Methylphenol	5.00	5.32	106.40	80-120
15	Acetophenone	5.00	5.40	108.01	80-120
16	N-Nitroso-di-n-pro	5.00	4.72	94.40	80-120
18	Hexachloroethane	5.00	4.98	99.53	80-120
17	3&4-Methylphenol	5.00	5.12	102.37	80-120
19	Nitrobenzene	5.00	5.40	107.94	80-120
20	Isophorone	5.00	5.01	100.28	80-120
21	2-Nitrophenol	5.00	5.20	103.99	80-120
22	2,4-Dimethylphenol	5.00	4.94	98.89	80-120
23	bis(2-Chloroethoxy	5.00	5.28	105.57	80-120
24	2,4-Dichlorophenol	5.00	5.21	104.12	80-120
25	1,2,4-Trichloroben	5.00	5.29	105.79	80-120
27	Naphthalene	5.00	5.16	103.11	80-120
28	4-Chloroaniline	5.00	4.79	95.87	80-120
29	Hexachlorobutadien	5.00	5.20	104.07	80-120
30	Caprolactam	5.00	5.17	103.50	80-120
33	2-Methylnaphthalen	5.00	5.57	111.49	80-120
31	4-Chloro-3-Methylp	5.00	5.01	100.24	80-120
34	1-Methylnaphthalen	5.00	4.78	95.58	80-120
36	1,2,4,5-Tetrachlor	5.00	5.21	104.21	80-120
35	Hexachlorocyclopen	5.00	3.68	73.72*	80-120
38	2,4,6-Trichlorophe	5.00	4.87	97.32	80-120
39	2,4,5-Trichlorophe	5.00	5.29	105.76	80-120
41	2-Chloronaphthalen	5.00	5.01	100.22	80-120
40	1,1'-Biphenyl	5.00	5.18	103.56	80-120
42	2-Nitroaniline	5.00	5.47	109.34	80-120
43	Dimethyl Phthalate	5.00	5.07	101.44	80-120
45	Acenaphthylene	5.00	4.90	98.03	80-120
44	2,6-Dinitrotoluene	5.00	5.18	103.52	80-120

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8057.D
Report Date: 21-Mar-2018 15:10

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
48 Acenaphthene	5.00	5.06	101.13	80-120
46 3-Nitroaniline	5.00	5.07	101.44	80-120
49 2,4-Dinitrophenol	5.00	4.60	92.01	80-120
50 Dibenzofuran	5.00	5.26	105.26	80-120
51 2,4-Dinitrotoluene	5.00	5.26	105.31	80-120
53 2,3,4,6-Tetrachlor	5.00	4.29	85.74	80-120
52 4-Nitrophenol	5.00	4.53	90.58	80-120
54 Diethylphthalate	5.00	5.16	103.30	80-120
56 Fluorene	5.00	5.03	100.70	80-120
57 4-Chlorophenyl-phe	5.00	4.96	99.31	80-120
59 4,6-Dinitro-2-Meth	5.00	4.72	94.42	80-120
58 4-Nitroaniline	5.00	6.09	121.79*	80-120
60 N-Nitrosodiphenyla	5.00	4.15	83.03	80-120
61 4-Bromophenyl-phen	5.00	4.76	95.25	80-120
62 Hexachlorobenzene	5.00	4.88	97.53	80-120
63 Atrazine	5.00	2.43	48.59*	80-120
64 Pentachlorophenol	5.00	4.92	98.43	80-120
66 Phenanthrene	5.00	4.90	98.11	80-120
67 Anthracene	5.00	4.81	96.27	80-120
68 Carbazole	5.00	5.06	101.25	80-120
69 Di-n-butylphthalat	5.00	5.14	102.75	80-120
70 Fluoranthene	5.00	4.74	94.86	80-120
72 Pyrene	5.00	4.39	87.90	80-120
73 Butylbenzylphthala	5.00	4.76	95.16	80-120
74 Benzo(a)anthracene	5.00	4.87	97.36	80-120
77 Chrysene	5.00	5.17	103.38	80-120
75 3,3'-Dichlorobenzi	5.00	5.15	103.10	80-120
78 bis(2-Ethylhexyl)p	5.00	4.77	95.36	80-120
79 Di-n-octylphthalat	5.00	4.98	99.54	80-120
80 Benzo(b)fluoranthe	5.00	4.99	99.79	80-120
81 Benzo(k)fluoranthe	5.00	5.34	106.81	80-120
82 Benzo(a)pyrene	5.00	4.28	85.60	80-120
85 Indeno(1,2,3-cd)py	5.00	4.51	90.20	80-120
86 Dibenzo(a,h)anthra	5.00	4.26	85.18	80-120
87 Benzo(g,h,i)peryle	5.00	4.14	82.92	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 1 1,4-Dioxane-d8	2.00	0.000	*	30-150
$ 32 2-Methylnaphthale	2.00	0.000	*	43-92
$ 37 2,4-Dibromophenol	4.00	0.000	*	10-130
$ 55 Fluorene-D10	2.00	0.000	*	29-101
$ 71 Pyrene-D10	2.00	0.000	*	53-166

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8051.D
Report Date: 22-Mar-2018 10:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8051.D
Lab Smp Id: WG225136-4
Inj Date : 21-MAR-2018 10:57 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225136-4
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.612	2.591	(0.376)	84957	2.00000	2.14	
	2 1,4-Dioxane	88	2.654	2.633	(0.382)	74730	2.00000	1.96	
	3 N-Nitrosodimethylamine	74	3.221	3.158	(0.464)	95897	2.00000	1.99	
	4 Pyridine	79	3.252	3.168	(0.469)	170731	2.00000	2.08	
	5 Benzaldehyde	77	6.397	6.376	(0.922)	53320	2.00000	2.09	
	6 Phenol	94	6.628	6.618	(0.955)	521503	4.50000	4.45	
	7 Bis(2-Chloroethyl)ether	93	6.628	6.628	(0.955)	209987	2.00000	1.98	
	8 2-Chlorophenol	128	6.709	6.699	(0.967)	526056	4.50000	4.54	
	9 1,3-Dichlorobenzene	146	6.860	6.860	(0.988)	249136	2.00000	2.02	
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	67704	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.960	6.950	(1.003)	255313	2.00000	2.01	
	12 1,2-Dichlorobenzene	146	7.152	7.151	(1.030)	240162	2.00000	2.00	
	13 2,2'-Oxybis(1-chloropropane)	45	7.323	7.323	(1.055)	205323	2.00000	2.02	
	14 2-Methylphenol	108	7.373	7.373	(1.062)	403202	4.50000	4.38	
	15 Acetophenone	105	7.484	7.484	(0.872)	263791	2.00000	2.06	
	16 N-Nitroso-di-n-propylamine	70	7.504	7.504	(1.081)	126903	2.00000	2.05	
	17 3&4-Methylphenol	108	7.584	7.584	(1.093)	412650	4.50000	4.47	
	18 Hexachloroethane	117	7.564	7.574	(1.090)	82282	2.00000	1.95	
	19 Nitrobenzene	77	7.695	7.685	(0.897)	183523	2.00000	1.92	
	20 Isophorone	82	8.007	8.017	(0.933)	322004	2.00000	2.06	
	21 2-Nitrophenol	139	8.118	8.118	(0.946)	259561	4.50000	4.60	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8051.D
Report Date: 22-Mar-2018 10:54

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.249	8.239	(0.961)	405805	4.50000	4.60	
	23 bis(2-Chloroethoxy)methane	93	8.319	8.319	(0.970)	235003	2.00000	2.10	
	24 2,4-Dichlorophenol	162	8.490	8.470	(0.989)	374980	4.50000	4.63	
	25 1,2,4-Trichlorobenzene	180	8.531	8.530	(0.994)	165763	2.00000	2.05	
*	26 Naphthalene-D8	136	8.581	8.581	(1.000)	211188	0.80000	(a)	
	27 Naphthalene	128	8.611	8.611	(1.004)	570241	2.00000	2.04	
	28 4-Chloroaniline	127	8.752	8.732	(1.020)	229913	2.00000	2.12	
	29 Hexachlorobutadiene	225	8.802	8.812	(1.026)	81617	2.00000	2.02	
	30 Caprolactam	113	9.193	9.222	(1.071)	53715	2.00000	1.97	
	31 4-Chloro-3-Methylphenol	107	9.459	9.459	(1.102)	332566	4.50000	4.60	
$	32 2-Methylnaphthalene-D10	152	9.498	9.498	(1.107)	262941	2.00000	2.08	
	33 2-Methylnaphthalene	142	9.547	9.537	(1.113)	406993	2.00000	2.05	
	34 1-Methylnaphthalene	142	9.665	9.675	(1.126)	354519	2.00000	1.98	
	35 Hexachlorocyclopentadiene	237	9.764	9.774	(0.895)	38676	2.00000	1.75	
	36 1,2,4,5-Tetrachlorobenzene	216	9.784	9.783	(0.896)	137988	2.00000	2.00	
$	37 2,4-Dibromophenol	252	9.961	9.951	(0.913)	78528	2.00000	2.01	
	38 2,4,6-Trichlorophenol	196	9.971	9.970	(0.913)	221159	4.50000	4.66	
	39 2,4,5-Trichlorophenol	196	10.059	10.039	(0.922)	236449	4.50000	4.63	
	40 1,1'-Biphenyl	154	10.177	10.177	(0.932)	423128	2.00000	2.04	
	41 2-Chloronaphthalene	164	10.187	10.187	(0.933)	116090	2.00000	2.04	
	42 2-Nitroaniline	65	10.364	10.364	(0.950)	74141	2.00000	2.03	
	43 Dimethyl Phthalate	163	10.621	10.621	(0.973)	852829	4.50000	4.47	
	44 2,6-Dinitrotoluene	165	10.686	10.697	(0.979)	90982	2.00000	2.07	
	45 Acenaphthylene	152	10.730	10.719	(0.983)	500423	2.00000	2.01	
	46 3-Nitroaniline	138	10.937	10.915	(1.002)	70314	2.00000	1.91	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	90519	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.948	(1.004)	325683	2.00000	2.02	
	49 2,4-Dinitrophenol	184	11.100	11.089	(1.017)	67855	4.50000	4.44	
	50 Dibenzofuran	168	11.198	11.198	(1.026)	429310	2.00000	2.05	
	51 2,4-Dinitrotoluene	165	11.253	11.242	(1.031)	109193	2.00000	2.06	
	52 4-Nitrophenol	139	11.329	11.275	(1.038)	120737	4.50000	4.71	
	53 2,3,4,6-Tetrachlorophenol	232	11.416	11.416	(1.046)	166251	4.50000	4.62	
	54 Diethylphthalate	149	11.558	11.569	(1.059)	889974	4.50000	4.44	
$	55 Fluorene-D10	174	11.612	11.612	(1.064)	221419	2.00000	2.00	
	56 Fluorene	166	11.656	11.645	(1.068)	344291	2.00000	2.03	
	57 4-Chlorophenyl-phenylether	204	11.678	11.678	(1.070)	151458	2.00000	2.02	
	58 4-Nitroaniline	138	11.754	11.743	(1.077)	57787	2.00000	2.00	
	59 4,6-Dinitro-2-Methylphenol	198	11.809	11.798	(0.916)	104516	4.50000	4.30	
	60 N-Nitrosodiphenylamine	169	11.852	11.852	(0.919)	264834	2.00000	2.00	
	61 4-Bromophenyl-phenylether	248	12.319	12.318	(0.955)	80414	2.00000	1.93	
	62 Hexachlorobenzene	284	12.404	12.414	(0.962)	82498	2.00000	1.92	
	63 Atrazine	200	12.596	12.607	(0.977)	56821	2.00000	2.08	
	64 Pentachlorophenol	266	12.714	12.703	(0.986)	93022	4.50000	4.73	
*	65 Phenanthrene-D10	188	12.895	12.895	(1.000)	128283	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.916	(1.002)	431785	2.00000	2.07	
	67 Anthracene	178	13.002	12.991	(1.008)	431187	2.00000	2.02	
	68 Carbazole	167	13.258	13.247	(1.028)	340521	2.00000	2.02	
	69 Di-n-butylphthalate	149	13.760	13.760	(1.067)	1473734	4.50000	4.55	
	70 Fluoranthene	202	14.527	14.518	(1.127)	356514	2.00000	2.01	
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	212846	2.00000	1.91	
	72 Pyrene	202	14.818	14.809	(0.895)	375582	2.00000	1.84	
	73 Butylbenzylphthalate	149	15.756	15.756	(0.952)	587664	4.50000	4.33	
	74 Benzo(a)anthracene	228	16.544	16.535	(0.999)	201966	2.00000	1.97(H)	
	75 3,3'-Dichlorobenzidine	252	16.554	16.544	(1.000)	52498	2.00000	2.35	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8051.D
Report Date: 22-Mar-2018 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.554	16.544	(1.000)	55605	0.80000	(a)	
	77 Chrysene	228	16.601	16.591	(1.003)	209861	2.00000	2.00	
	78 bis(2-Ethylhexyl)phthalate	149	16.704	16.704	(1.009)	873021	4.50000	4.36	
	79 Di-n-octylphthalate	149	17.935	17.935	(1.083)	1273623	4.50000	4.59	
	80 Benzo(b)fluoranthene	252	18.582	18.571	(0.957)	122588	2.00000	1.79	
	81 Benzo(k)fluoranthene	252	18.639	18.616	(0.960)	158536	2.00000	2.03(H)	
	82 Benzo(a)pyrene	252	19.286	19.263	(0.993)	97167	2.00000	1.75	
*	83 Perylene-D12	264	19.423	19.400	(1.000)	32614	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.501	21.467	(1.299)	57125	2.00000	1.82	
	86 Dibenzo(a,h)anthracene	278	21.535	21.501	(1.109)	38532	2.00000	1.60	
	87 Benzo(g,h,i)perylene	276	22.012	21.978	(1.133)	58250	2.00000	1.72	
M	88 Total PAHs	100				751018	36.0000	(a)	
M	324 Total Low PAHs	100				3010603	14.0000	(a)	
M	325 Total High PAHs	100				1279622	12.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n,i\N032118,b\N8051,D
Date : 21-MAR-2018 10:57
Client ID:
Sample Info: WG225136-4
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032118,b\N8051,D
Y (x10^6)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropane
-Acetophenone
-2-Methylphenol
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
-Naphthalene-D8+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,5-Trichlorophenol
-2,4-Dibromophenol+
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-2,4-Dinitrotoluene
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-Diethylphthalate
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Chrysene-D12
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Report Date: 22-Mar-2018 10:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Lab Smp Id: WG225136-2
Inj Date : 21-MAR-2018 11:30
Operator : JCG   Inst ID: gcms-n.i
Smp Info : WG225136-2
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez   Quant Type: ISTD
Cal Date : 21-MAR-2018 11:30   Cal File: N8052.D
Als bottle: 3   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
$ 1	1,4-Dioxane-d8	96	2.644	2.591	(0.381)	6260	0.20000	0.173(a)	
2	1,4-Dioxane	88	2.686	2.633	(0.387)	6471	0.20000	0.186(a)	
3	N-Nitrosodimethylamine	74	3.420	3.158	(0.493)	8507	0.20000	0.194(aM)	M9
4	Pyridine	79	3.620	3.168	(0.522)	13838	0.20000	0.184(aM)	M9
5	Benzaldehyde	77	6.467	6.376	(0.932)	3879	0.20000	0.166(a)	
6	Phenol	94	6.689	6.618	(0.964)	103245	1.00000	0.966(a)	
7	Bis(2-Chloroethyl)ether	93	6.669	6.628	(0.961)	25466	0.20000	0.154(aQ)	
8	2-Chlorophenol	128	6.739	6.699	(0.971)	100788	1.00000	0.953(a)	
9	1,3-Dichlorobenzene	146	6.870	6.860	(0.990)	21428	0.20000	0.190(a)	
* 10	1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	61769	0.80000	(aQ)	
11	1,4-Dichlorobenzene	146	6.960	6.950	(1.003)	21785	0.20000	0.188(a)	
12	1,2-Dichlorobenzene	146	7.162	7.151	(1.032)	20775	0.20000	0.190(a)	
13	2,2'-Oxybis(1-chloropropane)	45	7.343	7.323	(1.058)	17228	0.20000	0.185(a)	
14	2-Methylphenol	108	7.403	7.373	(1.067)	79019	1.00000	0.942(a)	
15	Acetophenone	105	7.524	7.484	(0.876)	22262	0.20000	0.189(a)	
16	N-Nitroso-di-n-propylamine	70	7.524	7.504	(1.084)	10004	0.20000	0.177(a)	
17	3&4-Methylphenol	108	7.625	7.584	(1.099)	74572	1.00000	0.885(a)	
18	Hexachloroethane	117	7.564	7.574	(1.090)	7579	0.20000	0.197(a)	
19	Nitrobenzene	77	7.735	7.685	(0.900)	24585	0.20000	0.132(a)	
20	Isophorone	82	8.027	8.017	(0.934)	24844	0.20000	0.172(a)	
21	2-Nitrophenol	139	8.138	8.118	(0.947)	47143	1.00000	0.908(a)	

2:48 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Report Date: 22-Mar-2018 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
22	2,4-Dimethylphenol	107	8.279	8.239	(0.964)	76316	1.00000	0.940	
23	bis(2-Chloroethoxy)methane	93	8.349	8.319	(0.972)	17636	0.20000	0.171(a)	
24	2,4-Dichlorophenol	162	8.551	8.470	(0.995)	67391	1.00000	0.903	
25	1,2,4-Trichlorobenzene	180	8.541	8.530	(0.994)	14561	0.20000	0.196(a)	
* 26	Naphthalene-D8	136	8.591	8.581	(1.000)	194567	0.80000	(a)	
27	Naphthalene	128	8.621	8.611	(1.004)	52290	0.20000	0.203	
28	4-Chloroaniline	127	8.823	8.732	(1.027)	16387	0.20000	0.164(aM)	M9
29	Hexachlorobutadiene	225	8.812	8.812	(1.026)	7406	0.20000	0.199(a)	
30	Caprolactam	113	9.291	9.222	(1.082)	3509	0.20000	0.175(aM)	M6
31	4-Chloro-3-Methylphenol	107	9.508	9.459	(1.107)	60900	1.00000	0.913(aQ)	
$ 32	2-Methylnaphthalene-D10	152	9.518	9.498	(1.108)	23036	0.20000	0.198(a)	
33	2-Methylnaphthalene	142	9.557	9.537	(1.112)	62784	0.20000	0.124(aQ)	
34	1-Methylnaphthalene	142	9.685	9.675	(1.127)	35988	0.20000	0.218	
35	Hexachlorocyclopentadiene	237	9.764	9.774	(0.894)	666	0.20000	0.248	
36	1,2,4,5-Tetrachlorobenzene	216	9.803	9.783	(0.897)	12129	0.20000	0.203	
$ 37	2,4-Dibromophenol	252	10.020	9.951	(0.917)	6145	0.20000	0.182(a)	
38	2,4,6-Trichlorophenol	196	10.000	9.970	(0.915)	36872	1.00000	0.899(a)	
39	2,4,5-Trichlorophenol	196	10.108	10.039	(0.925)	43730	1.00000	0.991(a)	
40	1,1'-Biphenyl	154	10.187	10.177	(0.932)	36140	0.20000	0.202	
41	2-Chloronaphthalene	164	10.207	10.187	(0.934)	9658	0.20000	0.196(a)	
42	2-Nitroaniline	65	10.433	10.364	(0.955)	5229	0.20000	0.166(a)	
43	Dimethyl Phthalate	163	10.632	10.621	(0.973)	159747	1.00000	0.970(a)	
44	2,6-Dinitrotoluene	165	10.719	10.697	(0.981)	6040	0.20000	0.159(aQ)	
45	Acenaphthylene	152	10.741	10.719	(0.983)	41966	0.20000	0.195(a)	
46	3-Nitroaniline	138	11.024	10.915	(1.009)	4266	0.20000	0.239	
* 47	Acenaphthene-D10	164	10.926	10.915	(1.000)	78173	0.80000	(a)	
48	Acenaphthene	153	10.970	10.948	(1.004)	27184	0.20000	0.196(a)	
49	2,4-Dinitrophenol	184	11.231	11.089	(1.028)	2654	1.00000	0.766(a)	
50	Dibenzofuran	168	11.220	11.198	(1.027)	34743	0.20000	0.192(a)	
51	2,4-Dinitrotoluene	165	11.296	11.242	(1.034)	6853	0.20000	0.150(a)	
52	4-Nitrophenol	139	11.471	11.275	(1.050)	12219	1.00000	0.784(aQ)	
53	2,3,4,6-Tetrachlorophenol	232	11.449	11.416	(1.048)	23997	1.00000	0.772(aH)	
54	Diethylphthalate	149	11.569	11.569	(1.059)	165759	1.00000	0.957(a)	
$ 55	Fluorene-D10	174	11.634	11.612	(1.065)	18285	0.20000	0.191(a)	
56	Fluorene	166	11.667	11.645	(1.068)	28002	0.20000	0.191(a)	
57	4-Chlorophenyl-phenylether	204	11.689	11.678	(1.070)	12391	0.20000	0.191(a)	
58	4-Nitroaniline	138	11.863	11.743	(1.086)	3863	0.20000	0.155(aQ)	
59	4,6-Dinitro-2-Methylphenol	198	11.863	11.798	(0.918)	11158	1.00000	0.988(a)	
60	N-Nitrosodiphenylamine	169	11.874	11.852	(0.919)	20794	0.20000	0.203	
61	4-Bromophenyl-phenylether	248	12.340	12.318	(0.955)	8150	0.20000	0.252	
62	Hexachlorobenzene	284	12.415	12.414	(0.961)	7856	0.20000	0.236	
63	Atrazine	200	12.617	12.607	(0.977)	4028	0.20000	0.190(a)	
64	Pentachlorophenol	266	12.756	12.703	(0.988)	10069	1.00000	0.981(a)	
* 65	Phenanthrene-D10	188	12.916	12.895	(1.000)	99559	0.80000	(a)	
66	Phenanthrene	178	12.938	12.916	(1.002)	32334	0.20000	0.200	
67	Anthracene	178	13.023	12.991	(1.008)	34542	0.20000	0.208	
68	Carbazole	167	13.301	13.247	(1.030)	25074	0.20000	0.192(a)	
69	Di-n-butylphthalate	149	13.760	13.760	(1.065)	268214	1.00000	1.07	
70	Fluoranthene	202	14.546	14.518	(1.126)	31581	0.20000	0.229	
$ 71	Pyrene-D10	212	14.818	14.790	(0.894)	15553	0.20000	0.216(a)	
72	Pyrene	202	14.837	14.809	(0.895)	32121	0.20000	0.244	
73	Butylbenzylphthalate	149	15.756	15.756	(0.951)	97602	1.00000	1.11	
74	Benzo(a)anthracene	228	16.563	16.535	(0.999)	14239	0.20000	0.215(H)	
75	3,3'-Dichlorobenzidine	252	16.591	16.544	(1.001)	2529	0.20000	0.175(a)	



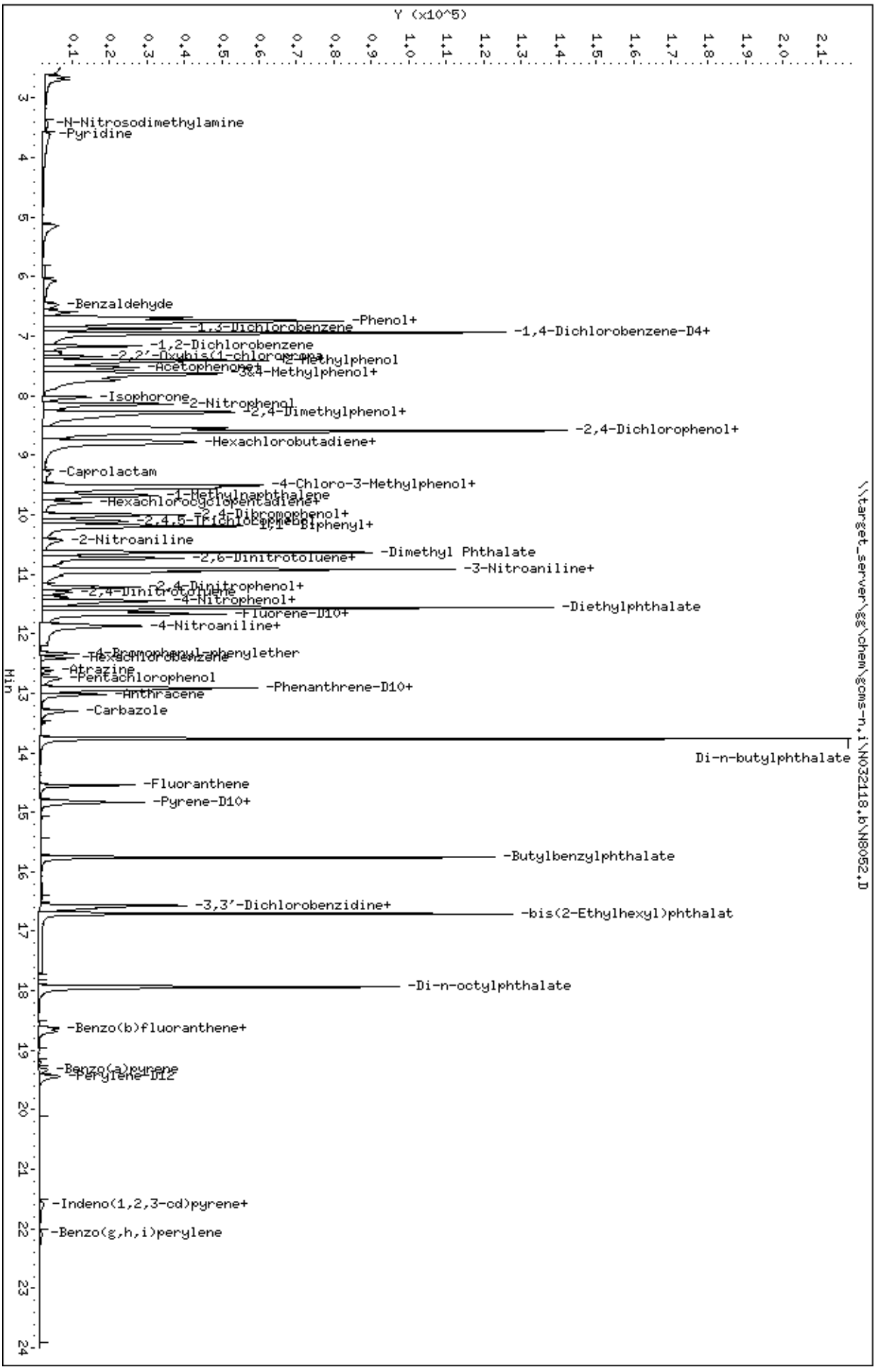
2:48 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Report Date: 22-Mar-2018 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.573	16.544	(1.000)	35939	0.80000	(a)	
	77 Chrysene	228	16.619	16.591	(1.003)	21037	0.20000	0.165(a)	
	78 bis(2-Ethylhexyl)phthalate	149	16.704	16.704	(1.008)	154258	1.00000	1.19	
	79 Di-n-octylphthalate	149	17.935	17.935	(1.082)	203737	1.00000	1.14	
	80 Benzo(b)fluoranthene	252	18.628	18.571	(0.959)	8588	0.20000	0.206	
	81 Benzo(k)fluoranthene	252	18.673	18.616	(0.961)	13260	0.20000	0.144(aH)	
	82 Benzo(a)pyrene	252	19.332	19.263	(0.995)	8113	0.20000	0.240	
*	83 Perylene-D12	264	19.434	19.400	(1.000)	19891	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.580	21.467	(1.302)	4049	0.20000	0.199(a)	
	86 Dibenzo(a,h)anthracene	278	21.592	21.501	(1.111)	3208	0.20000	0.218	
	87 Benzo(g,h,i)perylene	276	22.080	21.978	(1.136)	4825	0.20000	0.234	
M	88 Total PAHs	100				66710	3.60000	(a)	
M	324 Total Low PAHs	100				279102	1.40000	(a)	
M	325 Total High PAHs	100				110299	1.20000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\NO32118,b\N8052,D
Date : 21-MAR-2018 11:30
Client ID:
Sample Info: WG225136-2
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\NO32118,b\N8052,D
Y (x10^5)
Min
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Phenol+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-2-Methylphenol
-Acetophenone+
-3&4-Methylphenol+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol+
-2,4-Dichlorophenol+
-Hexachlorobutadiene+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol+
-2,4-Dinitrotoluene
-4-Nitrophenol+
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8053.D
Report Date: 22-Mar-2018 10:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8053.D
Lab Smp Id: WG225136-3
Inj Date : 21-MAR-2018 12:02 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225136-3
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 12:02 Cal File: N8053.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.633	2.591	(0.379)	14834	0.50000	0.399(a)	
	2 1,4-Dioxane	88	2.675	2.633	(0.386)	17845	0.50000	0.499(a)	
	3 N-Nitrosodimethylamine	74	3.315	3.158	(0.478)	17120	0.50000	0.380	
	4 Pyridine	79	3.420	3.168	(0.493)	30228	0.50000	0.392	
	5 Benzaldehyde	77	6.437	6.376	(0.927)	11633	0.50000	0.486	
	6 Phenol	94	6.659	6.618	(0.959)	220541	2.00000	2.01	
	7 Bis(2-Chloroethyl)ether	93	6.648	6.628	(0.958)	63140	0.50000	0.551	
	8 2-Chlorophenol	128	6.719	6.699	(0.968)	219917	2.00000	2.02	
	9 1,3-Dichlorobenzene	146	6.870	6.860	(0.990)	56890	0.50000	0.492	
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	63446	0.80000	(a)	
	11 1,4-Dichlorobenzene	146	6.960	6.950	(1.003)	60422	0.50000	0.508	
	12 1,2-Dichlorobenzene	146	7.162	7.151	(1.032)	56310	0.50000	0.501	
	13 2,2'-Oxybis(1-chloropropane)	45	7.333	7.323	(1.057)	46972	0.50000	0.492	
	14 2-Methylphenol	108	7.383	7.373	(1.064)	167751	2.00000	1.95	
	15 Acetophenone	105	7.504	7.484	(0.873)	56499	0.50000	0.465	
	16 N-Nitroso-di-n-propylamine	70	7.514	7.504	(1.083)	30403	0.50000	0.524	
	17 3&4-Methylphenol	108	7.605	7.584	(1.096)	181535	2.00000	2.10	
	18 Hexachloroethane	117	7.564	7.574	(1.090)	19467	0.50000	0.493	
	19 Nitrobenzene	77	7.715	7.685	(0.898)	54082	0.50000	0.479(Q)	
	20 Isophorone	82	8.017	8.017	(0.933)	71538	0.50000	0.482	
	21 2-Nitrophenol	139	8.128	8.118	(0.946)	106504	2.00000	1.99	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8053.D
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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.259	8.239	(0.961)	168850	2.00000	2.02	
	23 bis(2-Chloroethoxy)methane	93	8.339	8.319	(0.971)	53271	0.50000	0.502	
	24 2,4-Dichlorophenol	162	8.521	8.470	(0.992)	151750	2.00000	1.97	
	25 1,2,4-Trichlorobenzene	180	8.541	8.530	(0.994)	38631	0.50000	0.504	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	200290	0.80000	(a)	
	27 Naphthalene	128	8.611	8.611	(1.002)	136209	0.50000	0.515	
	28 4-Chloroaniline	127	8.792	8.732	(1.023)	46224	0.50000	0.449(a)	
	29 Hexachlorobutadiene	225	8.813	8.812	(1.026)	18999	0.50000	0.497	
	30 Caprolactam	113	9.242	9.222	(1.076)	10336	0.50000	0.430	
	31 4-Chloro-3-Methylphenol	107	9.479	9.459	(1.103)	137998	2.00000	2.01	
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	60380	0.50000	0.504(a)	
	33 2-Methylnaphthalene	142	9.547	9.537	(1.111)	127645	0.50000	0.503	
	34 1-Methylnaphthalene	142	9.675	9.675	(1.126)	89387	0.50000	0.527	
	35 Hexachlorocyclopentadiene	237	9.764	9.774	(0.894)	4182	0.50000	0.402	
	36 1,2,4,5-Tetrachlorobenzene	216	9.794	9.783	(0.896)	31473	0.50000	0.501	
$	37 2,4-Dibromophenol	252	9.981	9.951	(0.913)	17513	0.50000	0.493(a)	
	38 2,4,6-Trichlorophenol	196	9.981	9.970	(0.913)	84709	2.00000	1.96	
	39 2,4,5-Trichlorophenol	196	10.079	10.039	(0.922)	89088	2.00000	1.92	
	40 1,1'-Biphenyl	154	10.177	10.177	(0.931)	97056	0.50000	0.514	
	41 2-Chloronaphthalene	164	10.197	10.187	(0.933)	25702	0.50000	0.496	
	42 2-Nitroaniline	65	10.394	10.364	(0.951)	15376	0.50000	0.463	
	43 Dimethyl Phthalate	163	10.621	10.621	(0.972)	343791	2.00000	1.98	
	44 2,6-Dinitrotoluene	165	10.708	10.697	(0.980)	19163	0.50000	0.480	
	45 Acenaphthylene	152	10.730	10.719	(0.982)	114802	0.50000	0.507	
	46 3-Nitroaniline	138	10.981	10.915	(1.005)	13683	0.50000	0.498	
*	47 Acenaphthene-D10	164	10.926	10.915	(1.000)	82270	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.948	(1.003)	74566	0.50000	0.510	
	49 2,4-Dinitrophenol	184	11.155	11.089	(1.021)	14547	2.00000	1.53	
	50 Dibenzofuran	168	11.209	11.198	(1.026)	95005	0.50000	0.499	
	51 2,4-Dinitrotoluene	165	11.275	11.242	(1.032)	21359	0.50000	0.444	
	52 4-Nitrophenol	139	11.395	11.275	(1.043)	36280	2.00000	1.77	
	53 2,3,4,6-Tetrachlorophenol	232	11.427	11.416	(1.046)	57569	2.00000	1.76(H)	
	54 Diethylphthalate	149	11.558	11.569	(1.058)	360081	2.00000	1.98	
$	55 Fluorene-D10	174	11.623	11.612	(1.064)	50813	0.50000	0.505(a)	
	56 Fluorene	166	11.656	11.645	(1.067)	77250	0.50000	0.502	
	57 4-Chlorophenyl-phenylether	204	11.678	11.678	(1.069)	34442	0.50000	0.505	
	58 4-Nitroaniline	138	11.798	11.743	(1.080)	12729	0.50000	0.485(QM)	M6
	59 4,6-Dinitro-2-Methylphenol	198	11.830	11.798	(0.917)	29916	2.00000	1.75	
	60 N-Nitrosodiphenylamine	169	11.852	11.852	(0.918)	58843	0.50000	0.524	
	61 4-Bromophenyl-phenylether	248	12.329	12.318	(0.955)	17292	0.50000	0.488	
	62 Hexachlorobenzene	284	12.415	12.414	(0.962)	19138	0.50000	0.525	
	63 Atrazine	200	12.607	12.607	(0.977)	11324	0.50000	0.489	
	64 Pentachlorophenol	266	12.735	12.703	(0.987)	26369	2.00000	1.83	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	109026	0.80000	(a)	
	66 Phenanthrene	178	12.938	12.916	(1.002)	91848	0.50000	0.518	
	67 Anthracene	178	13.013	12.991	(1.008)	93467	0.50000	0.515	
	68 Carbazole	167	13.279	13.247	(1.029)	69199	0.50000	0.483	
	69 Di-n-butylphthalate	149	13.760	13.760	(1.066)	577314	2.00000	2.10	
	70 Fluoranthene	202	14.537	14.518	(1.126)	76498	0.50000	0.507	
$	71 Pyrene-D10	212	14.809	14.790	(0.894)	43272	0.50000	0.541(a)	
	72 Pyrene	202	14.828	14.809	(0.895)	81630	0.50000	0.559	
	73 Butylbenzylphthalate	149	15.756	15.756	(0.951)	212529	2.00000	2.18	
	74 Benzo(a)anthracene	228	16.554	16.535	(0.999)	36176	0.50000	0.492(H)	
	75 3,3'-Dichlorobenzidine	252	16.582	16.544	(1.001)	8093	0.50000	0.504	



2:48 pm, Mar 26, 2018

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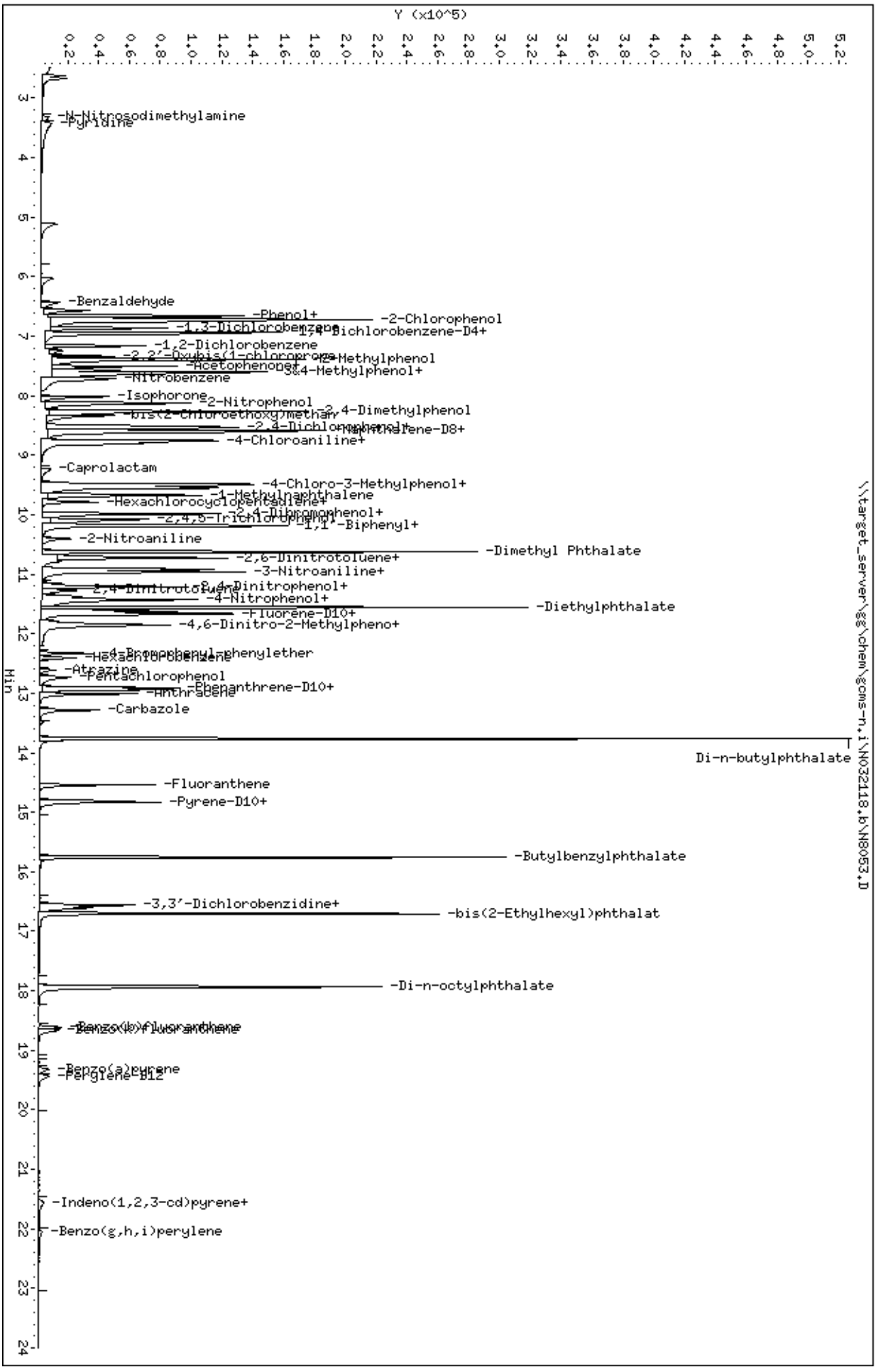
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.563	16.544	(1.000)	39883	0.80000	(a)	
	77 Chrysene	228	16.610	16.591	(1.003)	48235	0.50000	0.525	
	78 bis(2-Ethylhexyl)phthalate	149	16.704	16.704	(1.008)	318659	2.00000	2.22	
	79 Di-n-octylphthalate	149	17.935	17.935	(1.083)	437642	2.00000	2.20	
	80 Benzo(b)fluoranthene	252	18.605	18.571	(0.957)	22998	0.50000	0.503	
	81 Benzo(k)fluoranthene	252	18.662	18.616	(0.960)	30578	0.50000	0.475(H)	
	82 Benzo(a)pyrene	252	19.320	19.263	(0.994)	18758	0.50000	0.505	
*	83 Perylene-D12	264	19.434	19.400	(1.000)	21827	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.546	21.467	(1.301)	10543	0.50000	0.468	
	86 Dibenzo(a,h)anthracene	278	21.569	21.501	(1.110)	7125	0.50000	0.441	
	87 Benzo(g,h,i)perylene	276	22.057	21.978	(1.135)	10066	0.50000	0.444	
M	88 Total PAHs	100				163572	9.00000	(a)	
M	324 Total Low PAHs	100				715787	3.50000	(a)	
M	325 Total High PAHs	100				268422	3.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N032118,b\N8053,D
Date : 21-MAR-2018 12:02
Client ID:
Sample Info: WG225136-3
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032118,b\N8053,D
Y (x10^5)
Min
-N-Nitrosodimethylamine
-Pyridine
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa
-2-Methylphenol
-Acetophenone
3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol
Naphthalene-D8+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol+
2,4-Dinitrotoluene
-4-Nitrophenol+
-Diethylphthalate
-Fluorene-D10+
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8054.D
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Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8054.D
Lab Smp Id: WG225136-5
Inj Date : 21-MAR-2018 12:34 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225136-5
Misc Info :
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 12:34 Cal File: N8054.D
Als bottle: 5 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.602	2.591	(0.375)	294925	7.00000	7.68	
	2 1,4-Dioxane	88	2.644	2.633	(0.382)	278084	7.00000	7.54	
	3 N-Nitrosodimethylamine	74	3.168	3.158	(0.457)	391194	7.00000	8.41	
	4 Pyridine	79	3.189	3.168	(0.460)	604783	7.00000	7.60	
	5 Benzaldehyde	77	6.377	6.376	(0.920)	189262	7.00000	7.67	
	6 Phenol	94	6.628	6.618	(0.956)	819618	7.00000	7.24	
	7 Bis(2-Chloroethyl)ether	93	6.628	6.628	(0.956)	687555	7.00000	7.02	
	8 2-Chlorophenol	128	6.699	6.699	(0.967)	804923	7.00000	7.18	
	9 1,3-Dichlorobenzene	146	6.860	6.860	(0.990)	866755	7.00000	7.27	
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.930	(1.000)	65457	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.950	6.950	(1.003)	892178	7.00000	7.27	
	12 1,2-Dichlorobenzene	146	7.152	7.151	(1.032)	846568	7.00000	7.30	
	13 2,2'-Oxybis(1-chloropropane)	45	7.323	7.323	(1.057)	722362	7.00000	7.34	
	14 2-Methylphenol	108	7.373	7.373	(1.064)	661100	7.00000	7.43	
	15 Acetophenone	105	7.474	7.484	(0.870)	937437	7.00000	7.48	
	16 N-Nitroso-di-n-propylamine	70	7.494	7.504	(1.081)	435797	7.00000	7.28	
	17 3&4-Methylphenol	108	7.594	7.584	(1.096)	652347	7.00000	7.31	
	18 Hexachloroethane	117	7.564	7.574	(1.091)	293945	7.00000	7.22	
	19 Nitrobenzene	77	7.685	7.685	(0.895)	660156	7.00000	7.52	
	20 Isophorone	82	8.007	8.017	(0.932)	1167432	7.00000	7.62	
	21 2-Nitrophenol	139	8.118	8.118	(0.945)	403817	7.00000	7.32	

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							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.249	8.239	(0.960)	629798	7.00000	7.30	
	23 bis(2-Chloroethoxy)methane	93	8.319	8.319	(0.968)	822978	7.00000	7.51	
	24 2,4-Dichlorophenol	162	8.480	8.470	(0.987)	585632	7.00000	7.38	
	25 1,2,4-Trichlorobenzene	180	8.531	8.530	(0.993)	567131	7.00000	7.17	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	206735	0.80000	(a)	
	27 Naphthalene	128	8.611	8.611	(1.002)	1954477	7.00000	7.15	
	28 4-Chloroaniline	127	8.742	8.732	(1.018)	831160	7.00000	7.83	
	29 Hexachlorobutadiene	225	8.813	8.812	(1.026)	283007	7.00000	7.17	
	30 Caprolactam	113	9.193	9.222	(1.070)	195265	7.00000	7.20	
	31 4-Chloro-3-Methylphenol	107	9.459	9.459	(1.101)	518942	7.00000	7.32	
$	32 2-Methylnaphthalene-D10	152	9.498	9.498	(1.106)	893561	7.00000	7.23	
	33 2-Methylnaphthalene	142	9.538	9.537	(1.110)	1328962	7.00000	7.47	
	34 1-Methylnaphthalene	142	9.665	9.675	(1.125)	1218070	7.00000	6.95	
	35 Hexachlorocyclopentadiene	237	9.764	9.774	(0.895)	183870	7.00000	7.15	
	36 1,2,4,5-Tetrachlorobenzene	216	9.784	9.783	(0.896)	477789	7.00000	7.07	
$	37 2,4-Dibromophenol	252	9.951	9.951	(0.912)	278560	7.00000	7.29(Q)	
	38 2,4,6-Trichlorophenol	196	9.971	9.970	(0.913)	335598	7.00000	7.23	
	39 2,4,5-Trichlorophenol	196	10.049	10.039	(0.921)	359796	7.00000	7.20	
	40 1,1'-Biphenyl	154	10.177	10.177	(0.932)	1433961	7.00000	7.06	
	41 2-Chloronaphthalene	164	10.187	10.187	(0.933)	399257	7.00000	7.17	
	42 2-Nitroaniline	65	10.354	10.364	(0.949)	271613	7.00000	7.61	
	43 Dimethyl Phthalate	163	10.621	10.621	(0.973)	1355296	7.00000	7.27	
	44 2,6-Dinitrotoluene	165	10.686	10.697	(0.979)	319638	7.00000	7.45	
	45 Acenaphthylene	152	10.730	10.719	(0.983)	1756558	7.00000	7.21	
	46 3-Nitroaniline	138	10.915	10.915	(1.000)	273483	7.00000	7.28	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	88480	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.948	(1.004)	1121056	7.00000	7.12	
	49 2,4-Dinitrophenol	184	11.089	11.089	(1.016)	124575	7.00000	7.46	
	50 Dibenzofuran	168	11.198	11.198	(1.026)	1472046	7.00000	7.18	
	51 2,4-Dinitrotoluene	165	11.242	11.242	(1.030)	409052	7.00000	7.92	
	52 4-Nitrophenol	139	11.307	11.275	(1.036)	195294	7.00000	7.40(Q)	
	53 2,3,4,6-Tetrachlorophenol	232	11.416	11.416	(1.046)	272854	7.00000	7.76(H)	
	54 Diethylphthalate	149	11.558	11.569	(1.059)	1420204	7.00000	7.25	
$	55 Fluorene-D10	174	11.612	11.612	(1.064)	772706	7.00000	7.14	
	56 Fluorene	166	11.656	11.645	(1.068)	1200207	7.00000	7.25	
	57 4-Chlorophenyl-phenylether	204	11.678	11.678	(1.070)	529522	7.00000	7.22	
	58 4-Nitroaniline	138	11.743	11.743	(1.076)	220536	7.00000	7.82(Q)	
	59 4,6-Dinitro-2-Methylphenol	198	11.798	11.798	(0.915)	178924	7.00000	7.04	
	60 N-Nitrosodiphenylamine	169	11.841	11.852	(0.918)	931796	7.00000	7.05	
	61 4-Bromophenyl-phenylether	248	12.319	12.318	(0.955)	279868	7.00000	6.71	
	62 Hexachlorobenzene	284	12.415	12.414	(0.963)	284450	7.00000	6.63	
	63 Atrazine	200	12.596	12.607	(0.977)	196877	7.00000	7.22	
	64 Pentachlorophenol	266	12.714	12.703	(0.986)	133904	7.00000	6.65	
*	65 Phenanthrene-D10	188	12.895	12.895	(1.000)	128335	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.916	(1.002)	1481614	7.00000	7.10	
	67 Anthracene	178	13.002	12.991	(1.008)	1536436	7.00000	7.19	
	68 Carbazole	167	13.247	13.247	(1.027)	1248322	7.00000	7.41	
	69 Di-n-butylphthalate	149	13.760	13.760	(1.067)	2282574	7.00000	7.05	
	70 Fluoranthene	202	14.527	14.518	(1.127)	1249776	7.00000	7.03	
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	732950	7.00000	7.15	
	72 Pyrene	202	14.818	14.809	(0.895)	1283966	7.00000	6.86	
	73 Butylbenzylphthalate	149	15.756	15.756	(0.952)	875324	7.00000	7.02	
	74 Benzo(a)anthracene	228	16.535	16.535	(0.999)	673675	7.00000	7.14(H)	
	75 3,3'-Dichlorobenzidine	252	16.544	16.544	(0.999)	149138	7.00000	7.25	

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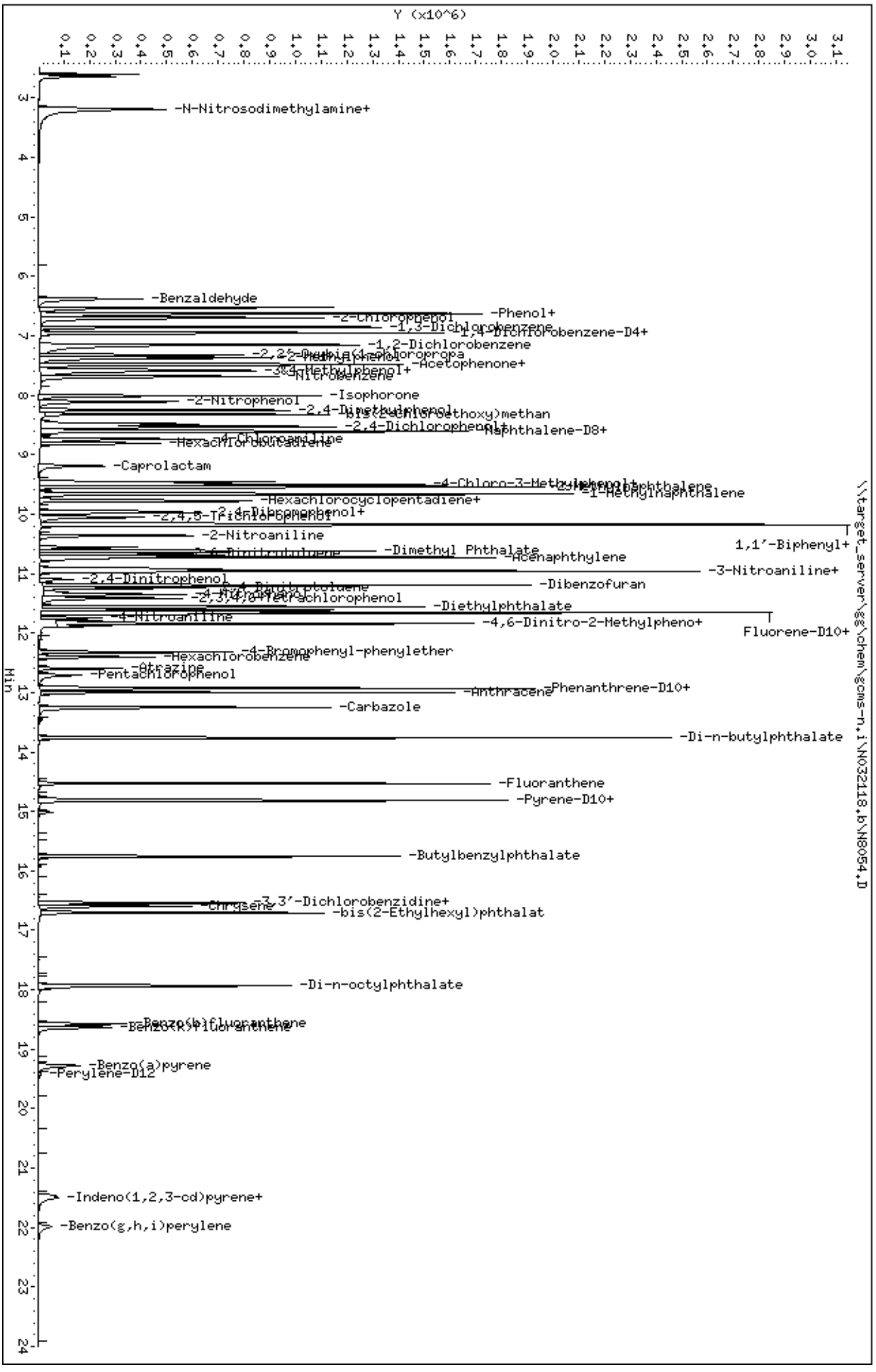
Report Date: 22-Mar-2018 10:54

		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.554	16.544	(1.000)	51141	0.80000	(a)	
	77 Chrysene	228	16.591	16.591	(1.002)	657070	7.00000	7.23	
	78 bis(2-Ethylhexyl)phthalate	149	16.704	16.704	(1.009)	1233326	7.00000	6.69	
	79 Di-n-octylphthalate	149	17.935	17.935	(1.083)	1678341	7.00000	6.58	
	80 Benzo(b)fluoranthene	252	18.571	18.571	(0.956)	413071	7.00000	7.48	
	81 Benzo(k)fluoranthene	252	18.628	18.616	(0.959)	426654	7.00000	7.14(H)	
	82 Benzo(a)pyrene	252	19.275	19.263	(0.992)	308235	7.00000	6.88	
*	83 Perylene-D12	264	19.423	19.400	(1.000)	26359	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.467	21.467	(1.297)	206875	7.00000	7.16	
	86 Dibenzo(a,h)anthracene	278	21.501	21.501	(1.107)	144973	7.00000	7.43	
	87 Benzo(g,h,i)perylene	276	21.978	21.978	(1.132)	200151	7.00000	7.32	
M	88 Total PAHs	100				2464821	126.000	(a)	
M	324 Total Low PAHs	100				10379310	49.0000	(a)	
M	325 Total High PAHs	100				4317695	42.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Date : 21-MAR-2018 12:34
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Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032118,b\N8054,D
Y (x10^6)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Acetophenone+
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-2,4-Dichlorophenol+
Naphthalene-D8+
-Caprolactam
-Hexachlorocyclopentadiene+
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-Acenaphthylene
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-Diethylphthalate
-4-Nitroaniline
-4,6-Dinitro-2-Methylpheno+
Fluorene-D10+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(a)pyrene
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8055.D
Report Date: 22-Mar-2018 10:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8055.D
Lab Smp Id: WG225136-6
Inj Date : 21-MAR-2018 13:06 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225136-6
Misc Info :
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Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:06 Cal File: N8055.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.602	2.591	(0.375)	415993	10.0000	11.2	
	2 1,4-Dioxane	88	2.644	2.633	(0.382)	360006	10.0000	10.1	
	3 N-Nitrosodimethylamine	74	3.168	3.158	(0.457)	463204	10.0000	10.2	
	4 Pyridine	79	3.179	3.168	(0.459)	878370	10.0000	11.4	
	5 Benzaldehyde	77	6.377	6.376	(0.920)	253783	10.0000	10.6	
	6 Phenol	94	6.628	6.618	(0.956)	1124886	10.0000	10.2	
	7 Bis(2-Chloroethyl)ether	93	6.628	6.628	(0.956)	986062	10.0000	10.4	
	8 2-Chlorophenol	128	6.699	6.699	(0.967)	1099593	10.0000	10.1	
	9 1,3-Dichlorobenzene	146	6.860	6.860	(0.990)	1182945	10.0000	10.2	
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.930	(1.000)	63530	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.950	6.950	(1.003)	1204210	10.0000	10.1	
	12 1,2-Dichlorobenzene	146	7.152	7.151	(1.032)	1144389	10.0000	10.2	
	13 2,2'-Oxybis(1-chloropropane)	45	7.323	7.323	(1.057)	986487	10.0000	10.3	
	14 2-Methylphenol	108	7.373	7.373	(1.064)	892160	10.0000	10.3	
	15 Acetophenone	105	7.474	7.484	(0.870)	1270647	10.0000	10.2	
	16 N-Nitroso-di-n-propylamine	70	7.504	7.504	(1.083)	595010	10.0000	10.2	
	17 3&4-Methylphenol	108	7.584	7.584	(1.094)	884209	10.0000	10.2	
	18 Hexachloroethane	117	7.574	7.574	(1.093)	403303	10.0000	10.2	
	19 Nitrobenzene	77	7.685	7.685	(0.895)	887227	10.0000	10.2	
	20 Isophorone	82	8.007	8.017	(0.932)	1577487	10.0000	10.4	
	21 2-Nitrophenol	139	8.118	8.118	(0.945)	558104	10.0000	10.2	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8055.D
Report Date: 22-Mar-2018 10:54

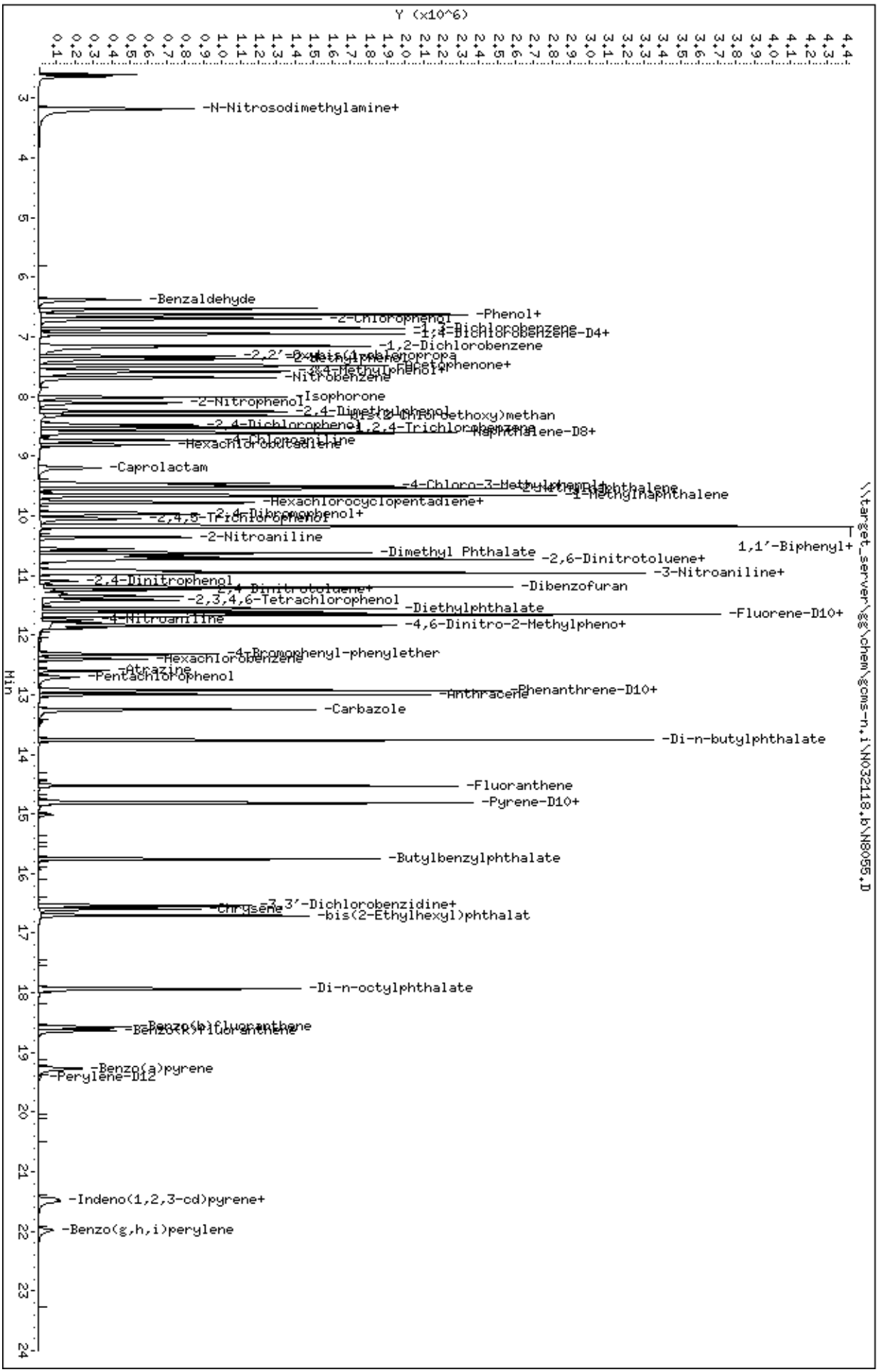
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.249	8.239	(0.960)	858259	10.0000	10.0	
	23 bis(2-Chloroethoxy)methane	93	8.319	8.319	(0.968)	1115568	10.0000	10.2	
	24 2,4-Dichlorophenol	162	8.480	8.470	(0.987)	800095	10.0000	10.2	
	25 1,2,4-Trichlorobenzene	180	8.531	8.530	(0.993)	773578	10.0000	9.86	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	205108	0.80000	(a)	
	27 Naphthalene	128	8.611	8.611	(1.002)	2637771	10.0000	9.73	
	28 4-Chloroaniline	127	8.732	8.732	(1.016)	1112323	10.0000	10.6	
	29 Hexachlorobutadiene	225	8.813	8.812	(1.026)	393334	10.0000	10.0	
	30 Caprolactam	113	9.203	9.222	(1.071)	267527	10.0000	9.93	
	31 4-Chloro-3-Methylphenol	107	9.459	9.459	(1.101)	707914	10.0000	10.1	
$	32 2-Methylnaphthalene-D10	152	9.498	9.498	(1.106)	1200208	10.0000	9.78	
	33 2-Methylnaphthalene	142	9.547	9.537	(1.111)	1786939	10.0000	10.2	
	34 1-Methylnaphthalene	142	9.665	9.675	(1.125)	1638528	10.0000	9.43	
	35 Hexachlorocyclopentadiene	237	9.764	9.774	(0.895)	261473	10.0000	9.93	
	36 1,2,4,5-Tetrachlorobenzene	216	9.784	9.783	(0.896)	646561	10.0000	9.87	
$	37 2,4-Dibromophenol	252	9.951	9.951	(0.912)	377802	10.0000	10.2	
	38 2,4,6-Trichlorophenol	196	9.971	9.970	(0.913)	460087	10.0000	10.2	
	39 2,4,5-Trichlorophenol	196	10.049	10.039	(0.921)	491194	10.0000	10.1	
	40 1,1'-Biphenyl	154	10.177	10.177	(0.932)	1926158	10.0000	9.78	
	41 2-Chloronaphthalene	164	10.187	10.187	(0.933)	537360	10.0000	9.94	
	42 2-Nitroaniline	65	10.354	10.364	(0.949)	360435	10.0000	10.4	
	43 Dimethyl Phthalate	163	10.621	10.621	(0.973)	1824238	10.0000	10.1	
	44 2,6-Dinitrotoluene	165	10.686	10.697	(0.979)	436598	10.0000	10.5	
	45 Acenaphthylene	152	10.730	10.719	(0.983)	2362600	10.0000	10.0	
	46 3-Nitroaniline	138	10.915	10.915	(1.000)	344289	10.0000	9.42	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	85817	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.948	(1.004)	1513813	10.0000	9.92	
	49 2,4-Dinitrophenol	184	11.089	11.089	(1.016)	167232	10.0000	9.69	
	50 Dibenzofuran	168	11.198	11.198	(1.026)	1973467	10.0000	9.93	
	51 2,4-Dinitrotoluene	165	11.242	11.242	(1.030)	542086	10.0000	10.8	
	52 4-Nitrophenol	139	11.296	11.275	(1.035)	253457	10.0000	9.54	
	53 2,3,4,6-Tetrachlorophenol	232	11.416	11.416	(1.046)	366322	10.0000	10.7(H)	
	54 Diethylphthalate	149	11.569	11.569	(1.060)	1950245	10.0000	10.2	
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	1046926	10.0000	9.98	
	56 Fluorene	166	11.656	11.645	(1.068)	1601409	10.0000	9.97	
	57 4-Chlorophenyl-phenylether	204	11.678	11.678	(1.070)	707239	10.0000	9.94	
	58 4-Nitroaniline	138	11.743	11.743	(1.076)	274059	10.0000	10.0	
	59 4,6-Dinitro-2-Methylphenol	198	11.798	11.798	(0.915)	243058	10.0000	9.73	
	60 N-Nitrosodiphenylamine	169	11.852	11.852	(0.919)	1249447	10.0000	9.80	
	61 4-Bromophenyl-phenylether	248	12.319	12.318	(0.955)	374703	10.0000	9.31	
	62 Hexachlorobenzene	284	12.415	12.414	(0.963)	389949	10.0000	9.42	
	63 Atrazine	200	12.596	12.607	(0.977)	263060	10.0000	10.0	
	64 Pentachlorophenol	266	12.714	12.703	(0.986)	189656	10.0000	9.58	
*	65 Phenanthrene-D10	188	12.895	12.895	(1.000)	123828	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.916	(1.002)	1944626	10.0000	9.65	
	67 Anthracene	178	13.002	12.991	(1.008)	2005029	10.0000	9.73	
	68 Carbazole	167	13.247	13.247	(1.027)	1626783	10.0000	10.0	
	69 Di-n-butylphthalate	149	13.760	13.760	(1.067)	3047999	10.0000	9.76	
	70 Fluoranthene	202	14.527	14.518	(1.127)	1616929	10.0000	9.43	
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	961184	10.0000	9.33	
	72 Pyrene	202	14.818	14.809	(0.895)	1664015	10.0000	8.85	
	73 Butylbenzylphthalate	149	15.756	15.756	(0.952)	1152200	10.0000	9.20	
	74 Benzo(a)anthracene	228	16.535	16.535	(0.999)	913377	10.0000	9.64(H)	
	75 3,3'-Dichlorobenzidine	252	16.544	16.544	(0.999)	209864	10.0000	10.2	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8055.D
Report Date: 22-Mar-2018 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.554	16.544	(1.000)	51360	0.80000	(a)	
	77 Chrysene	228	16.591	16.591	(1.002)	925951	10.0000	10.2	
	78 bis(2-Ethylhexyl)phthalate	149	16.704	16.704	(1.009)	1670180	10.0000	9.03	
	79 Di-n-octylphthalate	149	17.935	17.935	(1.083)	2366758	10.0000	9.24	
	80 Benzo(b)fluoranthene	252	18.571	18.571	(0.957)	558617	10.0000	9.51	
	81 Benzo(k)fluoranthene	252	18.628	18.616	(0.960)	662441	10.0000	10.5(H)	
	82 Benzo(a)pyrene	252	19.275	19.263	(0.993)	456224	10.0000	9.57	
*	83 Perylene-D12	264	19.411	19.400	(1.000)	28025	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.455	21.467	(1.296)	313890	10.0000	10.8	
	86 Dibenzo(a,h)anthracene	278	21.501	21.501	(1.108)	224021	10.0000	10.8	
	87 Benzo(g,h,i)perylene	276	21.978	21.978	(1.132)	297431	10.0000	10.2	
M	88 Total PAHs	100				3470907	180.000	(a)	
M	324 Total Low PAHs	100				13852187	70.0000	(a)	
M	325 Total High PAHs	100				5800517	60.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.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Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032118,b\N8055,D
Y (x10^6)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-2-Chlorophenol
-Phenol+
-1,4-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Nitrobenzene
-2-Nitrophenol
-Isophorone
-2,4-Dimethylphenol
-2,4-Dichlorophenol
-1,2,4-Trichlorobenzene
-Naphthalene-D8+
-Hexachlorobutadiene
-Caprolactam
-Hexachlorocyclopentadiene+
-2,4,5-Trichlorophenol
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline
-4,6-Dinitro-2-Methylpheno+
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Anthracene
-Phenanthrene-D10+
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8056.D
Report Date: 22-Mar-2018 10:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8056.D
Lab Smp Id: WG225136-7
Inj Date : 21-MAR-2018 13:37 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225136-7
Misc Info :
Comment :
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Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	2.591	2.591	(0.374)	580476	15.0000	15.8(A)	
	2 1,4-Dioxane	88	2.633	2.633	(0.380)	532911	15.0000	15.1(A)	
	3 N-Nitrosodimethylamine	74	3.158	3.158	(0.456)	699937	15.0000	15.7(A)	
	4 Pyridine	79	3.168	3.168	(0.457)	1178284	15.0000	15.5(A)	
	5 Benzaldehyde	77	6.376	6.376	(0.920)	352990	15.0000	15.0	
	6 Phenol	94	6.618	6.618	(0.955)	1593899	15.0000	14.7	
	7 Bis(2-Chloroethyl)ether	93	6.628	6.628	(0.956)	1362092	15.0000	14.7	
	8 2-Chlorophenol	128	6.699	6.699	(0.967)	1592512	15.0000	14.8	
	9 1,3-Dichlorobenzene	146	6.860	6.860	(0.990)	1692604	15.0000	14.8	
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.930	(1.000)	62586	0.80000	(aQ)	
	11 1,4-Dichlorobenzene	146	6.950	6.950	(1.003)	1734321	15.0000	14.8	
	12 1,2-Dichlorobenzene	146	7.151	7.151	(1.032)	1639874	15.0000	14.8	
	13 2,2'-Oxybis(1-chloropropane)	45	7.323	7.323	(1.057)	1411786	15.0000	15.0	
	14 2-Methylphenol	108	7.373	7.373	(1.064)	1294958	15.0000	15.2(A)	
	15 Acetophenone	105	7.484	7.484	(0.871)	1855629	15.0000	15.1(A)	
	16 N-Nitroso-di-n-propylamine	70	7.504	7.504	(1.083)	841312	15.0000	14.7	
	17 3&4-Methylphenol	108	7.584	7.584	(1.094)	1290224	15.0000	15.1(A)	
	18 Hexachloroethane	117	7.574	7.574	(1.093)	583426	15.0000	15.0	
	19 Nitrobenzene	77	7.685	7.685	(0.895)	1241158	15.0000	14.6	
	20 Isophorone	82	8.017	8.017	(0.933)	2306818	15.0000	15.3(A)	
	21 2-Nitrophenol	139	8.118	8.118	(0.945)	819602	15.0000	15.1(A)	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8056.D
Report Date: 22-Mar-2018 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 2,4-Dimethylphenol	107	8.239	8.239	(0.959)	1246092	15.0000	14.7	
	23 bis(2-Chloroethoxy)methane	93	8.319	8.319	(0.968)	1608026	15.0000	14.9	
	24 2,4-Dichlorophenol	162	8.470	8.470	(0.986)	1180735	15.0000	15.2(A)	
	25 1,2,4-Trichlorobenzene	180	8.530	8.530	(0.993)	1140557	15.0000	14.7	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	203110	0.80000	(a)	
	27 Naphthalene	128	8.611	8.611	(1.002)	3771481	15.0000	14.0	
	28 4-Chloroaniline	127	8.732	8.732	(1.016)	1640631	15.0000	15.7(A)	
	29 Hexachlorobutadiene	225	8.812	8.812	(1.026)	563469	15.0000	14.5	
	30 Caprolactam	113	9.222	9.222	(1.074)	399285	15.0000	15.0	
	31 4-Chloro-3-Methylphenol	107	9.459	9.459	(1.101)	1051159	15.0000	15.1(A)	
$	32 2-Methylnaphthalene-D10	152	9.498	9.498	(1.106)	1732777	15.0000	14.3	
	33 2-Methylnaphthalene	142	9.547	9.537	(1.111)	2509398	15.0000	14.6	
	34 1-Methylnaphthalene	142	9.675	9.675	(1.126)	2398092	15.0000	13.9	
	35 Hexachlorocyclopentadiene	237	9.774	9.774	(1.000)	432270	15.0000	15.0(A)	
	36 1,2,4,5-Tetrachlorobenzene	216	9.783	9.783	(1.000)	947673	15.0000	14.8	
$	37 2,4-Dibromophenol	252	9.951	9.951	(1.000)	564205	15.0000	15.6	
	38 2,4,6-Trichlorophenol	196	9.970	9.970	(1.000)	679032	15.0000	15.4(A)	
	39 2,4,5-Trichlorophenol	196	10.039	10.039	(1.000)	695449	15.0000	14.7	
	40 1,1'-Biphenyl	154	10.177	10.177	(1.000)	2760268	15.0000	14.3	
	41 2-Chloronaphthalene	164	10.187	10.187	(1.000)	783563	15.0000	14.8	
	42 2-Nitroaniline	65	10.364	10.364	(1.000)	559111	15.0000	16.5(A)	
	43 Dimethyl Phthalate	163	10.621	10.621	(1.000)	2648820	15.0000	15.0	
	44 2,6-Dinitrotoluene	165	10.697	10.697	(1.000)	666942	15.0000	16.4(A)	
	45 Acenaphthylene	152	10.730	10.719	(1.000)	3377435	15.0000	14.6	
	46 3-Nitroaniline	138	10.915	10.915	(1.000)	546495	15.0000	15.2(A)	
*	47 Acenaphthene-D10	164	10.926	10.915	(1.000)	83866	0.80000	(aM)	M6
	48 Acenaphthene	153	10.969	10.948	(1.000)	2197570	15.0000	14.7	
	49 2,4-Dinitrophenol	184	11.089	11.089	(1.000)	301889	15.0000	15.0(A)	
	50 Dibenzofuran	168	11.198	11.198	(1.000)	2909524	15.0000	15.0	
	51 2,4-Dinitrotoluene	165	11.242	11.242	(1.000)	819623	15.0000	16.7(A)	
	52 4-Nitrophenol	139	11.275	11.275	(1.000)	433937	15.0000	15.1(A)	
	53 2,3,4,6-Tetrachlorophenol	232	11.416	11.416	(1.000)	569401	15.0000	17.1(A)	
	54 Diethylphthalate	149	11.569	11.569	(1.000)	2806213	15.0000	15.1(A)	
$	55 Fluorene-D10	174	11.623	11.612	(1.000)	1561602	15.0000	15.2(A)	
	56 Fluorene	166	11.656	11.645	(1.000)	2330390	15.0000	14.8	
	57 4-Chlorophenyl-phenylether	204	11.678	11.678	(1.000)	1042511	15.0000	15.0	
	58 4-Nitroaniline	138	11.743	11.743	(1.000)	454502	15.0000	17.0(A)	
	59 4,6-Dinitro-2-Methylphenol	198	11.798	11.798	(0.915)	400339	15.0000	15.2(A)	
	60 N-Nitrosodiphenylamine	169	11.852	11.852	(0.919)	1872177	15.0000	14.2	
	61 4-Bromophenyl-phenylether	248	12.318	12.318	(0.955)	567020	15.0000	13.6	
	62 Hexachlorobenzene	284	12.414	12.414	(0.963)	588376	15.0000	13.8	
	63 Atrazine	200	12.607	12.607	(0.978)	407256	15.0000	15.0	
	64 Pentachlorophenol	266	12.703	12.703	(0.985)	318803	15.0000	15.4(A)	
*	65 Phenanthrene-D10	188	12.895	12.895	(1.000)	128004	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.916	(1.002)	2975314	15.0000	14.3	
	67 Anthracene	178	13.002	12.991	(1.008)	2928809	15.0000	13.7	
	68 Carbazole	167	13.247	13.247	(1.027)	2534791	15.0000	15.1(A)	
	69 Di-n-butylphthalate	149	13.760	13.760	(1.067)	4302756	15.0000	13.3	
	70 Fluoranthene	202	14.527	14.518	(1.127)	2366616	15.0000	13.4	
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	1486353	15.0000	13.9(A)	
	72 Pyrene	202	14.827	14.809	(0.896)	2557987	15.0000	13.1	
	73 Butylbenzylphthalate	149	15.756	15.756	(0.952)	1769524	15.0000	13.6	
	74 Benzo(a)anthracene	228	16.544	16.535	(0.999)	1430375	15.0000	14.6	
	75 3,3'-Dichlorobenzidine	252	16.544	16.544	(0.999)	285776	15.0000	13.4	



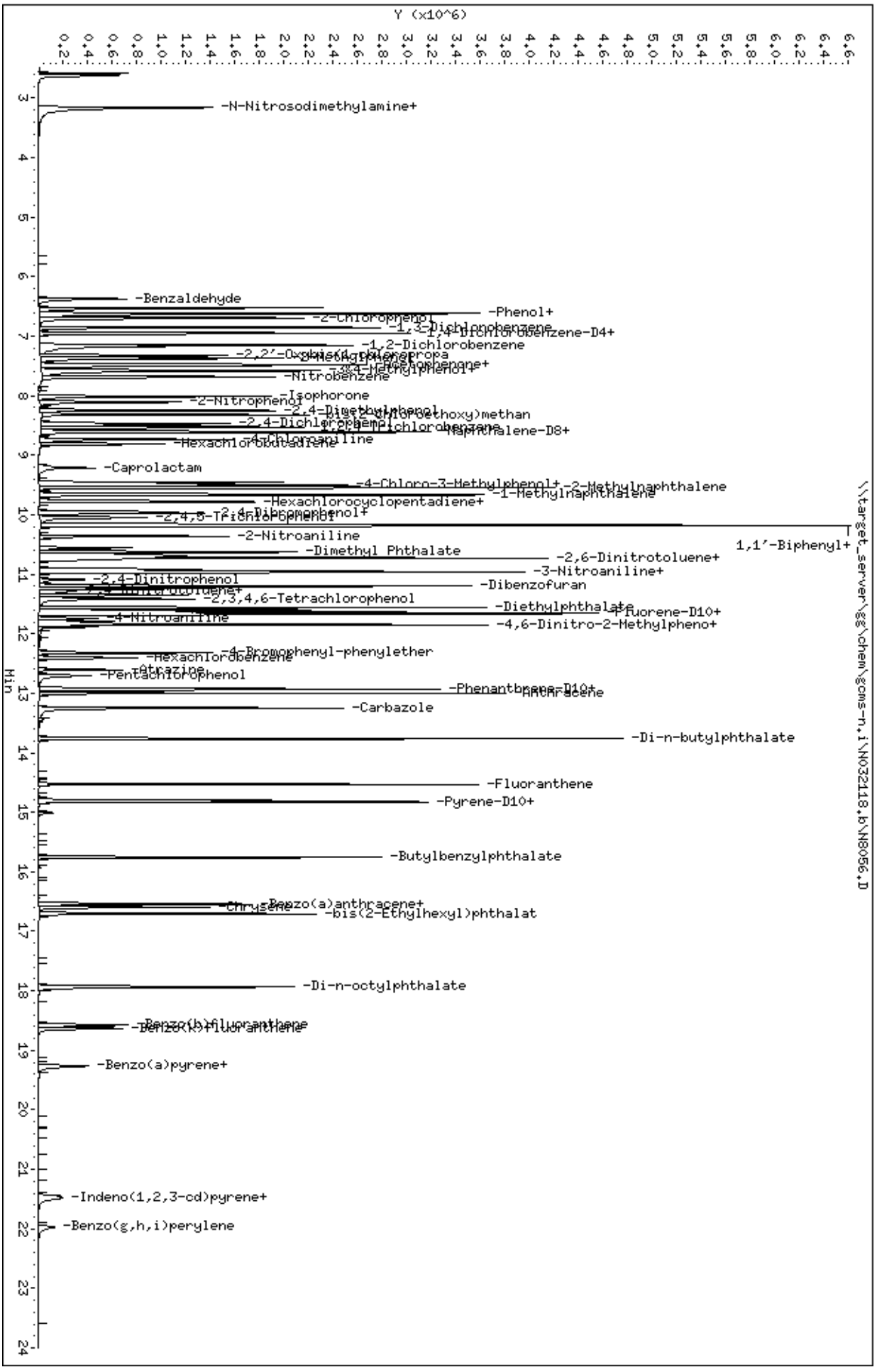
2:48 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8056.D
Report Date: 22-Mar-2018 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	76 Chrysene-D12	240	16.554	16.544	(1.000)	53183	0.80000	(a)	
	77 Chrysene	228	16.601	16.591	(1.003)	1376317	15.0000	14.7	
	78 bis(2-Ethylhexyl)phthalate	149	16.704	16.704	(1.009)	2507455	15.0000	13.1	
	79 Di-n-octylphthalate	149	17.935	17.935	(1.083)	3491770	15.0000	13.2	
	80 Benzo(b)fluoranthene	252	18.571	18.571	(0.957)	921425	15.0000	15.7(A)	
	81 Benzo(k)fluoranthene	252	18.628	18.616	(0.960)	914672	15.0000	14.6(H)	
	82 Benzo(a)pyrene	252	19.263	19.263	(0.992)	696127	15.0000	14.6	
*	83 Perylene-D12	264	19.411	19.400	(1.000)	27986	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.455	21.467	(1.296)	474534	15.0000	15.8(A)	
	86 Dibenzo(a,h)anthracene	278	21.489	21.501	(1.107)	337556	15.0000	16.3(A)	
	87 Benzo(g,h,i)perylene	276	21.966	21.978	(1.132)	441061	15.0000	15.2(A)	
M	88 Total PAHs	100				5149784	270.000	(a)	
M	324 Total Low PAHs	100				20090397	105.000	(a)	
M	325 Total High PAHs	100				8764978	90.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.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Date : 21-MAR-2018 13:37
Client ID:
Sample Info: WG225136-7
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032118,b\N8056,D
Y (x10^6)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-2,4-Dichlorophenol
-Naphthalene-D8+
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol+
-2-Methylnaphthalene
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Pentachlorophenol
-Phenanthrene-D10+
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(a)pyrene+
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8057.D
Report Date: 21-Mar-2018 15:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8057.D
Lab Smp Id: WG225136-8
Inj Date : 21-MAR-2018 14:08 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225136-8
Misc Info : WG225136,WG225136,WG225136-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 21-Mar-2018 14:04 gcms-n.i Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 8 QC Sample: INDCHECK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
2	1,4-Dioxane	88	2.654	2.633	(0.382)	162348	4.70532	4.70	
3	N-Nitrosodimethylamine	74	3.189	3.158	(0.460)	218981	5.02900	5.03	
4	Pyridine	79	3.200	3.168	(0.461)	440290	5.91439	5.91	
5	Benzaldehyde	77	6.387	6.376	(0.920)	122518	5.30278	5.30	
6	Phenol	94	6.638	6.618	(0.956)	551541	5.20516	5.20	
7	Bis(2-Chloroethyl)ether	93	6.628	6.628	(0.955)	436290	4.71975	4.72	
8	2-Chlorophenol	128	6.709	6.699	(0.967)	519255	4.94964	4.95	
9	1,3-Dichlorobenzene	146	6.860	6.860	(0.988)	567588	5.08890	5.09	
* 10	1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	61258	0.80000	(aQ)	
11	1,4-Dichlorobenzene	146	6.960	6.950	(1.003)	581100	5.06212	5.06	
12	1,2-Dichlorobenzene	146	7.152	7.151	(1.030)	550204	5.07154	5.07	
13	2,2'-Oxybis(1-chloropropane)	45	7.323	7.323	(1.055)	355023	3.85311	3.85(R)	
14	2-Methylphenol	108	7.373	7.373	(1.062)	442745	5.32011	5.32	
15	Acetophenone	105	7.484	7.484	(0.871)	615194	5.40068	5.40	
16	N-Nitroso-di-n-propylamine	70	7.494	7.504	(1.080)	264510	4.71975	4.72	
17	3&4-Methylphenol	108	7.594	7.584	(1.094)	427587	5.11851	5.12	
18	Hexachloroethane	117	7.564	7.574	(1.090)	189647	4.97646	4.98	
19	Nitrobenzene	77	7.685	7.685	(0.895)	434151	5.39718	5.40	
20	Isophorone	82	8.007	8.017	(0.932)	698481	5.01390	5.01	
21	2-Nitrophenol	139	8.118	8.118	(0.945)	260777	5.19939	5.20	
22	2,4-Dimethylphenol	107	8.249	8.239	(0.960)	387658	4.94444	4.94	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8057.D
Report Date: 21-Mar-2018 15:10

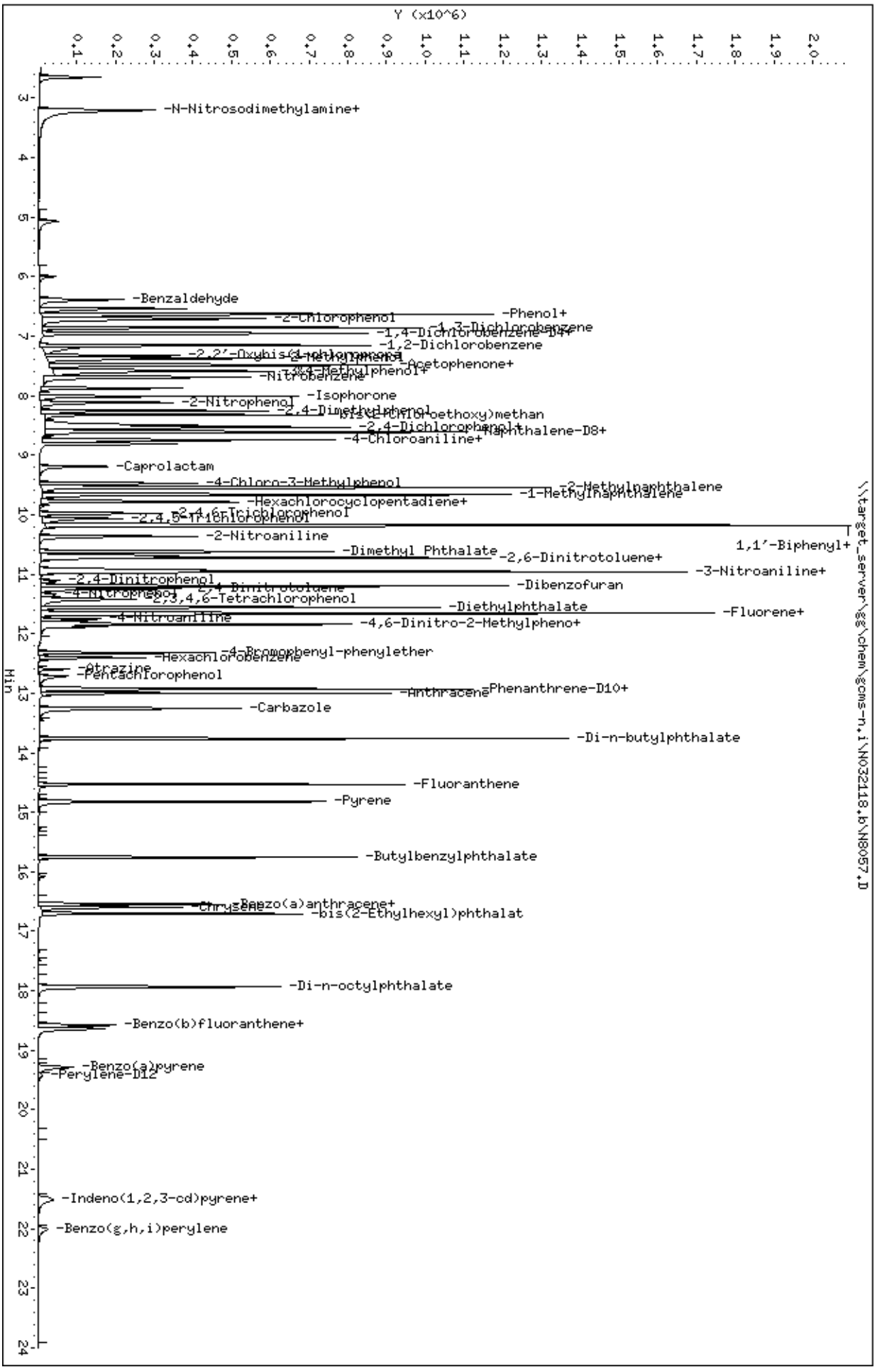
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	23 bis(2-Chloroethoxy)methane	93	8.319	8.319	(0.968)	526004	5.27836	5.28	
	24 2,4-Dichlorophenol	162	8.490	8.470	(0.988)	375348	5.20610	5.21	
	25 1,2,4-Trichlorobenzene	180	8.531	8.530	(0.993)	380310	5.28933	5.29	
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	187911	0.80000	(a)	
	27 Naphthalene	128	8.611	8.611	(1.002)	1280162	5.15554	5.16	
	28 4-Chloroaniline	127	8.742	8.732	(1.018)	462725	4.79363	4.79	
	29 Hexachlorobutadiene	225	8.812	8.812	(1.026)	186680	5.20336	5.20	
	30 Caprolactam	113	9.193	9.222	(1.070)	127230	5.17482	5.17	
	31 4-Chloro-3-Methylphenol	107	9.469	9.459	(1.102)	322747	5.01182	5.01	
	33 2-Methylnaphthalene	142	9.547	9.547	(1.111)	912067	5.57463	5.57	
	34 1-Methylnaphthalene	142	9.665	9.675	(1.125)	761026	4.77921	4.78	
	35 Hexachlorocyclopentadiene	237	9.764	9.774	(0.895)	79764	3.68577	3.68(R)	
	36 1,2,4,5-Tetrachlorobenzene	216	9.784	9.783	(0.896)	320323	5.21028	5.21	
	38 2,4,6-Trichlorophenol	196	9.971	9.970	(0.913)	205512	4.86601	4.87	
	39 2,4,5-Trichlorophenol	196	10.059	10.039	(0.922)	240391	5.28818	5.29	
	40 1,1'-Biphenyl	154	10.177	10.177	(0.932)	956306	5.17809	5.18	
	41 2-Chloronaphthalene	164	10.187	10.187	(0.933)	254008	5.01078	5.01	
	42 2-Nitroaniline	65	10.364	10.364	(0.950)	177606	5.46717	5.47	
	43 Dimethyl Phthalate	163	10.621	10.621	(0.973)	860763	5.07206	5.07	
	44 2,6-Dinitrotoluene	165	10.686	10.697	(0.979)	202116	5.17614	5.18	
	45 Acenaphthylene	152	10.730	10.730	(0.983)	1086166	4.90145	4.90	
	46 3-Nitroaniline	138	10.926	10.915	(1.001)	172121	5.07214	5.07	
*	47 Acenaphthene-D10	164	10.915	10.926	(1.000)	80518	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.969	(1.004)	724094	5.05633	5.06	
	49 2,4-Dinitrophenol	184	11.111	11.089	(1.018)	62966	4.60067	4.60	
	50 Dibenzofuran	168	11.198	11.198	(1.026)	981158	5.26286	5.26	
	51 2,4-Dinitrotoluene	165	11.242	11.242	(1.030)	247618	5.26539	5.26	
	52 4-Nitrophenol	139	11.340	11.275	(1.039)	102769	4.52875	4.53	
	53 2,3,4,6-Tetrachlorophenol	232	11.427	11.416	(1.047)	137209	4.28694	4.29	
	54 Diethylphthalate	149	11.558	11.569	(1.059)	921207	5.16525	5.16	
	56 Fluorene	166	11.656	11.656	(1.068)	758590	5.03497	5.03	
	57 4-Chlorophenyl-phenylether	204	11.678	11.678	(1.070)	331452	4.96539	4.96	
	58 4-Nitroaniline	138	11.754	11.743	(1.077)	156279	6.08936	6.09(R)	
	59 4,6-Dinitro-2-Methylphenol	198	11.809	11.798	(0.916)	99990	4.72099	4.72	
	60 N-Nitrosodiphenylamine	169	11.841	11.852	(0.918)	473442	4.15166	4.15	
	61 4-Bromophenyl-phenylether	248	12.319	12.318	(0.955)	171393	4.76263	4.76	
	62 Hexachlorobenzene	284	12.415	12.414	(0.963)	180513	4.87658	4.88	
	63 Atrazine	200	12.596	12.607	(0.977)	57187	2.42926	2.43(R)	
	64 Pentachlorophenol	266	12.714	12.703	(0.986)	83773	4.92158	4.92	
*	65 Phenanthrene-D10	188	12.895	12.895	(1.000)	110764	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.927	(1.002)	883904	4.90529	4.90	
	67 Anthracene	178	13.002	13.002	(1.008)	887216	4.81329	4.81	
	68 Carbazole	167	13.247	13.247	(1.027)	736386	5.06252	5.06	
	69 Di-n-butylphthalate	149	13.760	13.760	(1.067)	1435735	5.13763	5.14	
	70 Fluoranthene	202	14.527	14.527	(1.127)	727511	4.74320	4.74	
	72 Pyrene	202	14.818	14.827	(0.895)	732656	4.39480	4.39	
	73 Butylbenzylphthalate	149	15.756	15.756	(0.952)	528362	4.75825	4.76	
	74 Benzo(a)anthracene	228	16.544	16.544	(0.999)	408638	4.86777	4.87	
	75 3,3'-Dichlorobenzidine	252	16.554	16.544	(1.000)	94380	5.15476	5.15	
*	76 Chrysene-D12	240	16.554	16.554	(1.000)	45523	0.80000	(a)	
	77 Chrysene	228	16.601	16.601	(1.003)	422058	5.16902	5.17	
	78 bis(2-Ethylhexyl)phthalate	149	16.704	16.704	(1.009)	781961	4.76785	4.77	
	79 Di-n-octylphthalate	149	17.935	17.935	(1.083)	1129782	4.97700	4.98	
	80 Benzo(b)fluoranthene	252	18.571	18.571	(0.956)	261375	4.98930	4.99	

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8057.D
Report Date: 21-Mar-2018 15:10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	81 Benzo(k)fluoranthene	252	18.628	18.628	(0.959)	304982	5.34055	5.34(H)	
	82 Benzo(a)pyrene	252	19.286	19.263	(0.993)	181981	4.27983	4.28	
*	83 Perylene-D12	264	19.423	19.411	(1.000)	25001	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.478	21.455	(1.297)	115982	4.50990	4.51	
	86 Dibenzo(a,h)anthracene	278	21.524	21.489	(1.108)	78777	4.25885	4.26	
	87 Benzo(g,h,i)perylene	276	22.001	21.966	(1.133)	107538	4.14591	4.14	
M	88 Total PAHs	100				1550903	23.7649	23.8	
M	324 Total Low PAHs	100				6532199	35.4415	35.4	
M	325 Total High PAHs	100				2551621	27.7135	27.7	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.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Volume Injected (uL): 1.0
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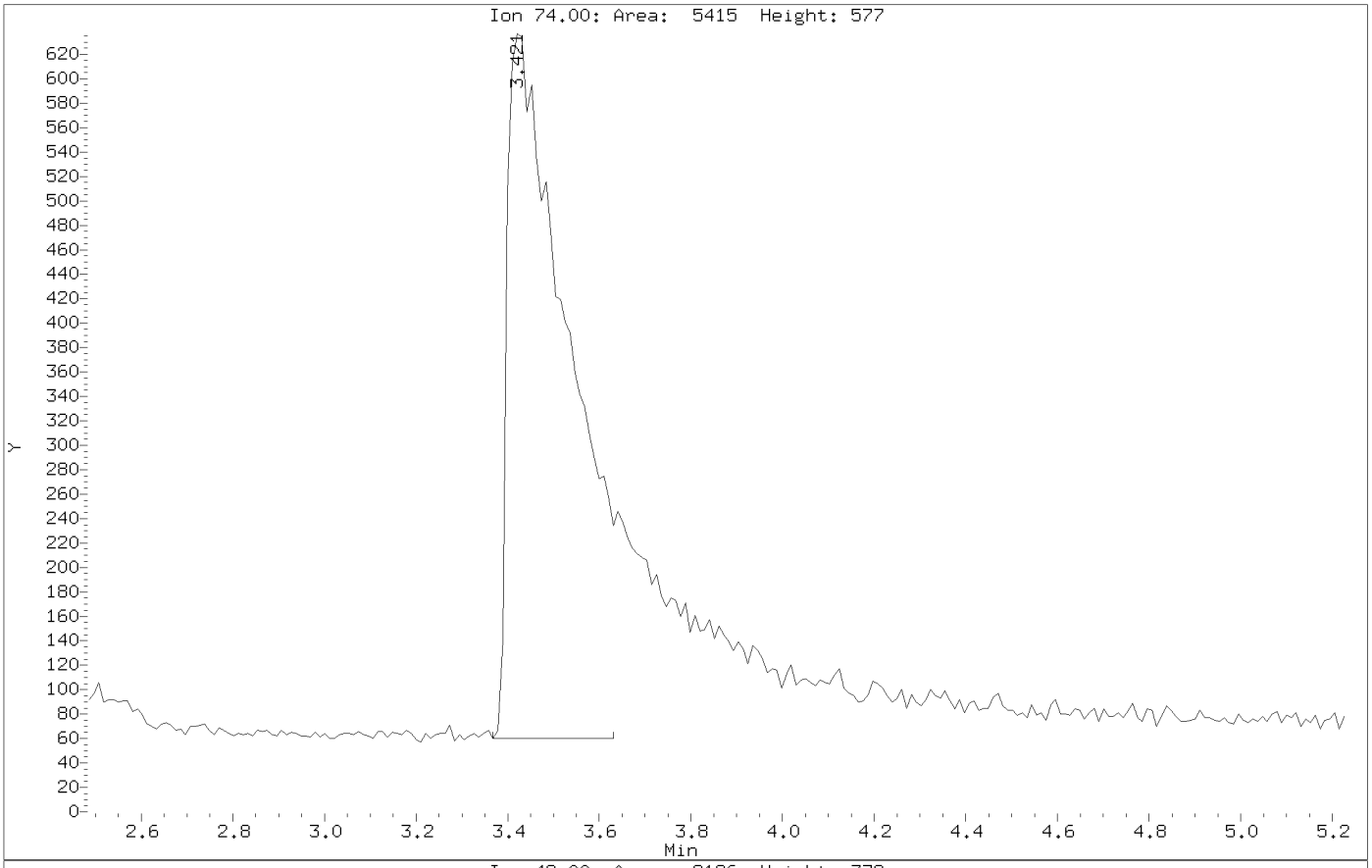
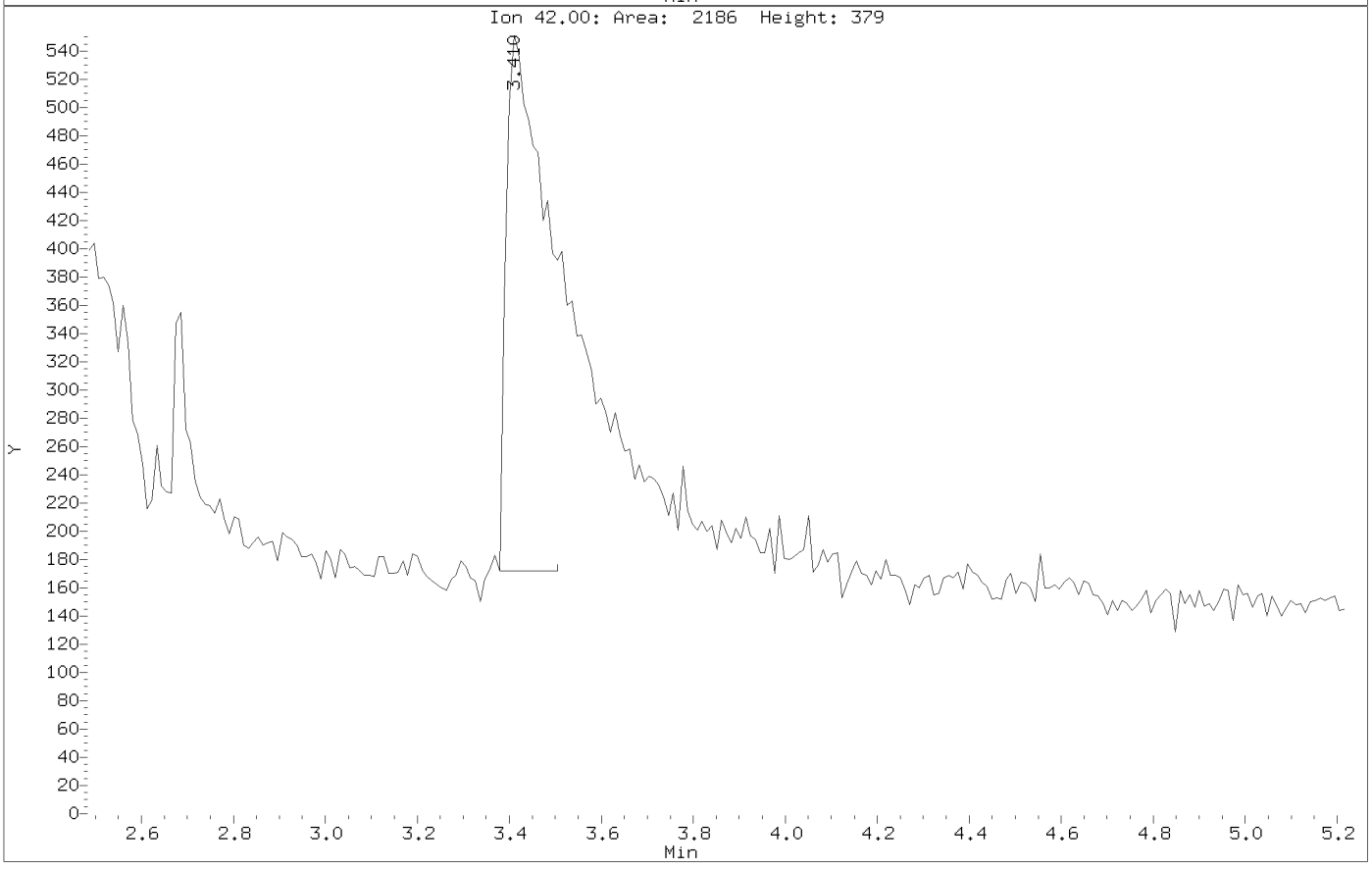
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032118,b\N8057,D
Y (x10^6)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-2-Chlorophenol
-Phenol+
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-Acetophenone+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dichlorophenol
-Naphthalene-D8+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-2-Nitroaniline
1,1'-Biphenyl+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene+
-4-Nitroaniline
-4,6-Dinitro-2-Methylpheno+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
-Di-n-butylphthalate
-Fluoranthene
-Pyrene
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: N-Nitrosodimethylamine
CAS Number: 62-75-9

BEFORE MANUAL INTEGRATION

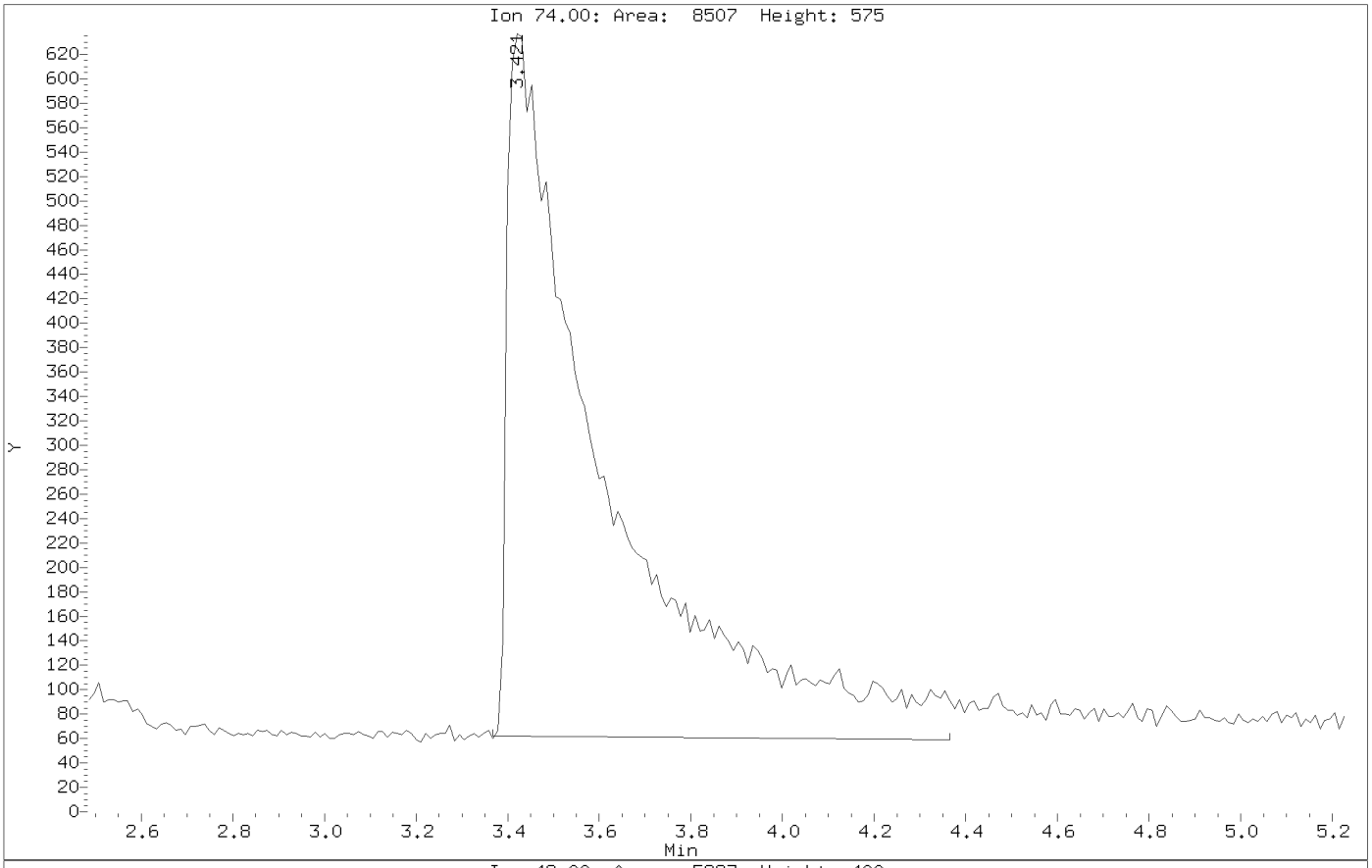


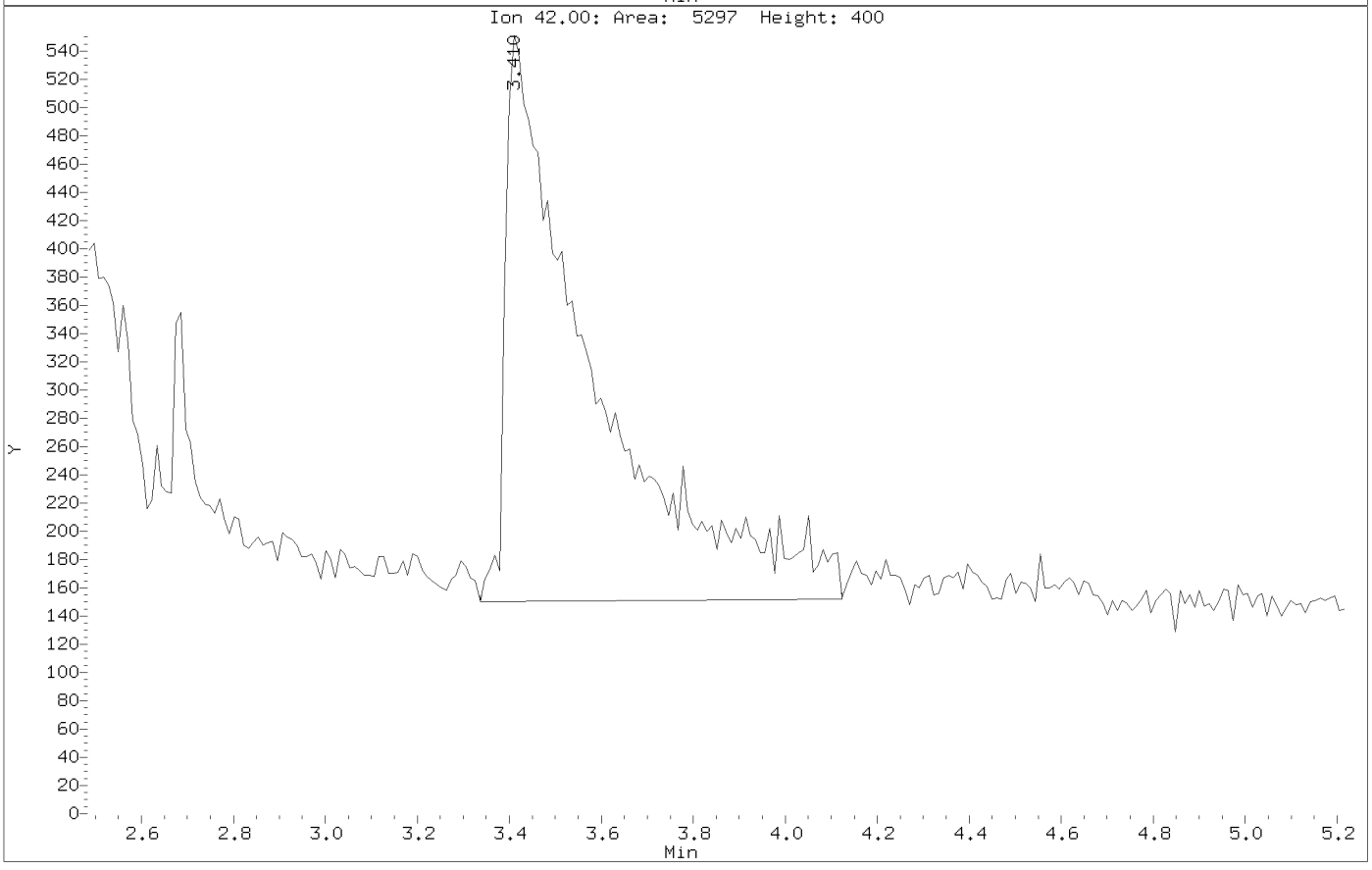


Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: N-Nitrosodimethylamine
CAS Number: 62-75-9

AFTER MANUAL INTEGRATION

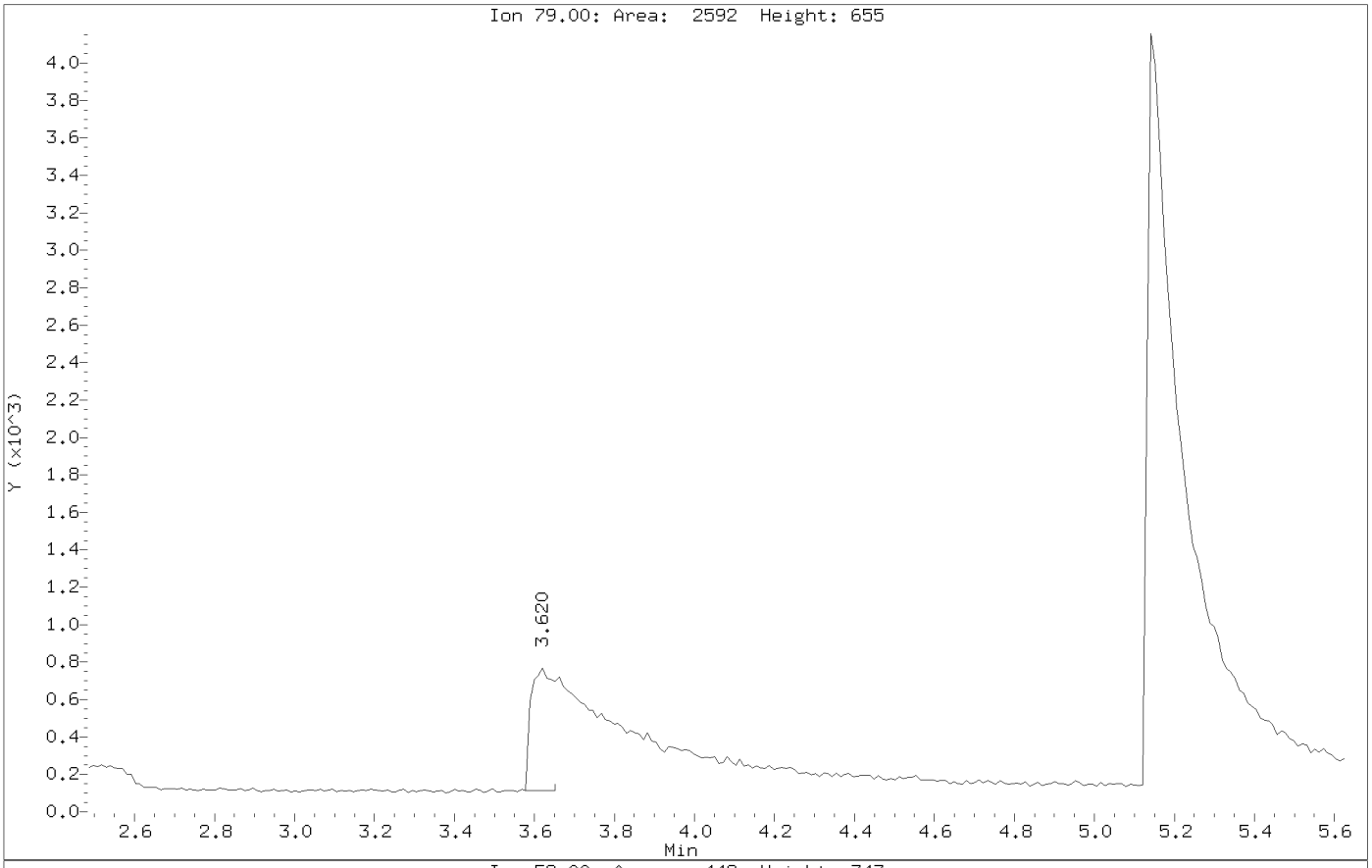


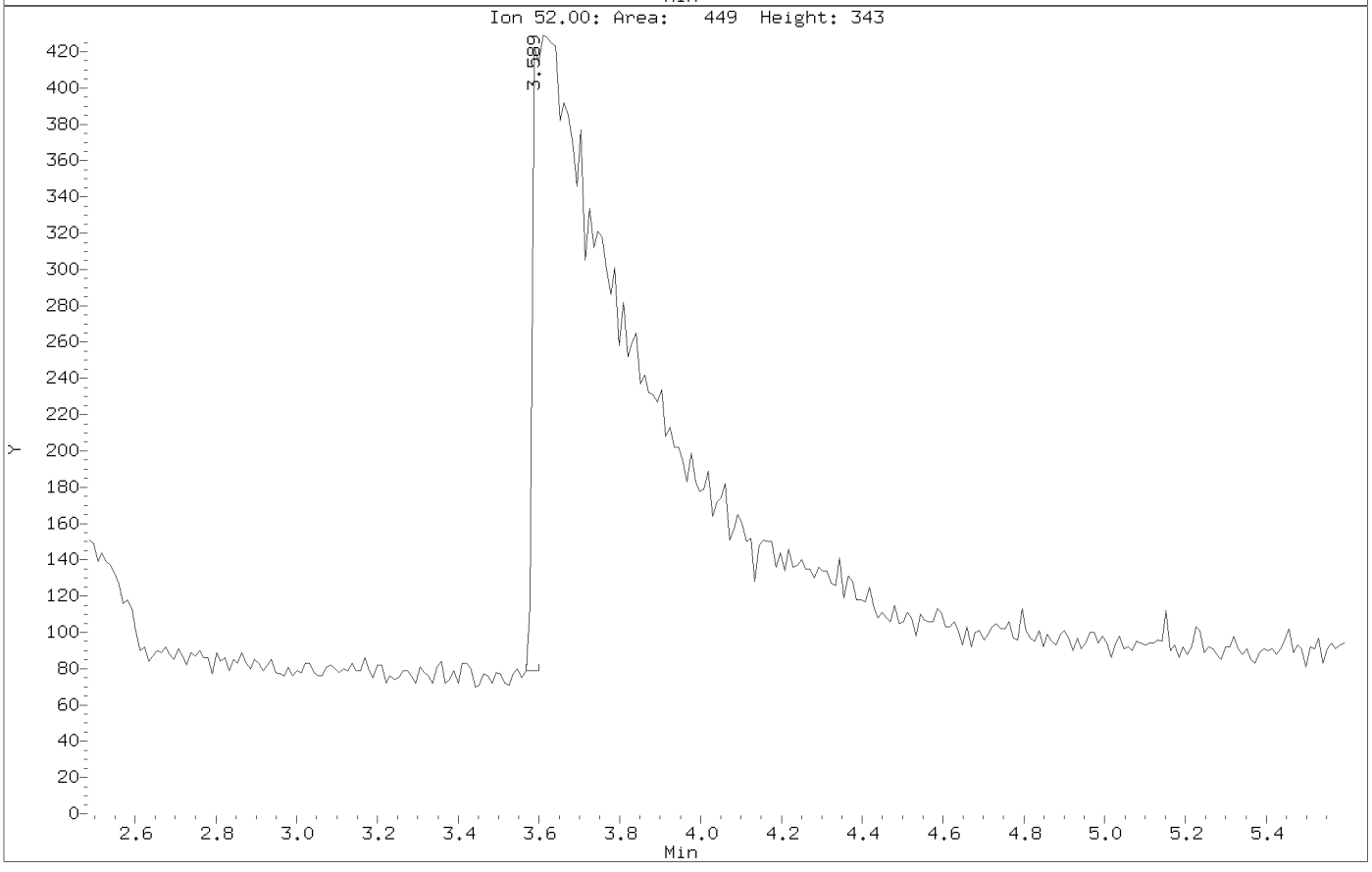


Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Pyridine
CAS Number: 110-86-1

BEFORE MANUAL INTEGRATION

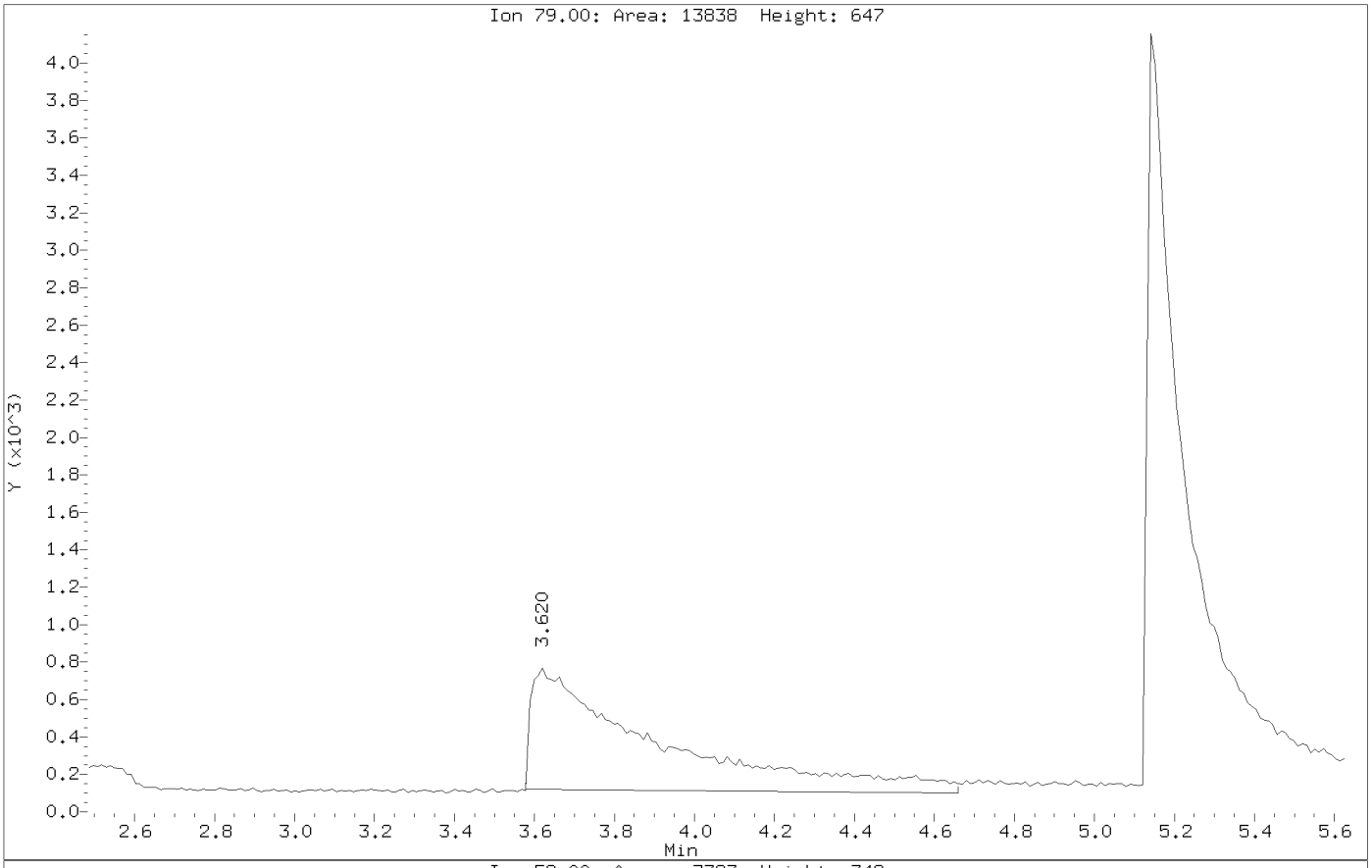


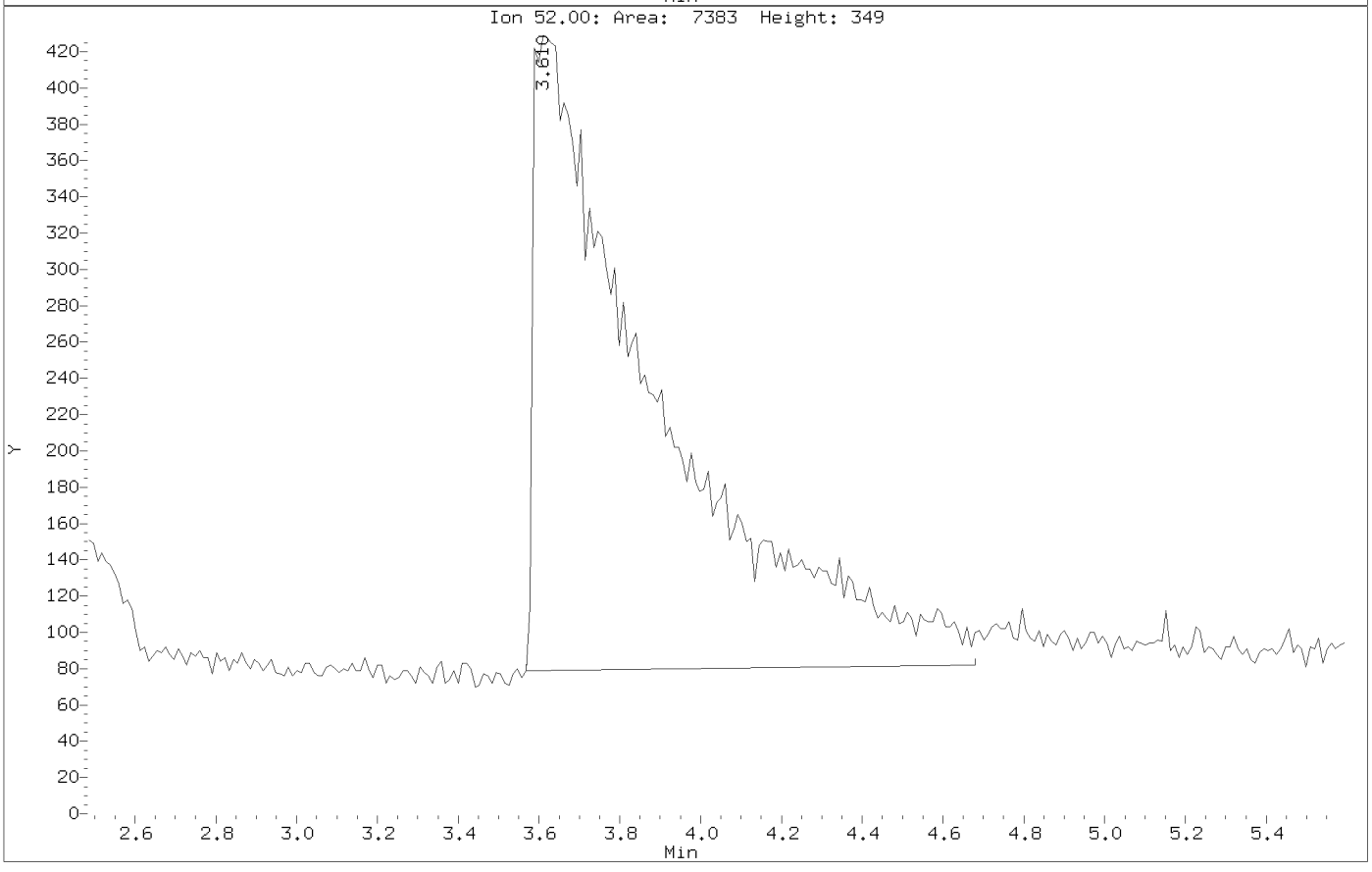


Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Pyridine
CAS Number: 110-86-1

AFTER MANUAL INTEGRATION

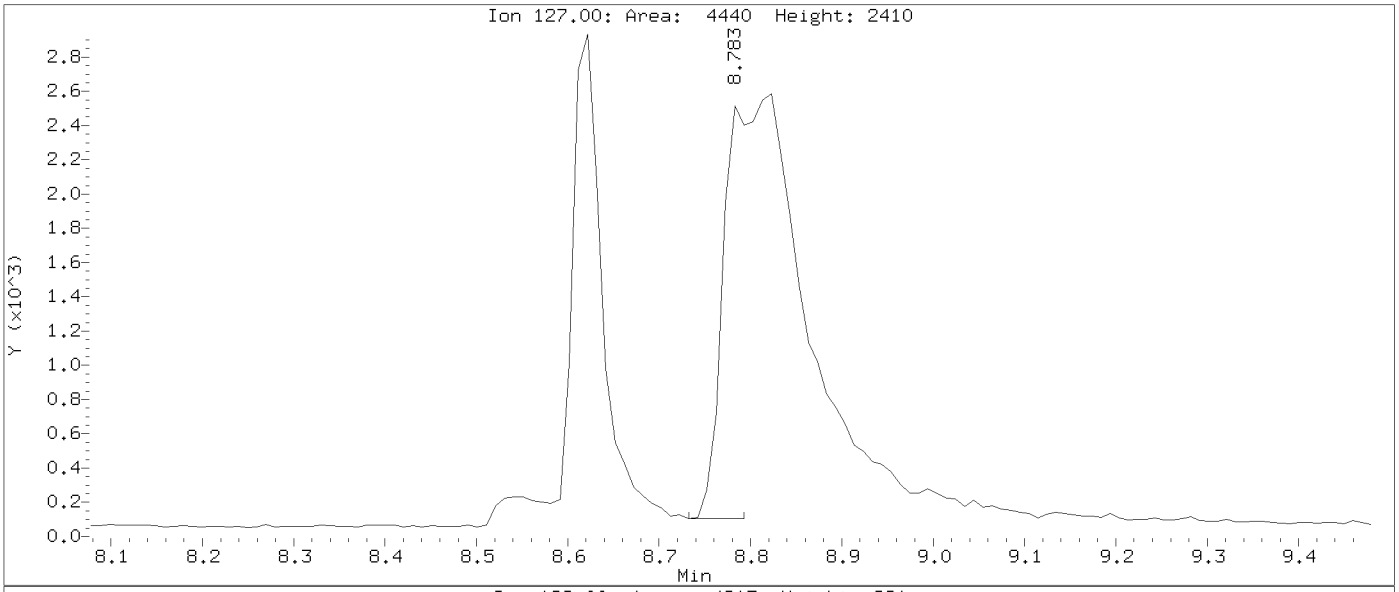


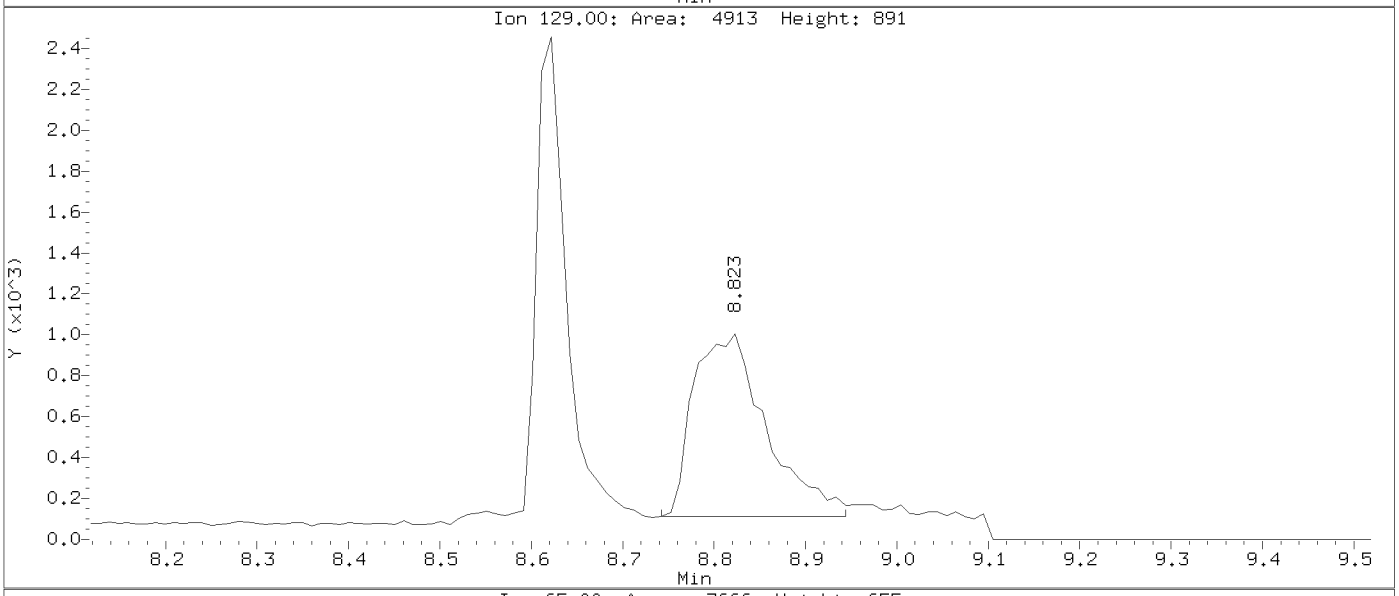


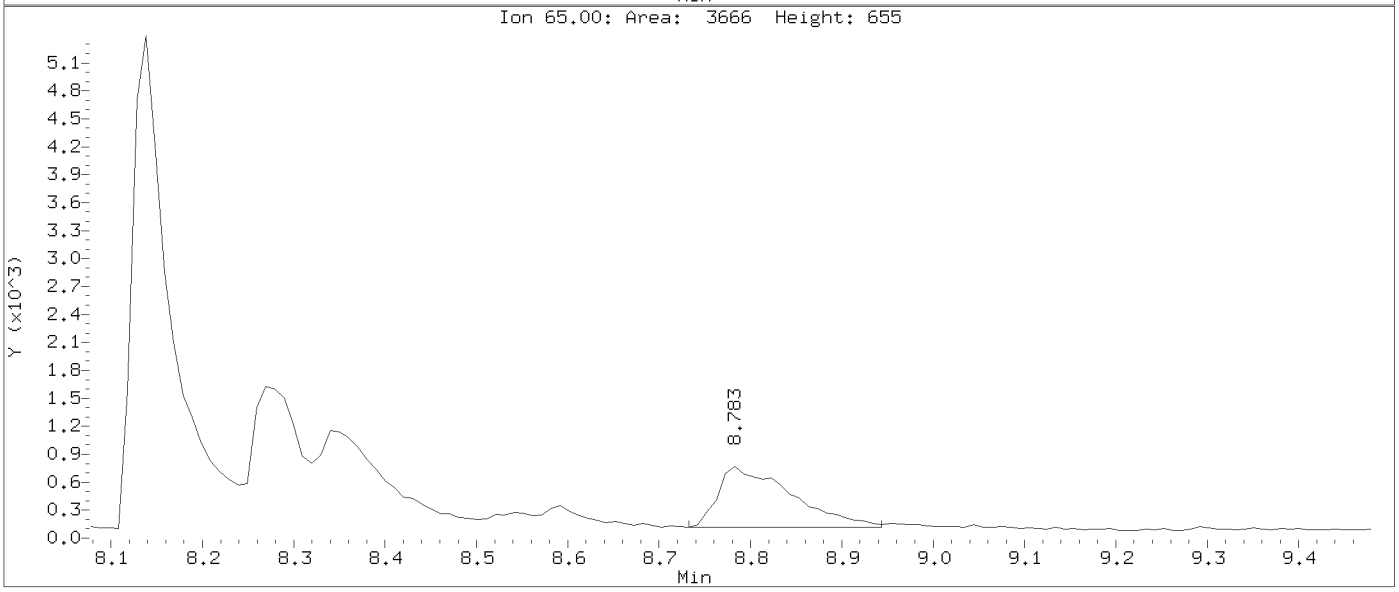
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: 4-Chloroaniline
CAS Number: 106-47-8

BEFORE MANUAL INTEGRATION



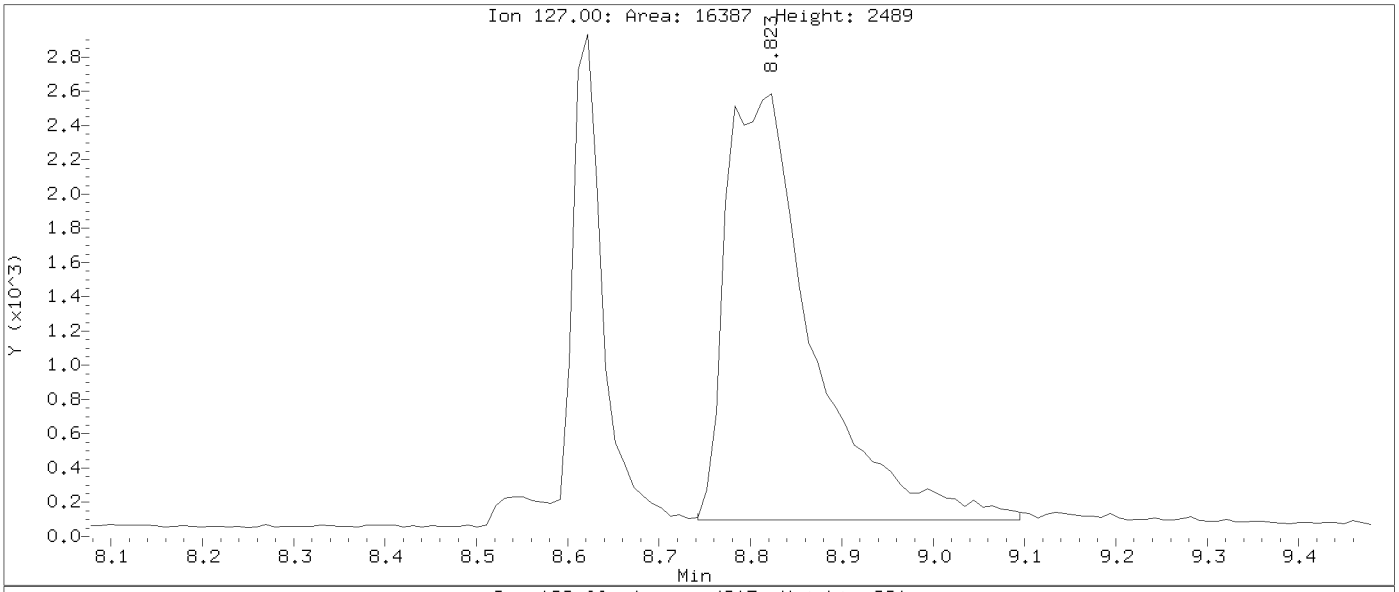


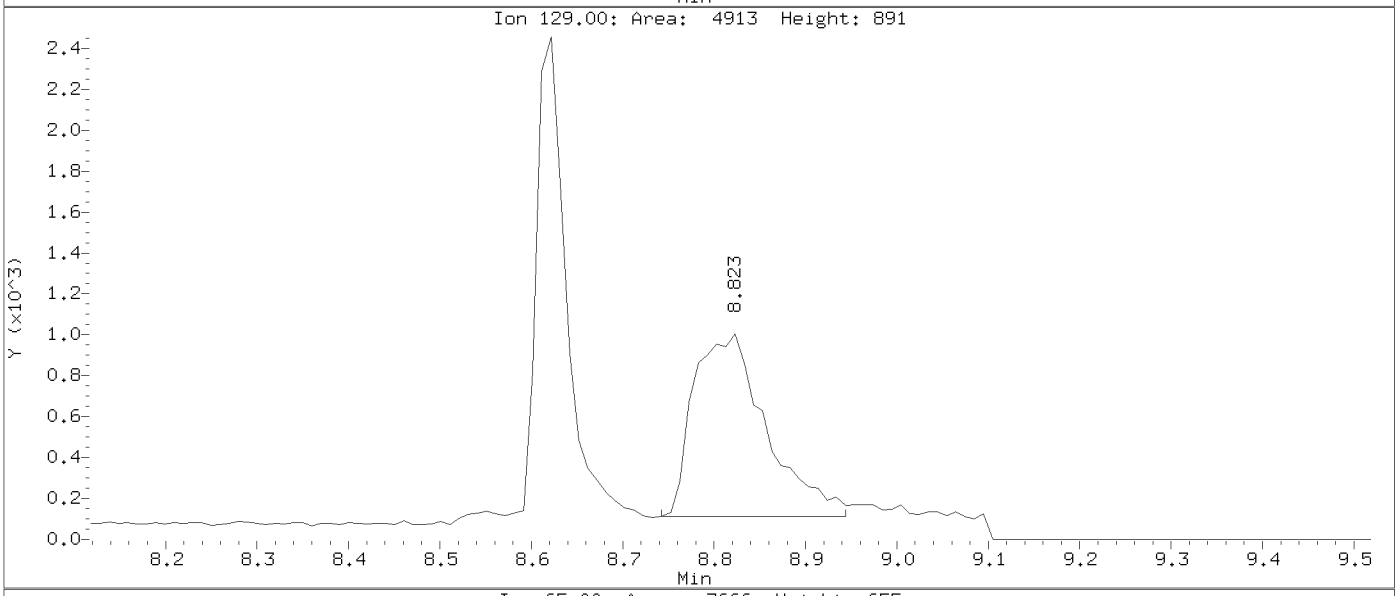


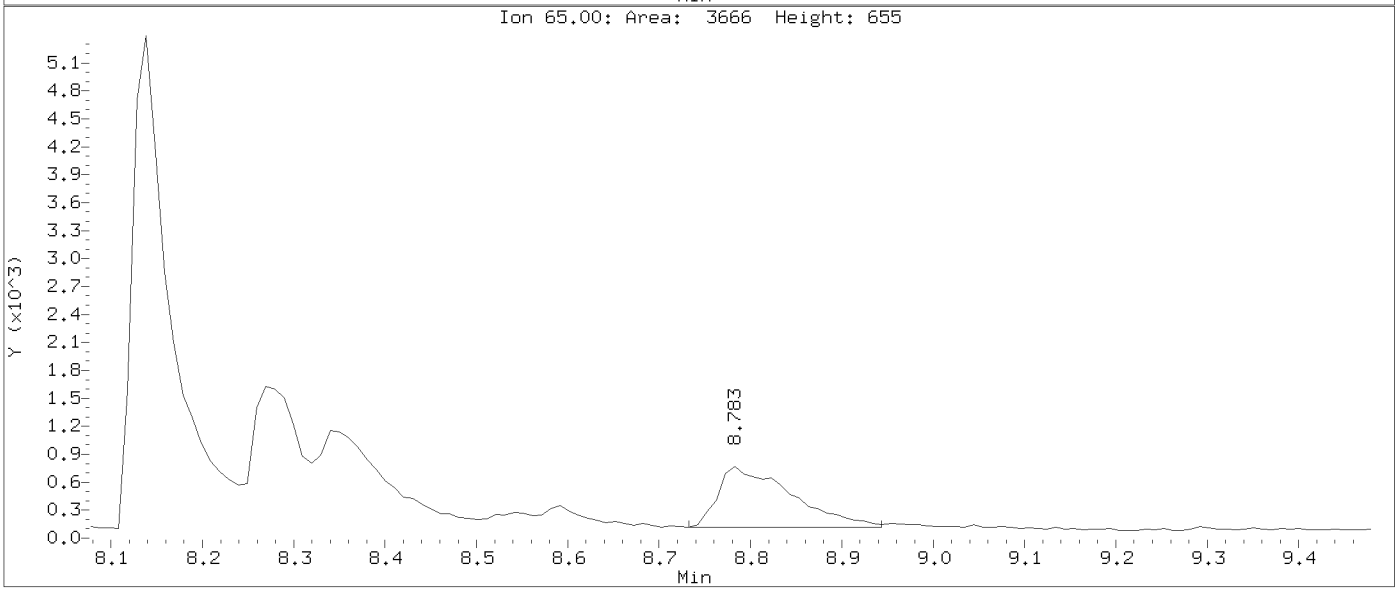
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: 4-Chloroaniline
CAS Number: 106-47-8

AFTER MANUAL INTEGRATION



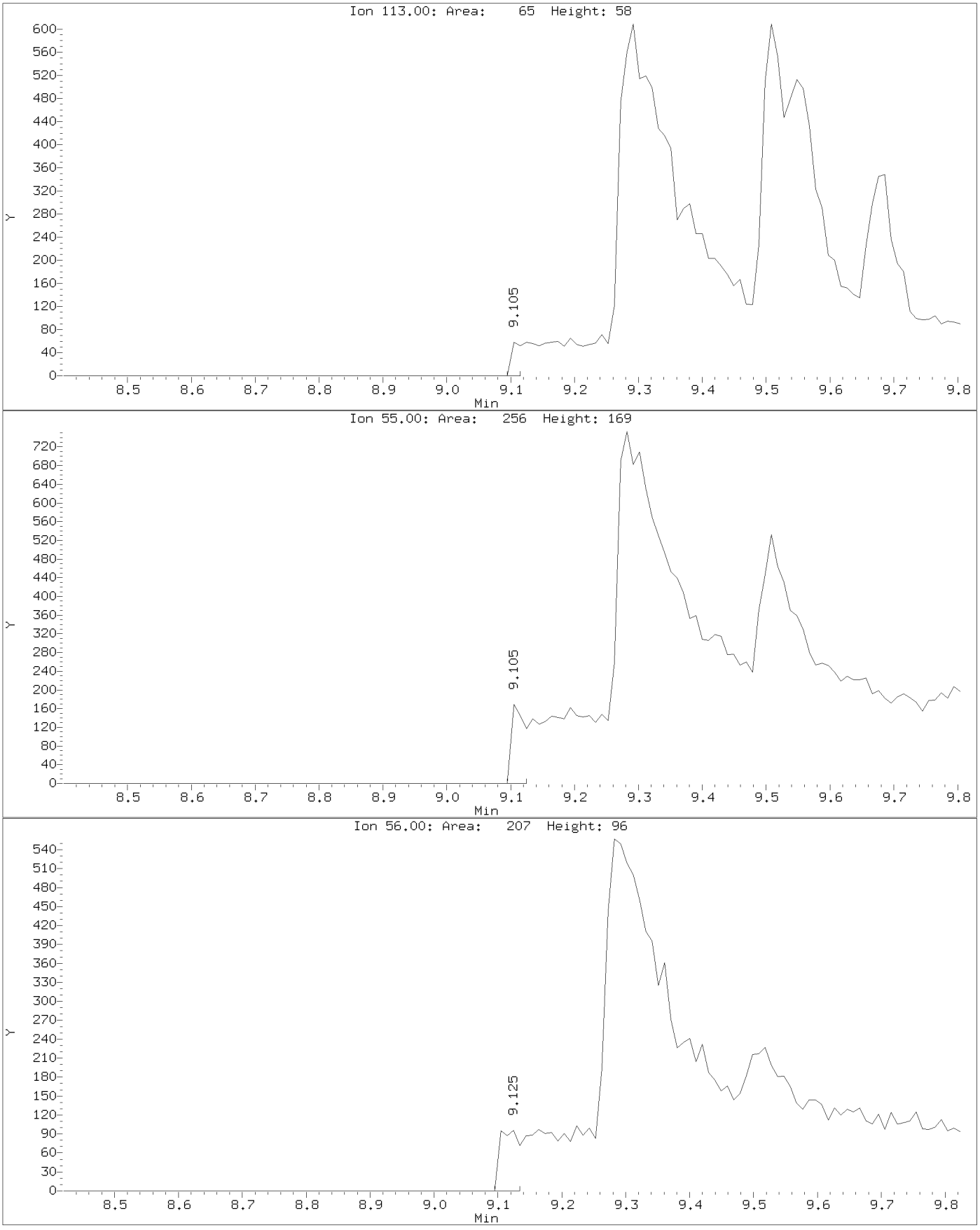




Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

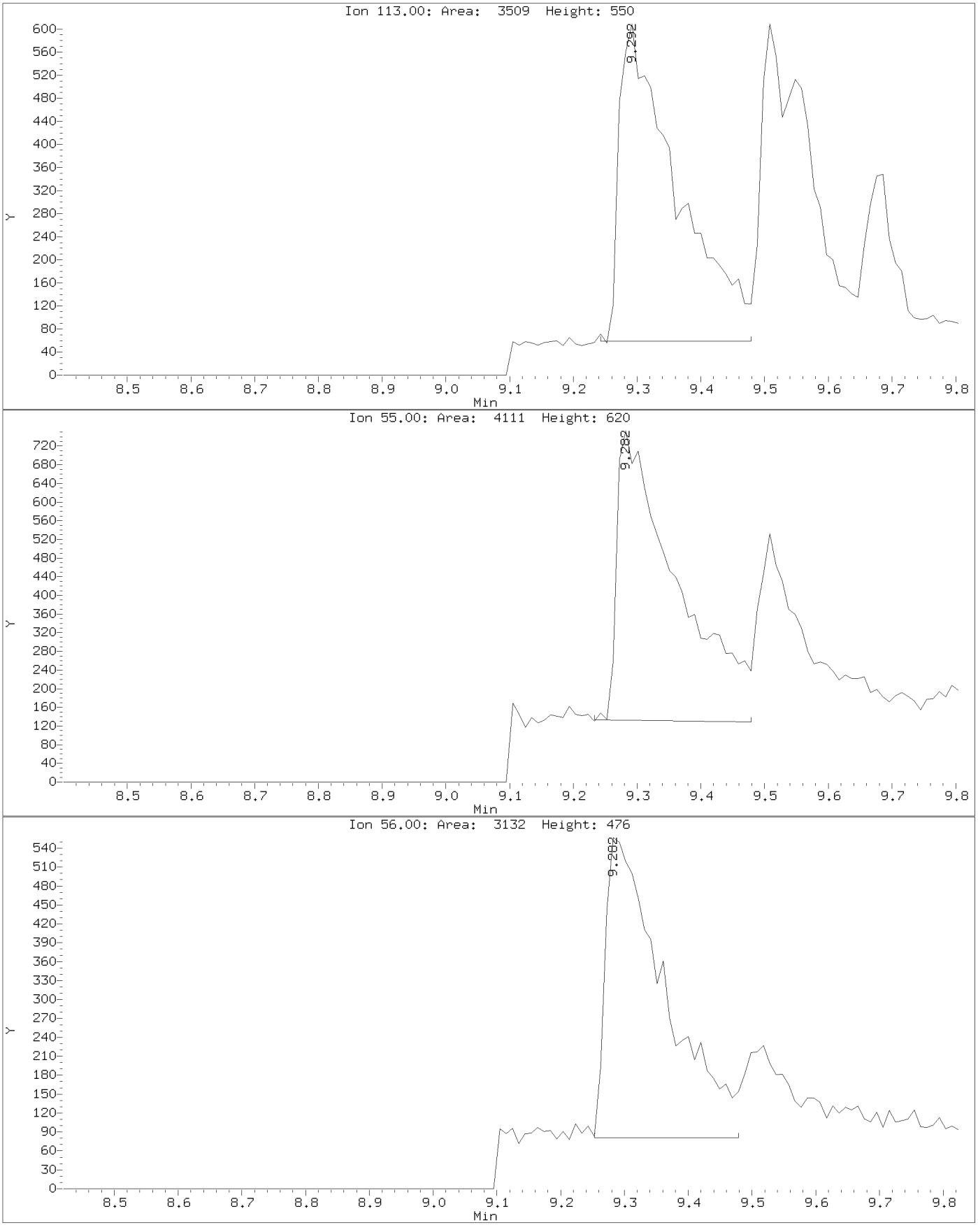
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8052.D
Injection Date: 21-MAR-2018 11:30
Instrument: gcms-n.i
Client Sample ID:

Compound: Caprolactam
CAS Number: 105-60-2

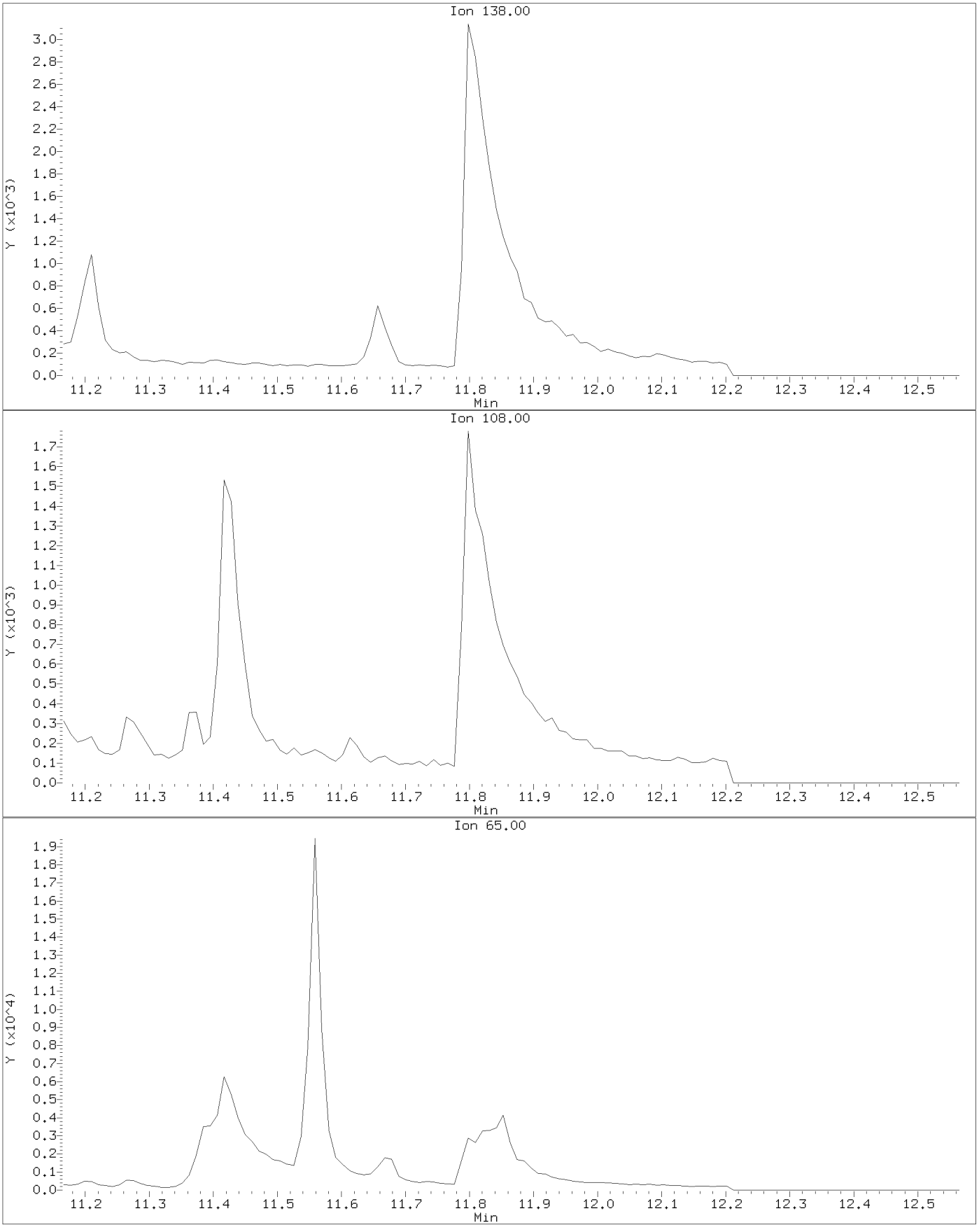
AFTER MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8053.D
Injection Date: 21-MAR-2018 12:02
Instrument: gcms-n.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6

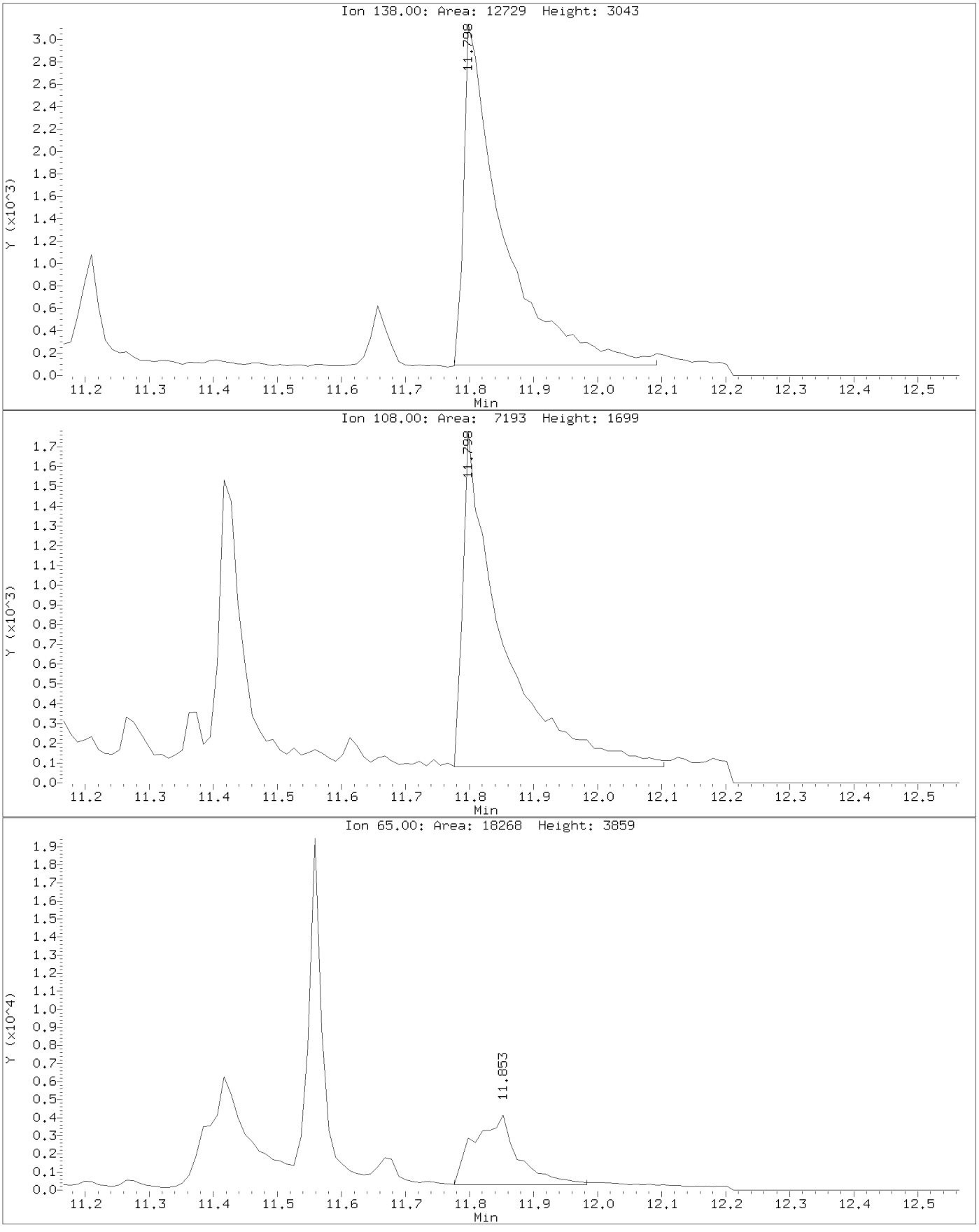
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8053.D
Injection Date: 21-MAR-2018 12:02
Instrument: gcms-n.i
Client Sample ID:

Compound: 4-Nitroaniline
CAS Number: 100-01-6

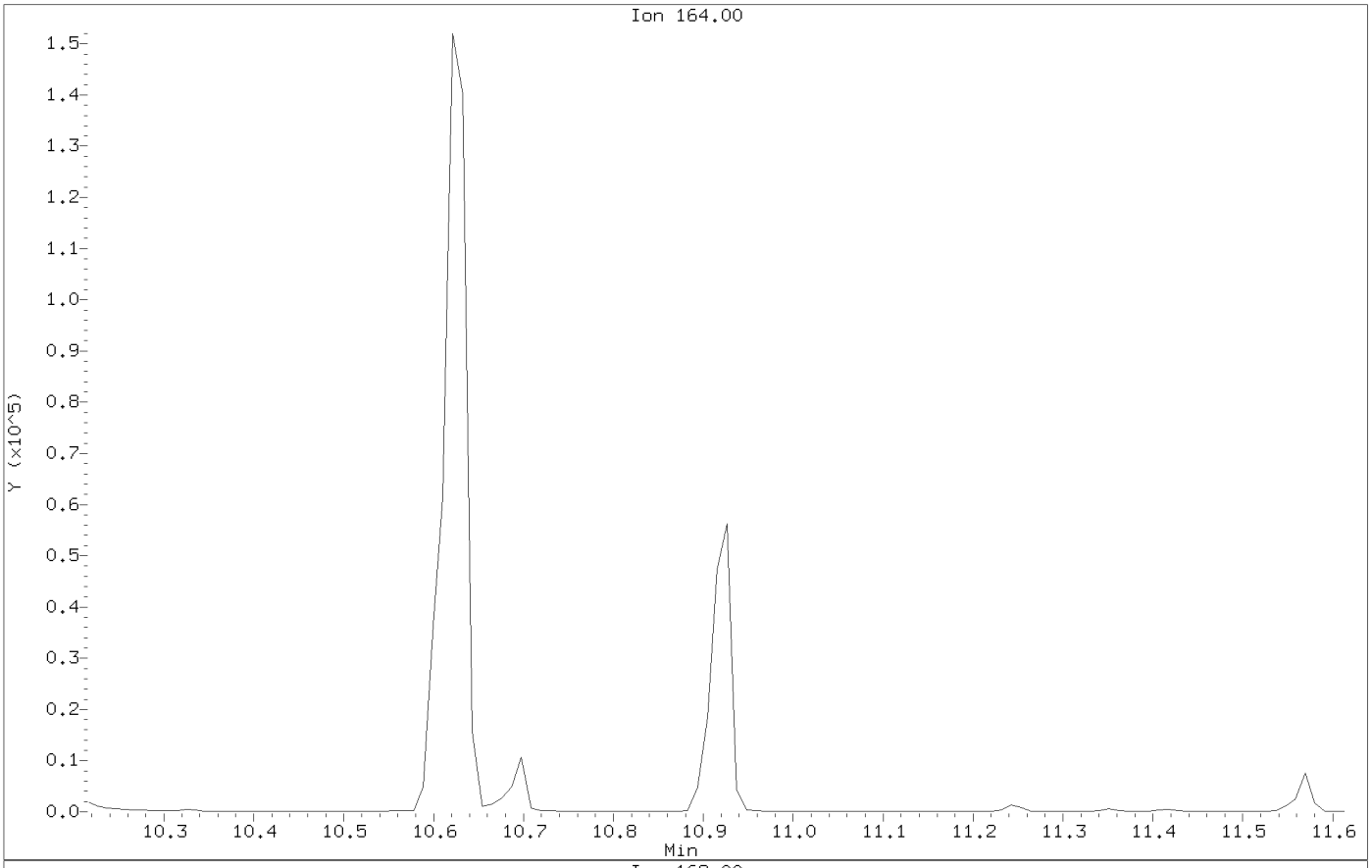
AFTER MANUAL INTEGRATION

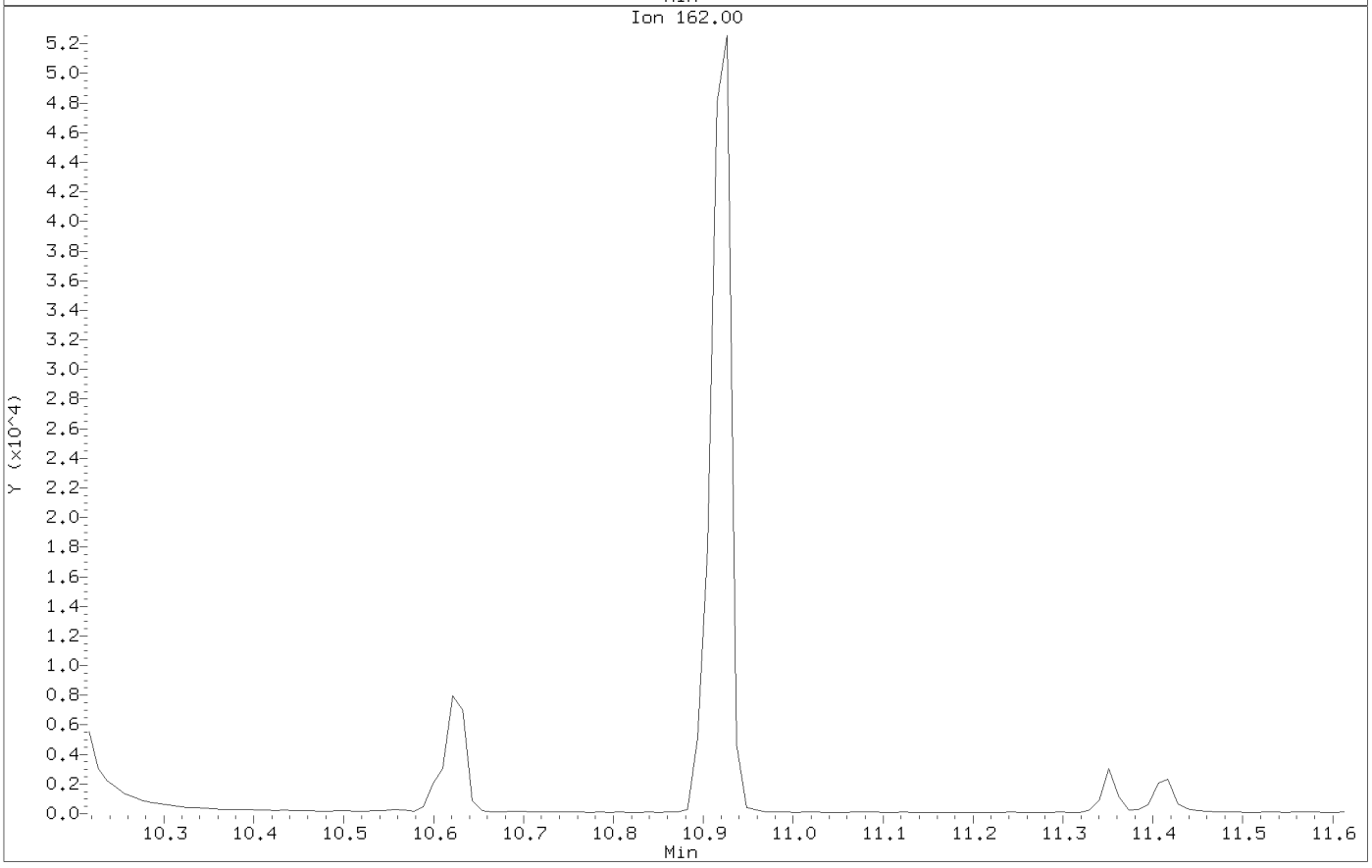


Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8056.D
Injection Date: 21-MAR-2018 13:37
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

BEFORE MANUAL INTEGRATION

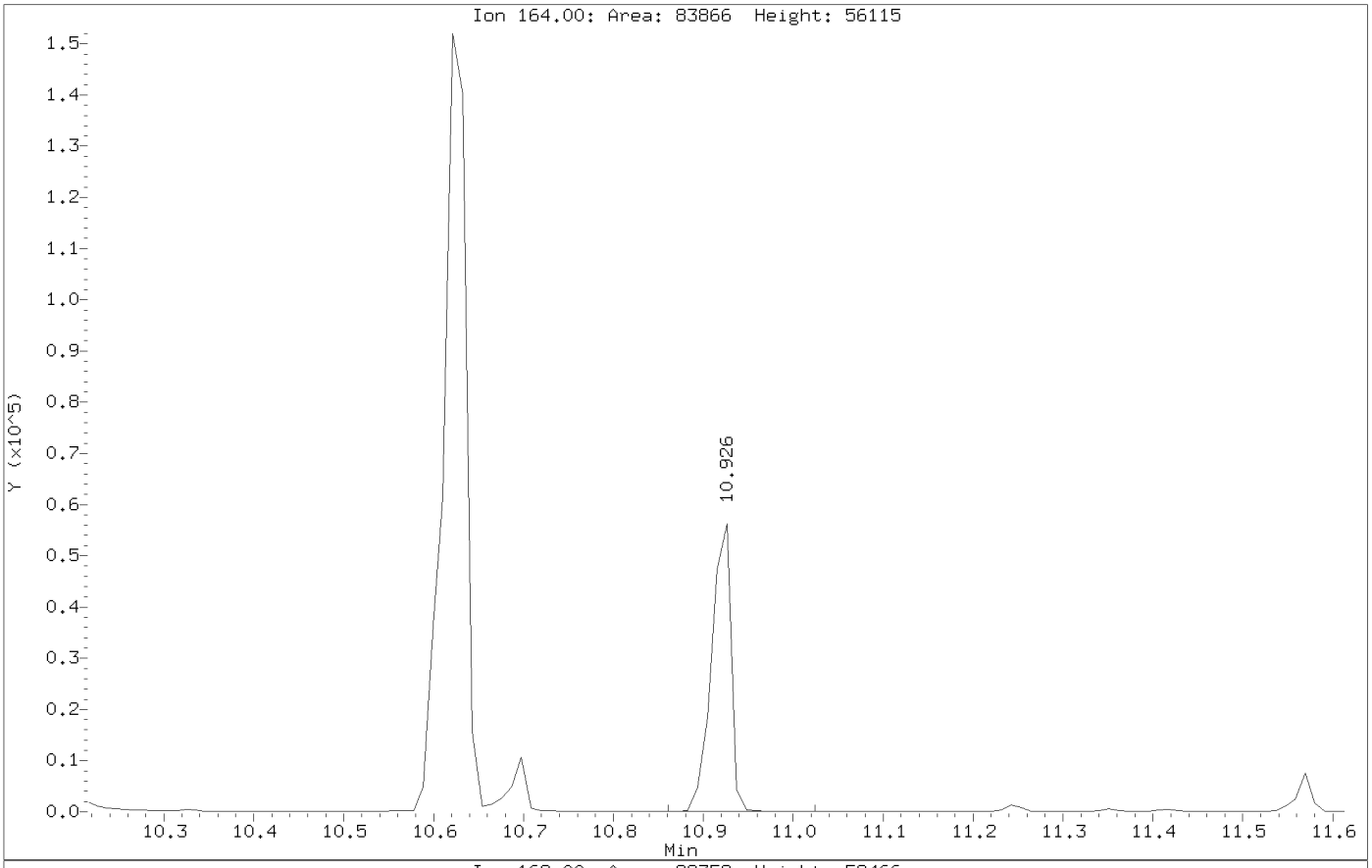


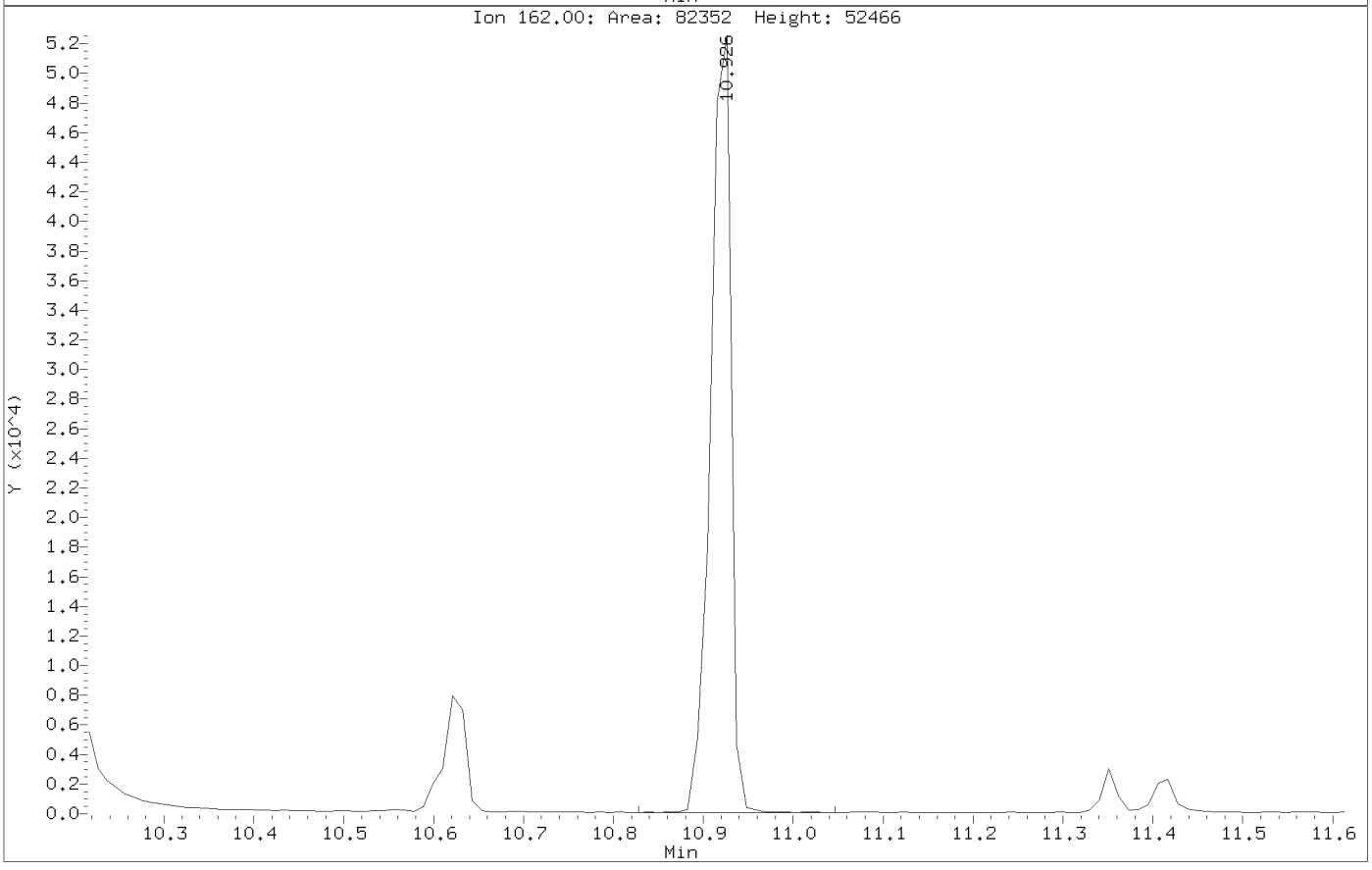


Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8056.D
Injection Date: 21-MAR-2018 13:37
Instrument: gcms-n.i
Client Sample ID:

Compound: Acenaphthene-D10
CAS Number: 15067-26-2

AFTER MANUAL INTEGRATION





Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2133
Lab ID : WG225084-2
Analytical Date: 03/20/18 10:39
Lab File ID : N8024.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 03/16/18 11:59 03/16/18 14:38
Column ID:

Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.01111	1.05504	1.05504	0.010	4.34479	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	1.97382	0.77571	0.010	-1.30877	20.00000	Quadratic	
45 Acenaphthylene	2.12228	2.18126	2.18126	0.010	2.77927	20.00000	Averaged	
48 Acenaphthene	1.38593	1.43086	1.43086	0.010	3.24239	20.01000	Averaged	
56 Fluorene	1.42266	1.46328	1.46328	0.010	2.85503	20.00000	Averaged	
66 Phenanthrene	1.23601	1.26094	1.26094	0.010	2.01643	20.00000	Averaged	
67 Anthracene	1.38106	1.27576	1.27576	0.010	-7.62492	20.00000	Averaged	
70 Fluoranthene	1.16197	1.01015	1.01015	0.010	-13.06537	20.01000	Averaged	
72 Pyrene	2.46105	3.01423	3.01423	0.010	22.47727	20.00000	Averaged	*
74 Benzo(a)anthracene	1.40030	1.38082	1.38082	0.010	-1.39104	20.00000	Averaged	
77 Chrysene	2.00000	2.08563	1.60069	0.010	4.28174	20.00000	Linear	
80 Benzo(b)fluoranthene	1.32852	1.19689	1.19689	0.010	-9.90765	20.00000	Averaged	
81 Benzo(k)fluoranthene	1.83600	1.87498	1.87498	0.010	2.12335	20.00000	Averaged	
82 Benzo(a)pyrene	1.32739	1.23064	1.23064	0.010	-7.28886	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.95733	0.77153	0.77153	0.010	-19.40853	20.00000	Averaged	
86 Dibenzo(a,h)anthracene	0.91800	0.74483	0.74483	0.010	-18.86344	20.00000	Averaged	
87 Benzo(g,h,i)perylene	1.15375	1.01361	1.01361	0.010	-12.14628	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.47066	0.49864	0.49864	0.010	5.94516	20.00000	Averaged	
55 Fluorene-D10	0.98542	0.98633	0.98633	0.010	0.09207	20.00000	Averaged	
71 Pyrene-D10	1.41288	1.71770	1.71770	0.010	21.57425	20.00000	Averaged	*

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8024.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8024.D
Lab Smp Id: WG225084-2
Inj Date : 20-MAR-2018 10:39
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225084-2,SL2133
Misc Info : WG225084,WG225084,WG224895-4,SL2133-1
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

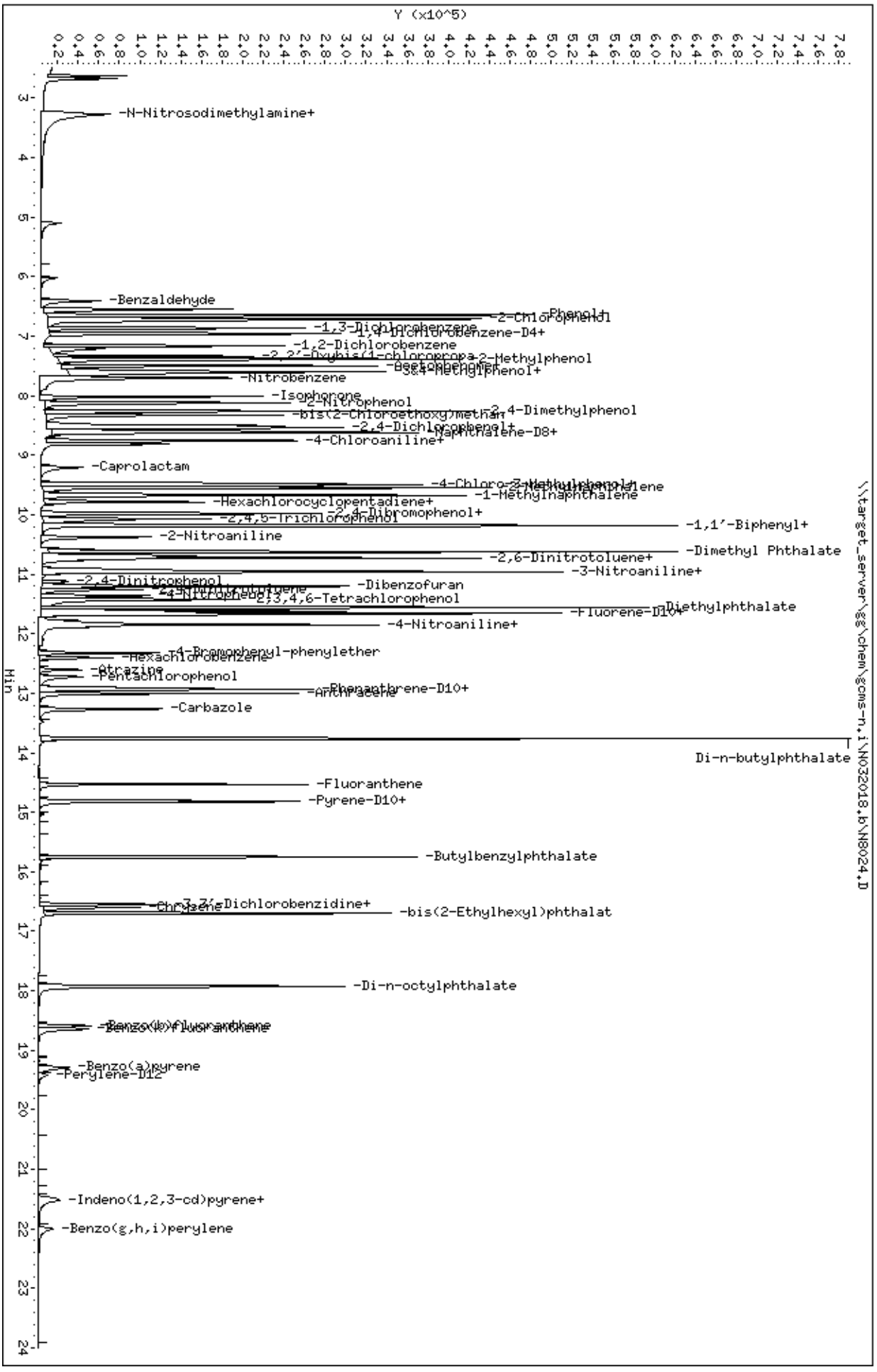
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	49920	0.80000	(a)	
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	161126	0.80000	(a)	
	27 Naphthalene	128	8.621	8.611	(1.004)	424985	2.00000	2.09	
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.107)	200859	2.00000	2.12	
	33 2-Methylnaphthalene	142	9.547	9.547	(1.111)	312468	2.00000	1.97	
	45 Acenaphthylene	152	10.730	10.730	(0.982)	365372	2.00000	2.06	
*	47 Acenaphthene-D10	164	10.926	10.926	(1.000)	67002	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.959	(1.003)	239677	2.00000	2.06	
$	55 Fluorene-D10	174	11.623	11.623	(1.064)	165215	2.00000	2.00	
	56 Fluorene	166	11.656	11.656	(1.067)	245107	2.00000	2.06	
*	65 Phenanthrene-D10	188	12.906	12.906	(1.000)	93335	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.927	(1.002)	294224	2.00000	2.04	
	67 Anthracene	178	13.002	13.002	(1.007)	297682	2.00000	1.85	
	70 Fluoranthene	202	14.527	14.527	(1.126)	235707	2.00000	1.74	
$	71 Pyrene-D10	212	14.799	14.799	(0.894)	134702	2.00000	2.43	
	72 Pyrene	202	14.818	14.827	(0.895)	236376	2.00000	2.45	
	74 Benzo(a)anthracene	228	16.544	16.544	(0.999)	108284	2.00000	1.97(H)	
*	76 Chrysene-D12	240	16.554	16.563	(1.000)	31368	0.80000	(a)	
	77 Chrysene	228	16.601	16.601	(1.003)	125526	2.00000	2.08	
	80 Benzo(b)fluoranthene	252	18.582	18.582	(0.957)	70464	2.00000	1.80	

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8024.D
Report Date: 26-Mar-2018 14:17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	18.639	18.639	(0.960)	110385	2.00000	2.04(H)	
82	Benzo(a)pyrene	252	19.286	19.286	(0.993)	72451	2.00000	1.85	
* 83	Perylene-D12	264	19.423	19.422	(1.000)	23549	0.80000	(a)	
85	Indeno(1,2,3-cd)pyrene	276	21.490	21.489	(1.298)	60503	2.00000	1.61	
86	Dibenzo(a,h)anthracene	278	21.524	21.523	(1.108)	43850	2.00000	1.62	
87	Benzo(g,h,i)perylene	276	22.001	22.012	(1.133)	59674	2.00000	1.76	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N032018,b\N8024.D
Date : 20-MAR-2018 10:39
Client ID:
Sample Info: WG225084-2,SL2133
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032018,b\N8024.D
Y (x10^5)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2-Methylphenol
-Acetophenone
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-Naphthalene-D8+
-4-Chloroaniline+
-Caprolactam
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-2,3,4,6-Tetrachlorophenol
-Diethylphthalate
-Fluorene-D10+
-4-Nitroaniline+
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-3,3'-Dichlorobenzidine+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2133
Lab ID : WG225084-3
Analytical Date: 03/20/18 21:48
Lab File ID : N8045.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 03/16/18 11:59 03/16/18 14:38
Column ID:

Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.01111	1.03905	1.03905	0.010	2.76404	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	2.02083	0.79307	0.010	1.04169	20.00000	Quadratic	
45 Acenaphthylene	2.12228	2.18736	2.18736	0.010	3.06664	20.00000	Averaged	
48 Acenaphthene	1.38593	1.41466	1.41466	0.010	2.07331	20.01000	Averaged	
56 Fluorene	1.42266	1.43869	1.43869	0.010	1.12658	20.00000	Averaged	
66 Phenanthrene	1.23601	1.24024	1.24024	0.010	0.34174	20.00000	Averaged	
67 Anthracene	1.38106	1.29799	1.29799	0.010	-6.01497	20.00000	Averaged	
70 Fluoranthene	1.16197	1.11911	1.11911	0.010	-3.68900	20.01000	Averaged	
72 Pyrene	2.46105	2.26121	2.26121	0.010	-8.12019	20.00000	Averaged	
74 Benzo(a)anthracene	1.40030	1.37260	1.37260	0.010	-1.97789	20.00000	Averaged	
77 Chrysene	2.00000	1.96806	1.51955	0.010	-1.59708	20.00000	Linear	
80 Benzo(b)fluoranthene	1.32852	1.40539	1.40539	0.010	5.78610	20.00000	Averaged	
81 Benzo(k)fluoranthene	1.83600	1.81215	1.81215	0.010	-1.29924	20.00000	Averaged	
82 Benzo(a)pyrene	1.32739	1.24622	1.24622	0.010	-6.11523	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.95733	0.66387	0.66387	0.010	-30.65431	20.00000	Averaged	*
86 Dibenzo(a,h)anthracene	0.91800	0.70540	0.70540	0.010	-23.15902	20.00000	Averaged	*
87 Benzo(g,h,i)perylene	1.15375	0.90710	0.90710	0.010	-21.37798	20.00000	Averaged	*
32 2-Methylnaphthalene-D10	0.47066	0.49469	0.49469	0.010	5.10662	20.00000	Averaged	
55 Fluorene-D10	0.98542	0.97017	0.97017	0.010	-1.54739	20.00000	Averaged	
71 Pyrene-D10	1.41288	1.29109	1.29109	0.010	-8.62034	20.00000	Averaged	

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8045.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8045.D
Lab Smp Id: WG225084-3
Inj Date : 20-MAR-2018 21:48 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225084-3,SL2133
Misc Info : WG225084,WG225084,WG224895-4,SL2133-1
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

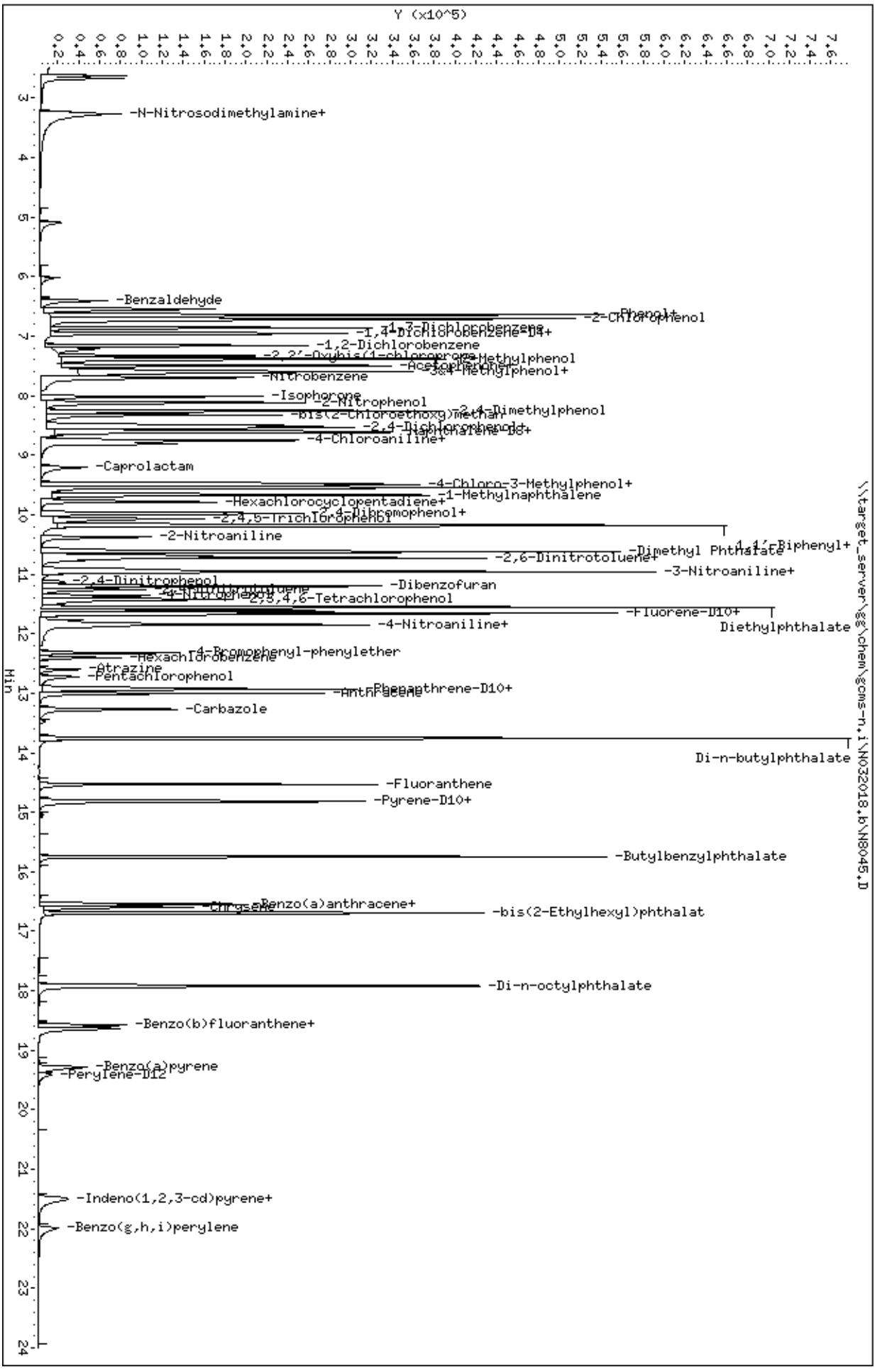
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	53555	0.80000	(a)	
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	178719	0.80000	(a)	
	27 Naphthalene	128	8.621	8.611	(1.004)	464247	2.00000	2.06	
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.107)	221027	2.00000	2.10	
	33 2-Methylnaphthalene	142	9.547	9.547	(1.111)	354343	2.00000	2.02	
	45 Acenaphthylene	152	10.730	10.730	(0.983)	398247	2.00000	2.06	
*	47 Acenaphthene-D10	164	10.915	10.926	(1.000)	72827	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.959	(1.004)	257564	2.00000	2.04	
$	55 Fluorene-D10	174	11.623	11.623	(1.065)	176637	2.00000	1.97	
	56 Fluorene	166	11.656	11.656	(1.068)	261939	2.00000	2.02	
*	65 Phenanthrene-D10	188	12.895	12.906	(1.000)	101327	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.927	(1.002)	314174	2.00000	2.01	
	67 Anthracene	178	13.002	13.002	(1.008)	328804	2.00000	1.88	
	70 Fluoranthene	202	14.527	14.527	(1.127)	283489	2.00000	1.93	
$	71 Pyrene-D10	212	14.799	14.799	(0.894)	168264	2.00000	1.83	
	72 Pyrene	202	14.818	14.827	(0.895)	294698	2.00000	1.84	
	74 Benzo(a)anthracene	228	16.535	16.544	(0.999)	178888	2.00000	1.96	
*	76 Chrysene-D12	240	16.554	16.563	(1.000)	52131	0.80000	(a)	
	77 Chrysene	228	16.591	16.601	(1.002)	198039	2.00000	1.97	
	80 Benzo(b)fluoranthene	252	18.571	18.582	(0.957)	126822	2.00000	2.12	

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8045.D
Report Date: 26-Mar-2018 14:17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	81 Benzo(k)fluoranthene	252	18.628	18.639	(0.960)	163528	2.00000	1.97(H)	
	82 Benzo(a)pyrene	252	19.286	19.286	(0.994)	112459	2.00000	1.88	
*	83 Perylene-D12	264	19.411	19.422	(1.000)	36096	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.478	21.489	(1.297)	86520	2.00000	1.39	
	86 Dibenzo(a,h)anthracene	278	21.512	21.523	(1.108)	63655	2.00000	1.54	
	87 Benzo(g,h,i)perylene	276	21.989	22.012	(1.133)	81857	2.00000	1.57	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N032018,b\N8045.D
Date : 20-MAR-2018 21:48
Client ID:
Sample Info: WG225084-3,SL2133
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032018,b\N8045.D
Y (x10^5)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropane
-Acetophenone
-2-Methylphenol
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-Naphthalene-D8+
-4-Chloroaniline+
-Caprolactam
-4-Chloro-3-Methylphenol+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4-Dibromophenol+
-2,4,5-Trichlorophenol
-2-Nitroaniline
-4,4'-Biphenyl+
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran
-4-Nitrophenol
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
Diethylphthalate
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene+
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225136-9
Lab File ID : N8072.D
Initial Calibration Date(s): 03/21/18 10:57 03/21/18 13:37

SDG: SL2133
Analytical Date: 03/21/18 22:17
Instrument ID: GCMS-N
Column ID:

Compound	$\overline{RRF}$/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
27 Naphthalene	1.05713	1.04946	1.04946	0.010	-0.72594	20.00000	Averaged
33 2-Methylnaphthalene	2.00000	2.09184	0.78330	0.010	4.59221	20.00000	Linear
45 Acenaphthylene	2.20175	2.28897	2.28897	0.010	3.96098	20.00000	Averaged
48 Acenaphthene	1.42284	1.43003	1.43003	0.010	0.50502	20.01000	Averaged
56 Fluorene	1.49695	1.55321	1.55321	0.010	3.75856	20.00000	Averaged
66 Phenanthrene	1.30146	1.27634	1.27634	0.010	-1.93004	20.00000	Averaged
67 Anthracene	1.33131	1.35260	1.35260	0.010	1.59943	20.00000	Averaged
70 Fluoranthene	1.10779	1.07148	1.07148	0.010	-3.27817	20.01000	Averaged
72 Pyrene	2.92968	3.19478	3.19478	0.010	9.04894	20.00000	Averaged
74 Benzo(a)anthracene	1.47526	1.39977	1.39977	0.010	-5.11707	20.00000	Averaged
77 Chrysene	2.00000	2.13570	1.60234	0.010	6.78503	20.00000	Linear
80 Benzo(b)fluoranthene	1.67632	1.55912	1.55912	0.010	-6.99136	20.00000	Averaged
81 Benzo(k)fluoranthene	2.00000	2.13220	2.03153	0.010	6.60989	20.00000	Linear
82 Benzo(a)pyrene	1.36060	1.25297	1.25297	0.010	-7.91104	20.01000	Averaged
85 Indeno(1,2,3-cd)pyrene	0.45194	0.38971	0.38971	0.010	-13.77030	20.00000	Averaged
86 Dibenzo(a,h)anthracene	0.59189	0.58650	0.58650	0.010	-0.91017	20.00000	Averaged
87 Benzo(g,h,i)perylene	0.82999	0.84592	0.84592	0.010	1.91875	20.00000	Averaged
32 2-Methylnaphthalene-D10	0.47851	0.48981	0.48981	0.010	2.36097	20.00000	Averaged
55 Fluorene-D10	0.97823	1.00001	1.00001	0.010	2.22602	20.00000	Averaged
71 Pyrene-D10	1.60397	1.83090	1.83090	0.010	14.14849	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8072.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8072.D
Lab Smp Id: WG225136-9
Inj Date : 21-MAR-2018 22:17 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225136-9,SL2133
Misc Info : WG225136,WG225136,WG225136-4,SL2133-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.930	(1.000)	63632	0.80000	(a)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	206220	0.80000	(a)	
	27 Naphthalene	128	8.611	8.611	(1.002)	541047	2.00000	1.98(a)	
$	32 2-Methylnaphthalene-D10	152	9.498	9.498	(1.106)	252519	2.00000	2.05	
	33 2-Methylnaphthalene	142	9.547	9.537	(1.111)	403832	2.00000	2.09(a)	
	45 Acenaphthylene	152	10.719	10.719	(0.982)	496368	2.00000	2.08(a)	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	86741	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.948	(1.004)	310105	2.00000	2.01(a)	
$	55 Fluorene-D10	174	11.612	11.612	(1.064)	216854	2.00000	2.04	
	56 Fluorene	166	11.656	11.645	(1.068)	336818	2.00000	2.08(a)	
*	65 Phenanthrene-D10	188	12.895	12.895	(1.000)	129377	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.916	(1.002)	412824	2.00000	1.96(a)	
	67 Anthracene	178	13.002	12.991	(1.008)	437489	2.00000	2.03(a)	
	70 Fluoranthene	202	14.527	14.518	(1.127)	346562	2.00000	1.93(a)	
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	204228	2.00000	2.28	
	72 Pyrene	202	14.818	14.809	(0.895)	356362	2.00000	2.18(a)	
	74 Benzo(a)anthracene	228	16.544	16.535	(0.999)	156137	2.00000	1.90(a)	
*	76 Chrysene-D12	240	16.554	16.544	(1.000)	44618	0.80000	(a)	
	77 Chrysene	228	16.601	16.591	(1.003)	178733	2.00000	2.14(a)	
	80 Benzo(b)fluoranthene	252	18.582	18.571	(0.957)	80096	2.00000	1.86(a)	

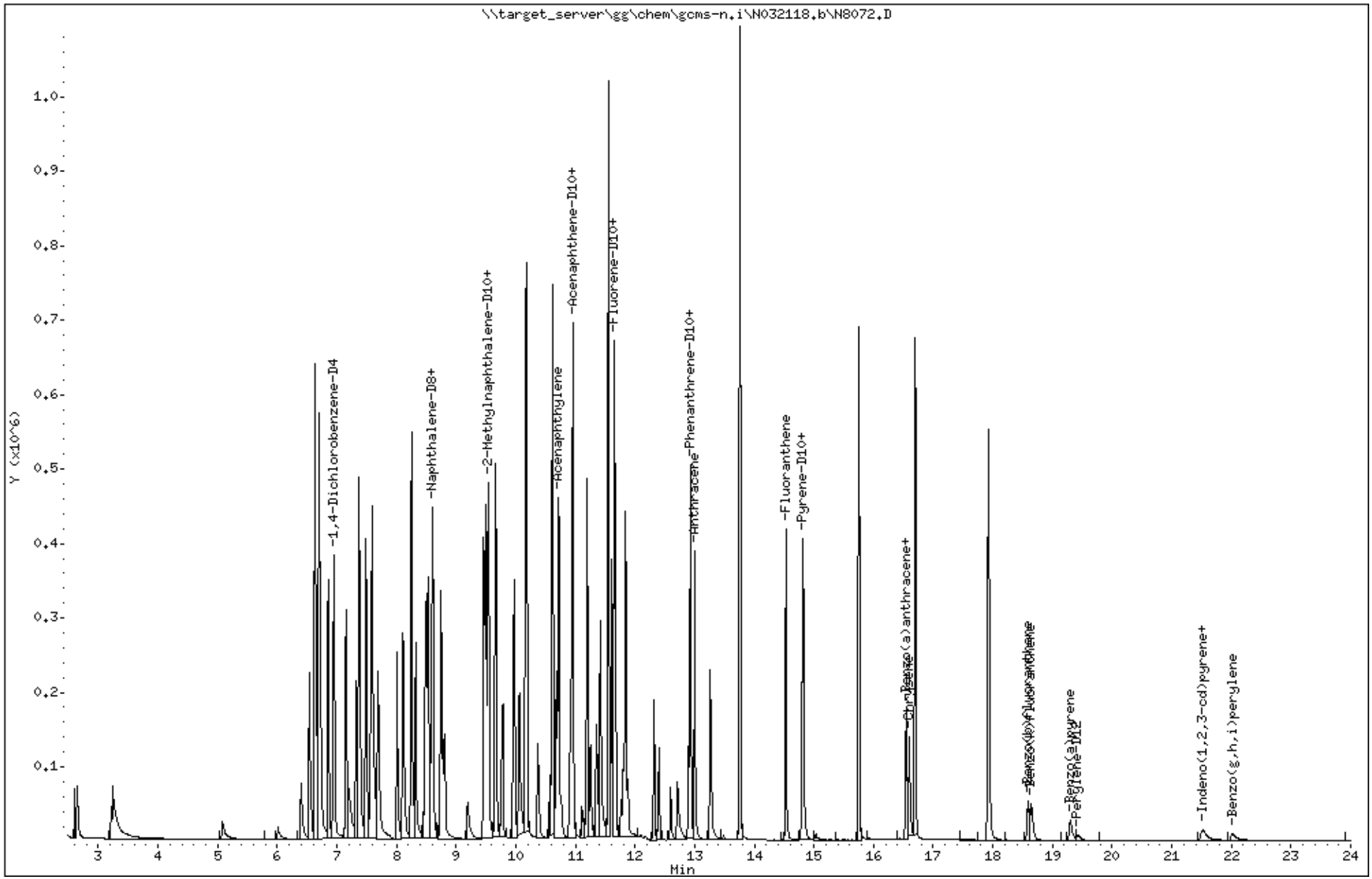
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8072.D
Report Date: 26-Mar-2018 14:19

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	18.639	18.616	(0.960)	104365	2.00000	2.13(aH)	
82	Benzo(a)pyrene	252	19.298	19.263	(0.994)	64368	2.00000	1.84(a)	
* 83	Perylene-D12	264	19.423	19.400	(1.000)	20549	0.80000	(a)	
85	Indeno(1,2,3-cd)pyrene	276	21.512	21.467	(1.300)	43470	2.00000	1.72(a)	
86	Dibenzo(a,h)anthracene	278	21.546	21.501	(1.109)	30130	2.00000	1.98(a)	
87	Benzo(g,h,i)perylene	276	22.023	21.978	(1.134)	43457	2.00000	2.04(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8072.D
Date : 21-MAR-2018 22:17
Client ID:
Instrument: gcms-n.i
Sample Info: WG225136-9,SL2133
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 1000218

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225233-2
Lab File ID : N8083.D
Initial Calibration Date(s): 03/21/18 10:57 03/21/18 13:37

SDG: SL2133
Analytical Date: 03/22/18 09:54
Instrument ID: GCMS-N
Column ID:

Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.05713	1.06689	1.06689	0.010	0.92335	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	2.01527	0.75784	0.010	0.76340	20.00000	Linear	
45 Acenaphthylene	2.20175	2.21107	2.21107	0.010	0.42301	20.00000	Averaged	
48 Acenaphthene	1.42284	1.40130	1.40130	0.010	-1.51421	20.01000	Averaged	
56 Fluorene	1.49695	1.50895	1.50895	0.010	0.80139	20.00000	Averaged	
66 Phenanthrene	1.30146	1.33436	1.33436	0.010	2.52803	20.00000	Averaged	
67 Anthracene	1.33131	1.34012	1.34012	0.010	0.66208	20.00000	Averaged	
70 Fluoranthene	1.10779	1.06078	1.06078	0.010	-4.24369	20.01000	Averaged	
72 Pyrene	2.92968	2.99087	2.99087	0.010	2.08879	20.00000	Averaged	
74 Benzo(a)anthracene	1.47526	1.45613	1.45613	0.010	-1.29666	20.00000	Averaged	
77 Chrysene	2.00000	2.00905	1.51440	0.010	0.45245	20.00000	Linear	
80 Benzo(b)fluoranthene	1.67632	1.55944	1.55944	0.010	-6.97222	20.00000	Averaged	
81 Benzo(k)fluoranthene	2.00000	1.85051	1.78148	0.010	-7.47468	20.00000	Linear	
82 Benzo(a)pyrene	1.36060	1.26986	1.26986	0.010	-6.66911	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.45194	0.58072	0.58072	0.010	28.49495	20.00000	Averaged	*
86 Dibenzo(a,h)anthracene	0.59189	0.65434	0.65434	0.010	10.55111	20.00000	Averaged	
87 Benzo(g,h,i)perylene	0.82999	0.92094	0.92094	0.010	10.95798	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.47851	0.48944	0.48944	0.010	2.28390	20.00000	Averaged	
55 Fluorene-D10	0.97823	0.98849	0.98849	0.010	1.04832	20.00000	Averaged	
71 Pyrene-D10	1.60397	1.70002	1.70002	0.010	5.98826	20.00000	Averaged	

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8083.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8083.D
Lab Smp Id: WG225233-2
Inj Date : 22-MAR-2018 09:54 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225233-2,SL2133
Misc Info : WG225233,WG225233,WG225136-4,SL2133-10
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: KATHADIN-50E985

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	76438	0.80000	(a)	
*	26 Naphthalene-D8	136	8.581	8.561	(1.000)	240654	0.80000	(a)	
	27 Naphthalene	128	8.611	8.591	(1.004)	641879	2.00000	2.02	
$	32 2-Methylnaphthalene-D10	152	9.498	9.479	(1.107)	294462	2.00000	2.04	
	33 2-Methylnaphthalene	142	9.537	9.518	(1.111)	455942	2.00000	2.02	
	45 Acenaphthylene	152	10.719	10.697	(0.982)	576304	2.00000	2.01	
*	47 Acenaphthene-D10	164	10.915	10.893	(1.000)	104258	0.80000	(a)	
	48 Acenaphthene	153	10.948	10.937	(1.003)	365241	2.00000	1.97	
$	55 Fluorene-D10	174	11.612	11.591	(1.064)	257644	2.00000	2.02	
	56 Fluorene	166	11.645	11.623	(1.067)	393299	2.00000	2.02	
*	65 Phenanthrene-D10	188	12.895	12.874	(1.000)	145592	0.80000	(a)	
	66 Phenanthrene	178	12.916	12.895	(1.002)	485682	2.00000	2.05	
	67 Anthracene	178	12.991	12.970	(1.007)	487778	2.00000	2.01	
	70 Fluoranthene	202	14.518	14.499	(1.126)	386104	2.00000	1.92	
$	71 Pyrene-D10	212	14.790	14.762	(0.894)	224436	2.00000	2.12	
	72 Pyrene	202	14.809	14.790	(0.895)	394855	2.00000	2.04	
	74 Benzo(a)anthracene	228	16.526	16.498	(0.999)	192238	2.00000	1.97	
*	76 Chrysene-D12	240	16.544	16.516	(1.000)	52808	0.80000	(a)	
	77 Chrysene	228	16.591	16.554	(1.003)	199931	2.00000	2.01	
	80 Benzo(b)fluoranthene	252	18.559	18.526	(0.957)	128771	2.00000	1.86	

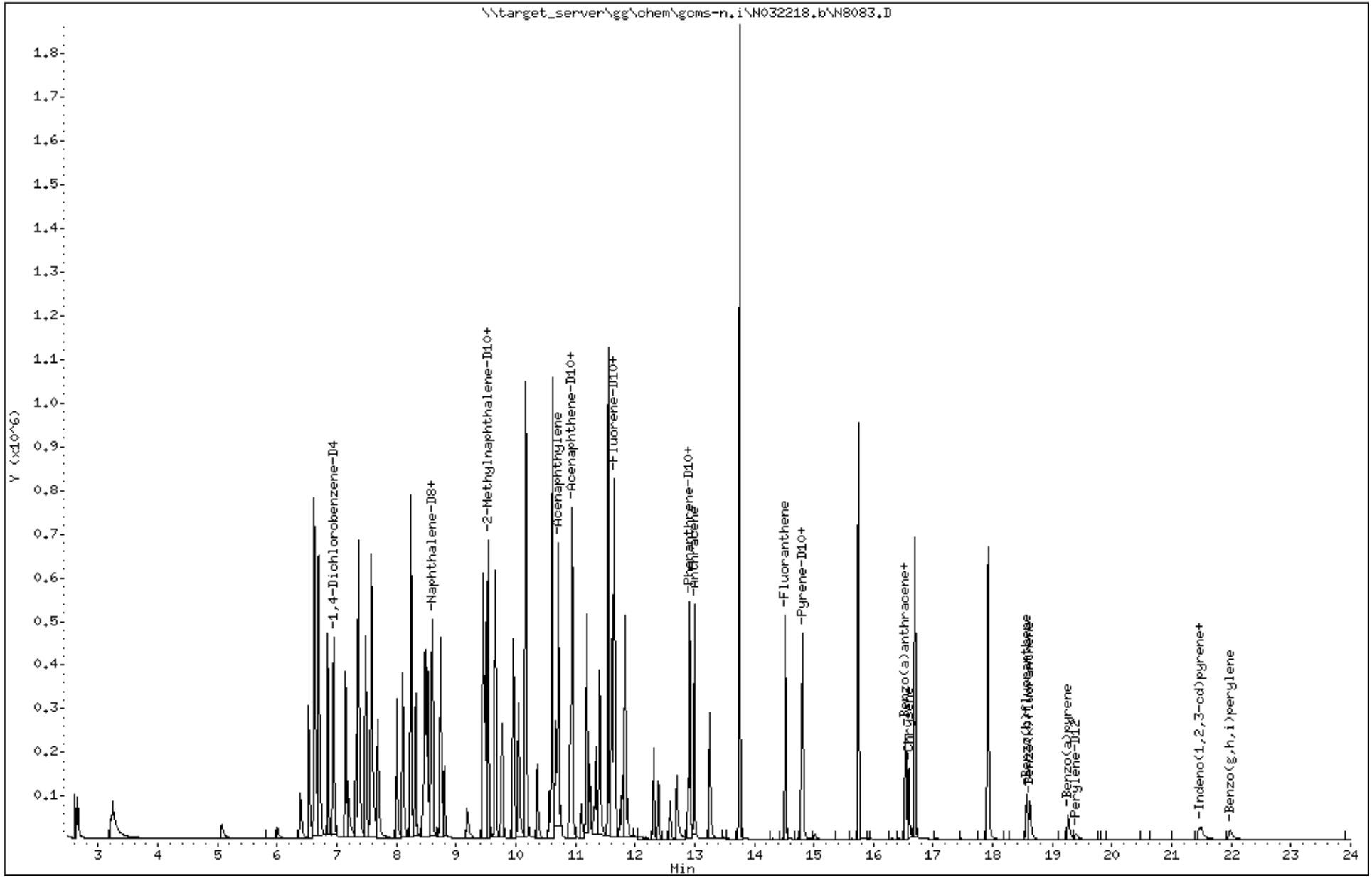
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8083.D
Report Date: 26-Mar-2018 14:23

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	18.616	18.582	(0.960)	147106	2.00000	1.85(H)	
82	Benzo(a)pyrene	252	19.264	19.218	(0.993)	104859	2.00000	1.87	
* 83	Perylene-D12	264	19.400	19.343	(1.000)	33030	0.80000	(a)	
85	Indeno(1,2,3-cd)pyrene	276	21.455	21.410	(1.297)	76667	2.00000	2.57	
86	Dibenzo(a,h)anthracene	278	21.501	21.456	(1.108)	54032	2.00000	2.21	
87	Benzo(g,h,i)perylene	276	21.978	21.921	(1.133)	76047	2.00000	2.22	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8083.D
Date : 22-MAR-2018 09:54
Client ID:
Instrument: gcms-n.i
Sample Info: WG225233-2,SL2133
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 1000222

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2133
Lab ID : WG225233-3
Analytical Date: 03/22/18 21:06
Lab File ID : N8104.D
Instrument ID: GCMS-N
Initial Calibration Date(s): 03/21/18 10:57 03/21/18 13:37
Column ID:

Compound	RRF/Amount	RF2	CCAL RRF2	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
27 Naphthalene	1.05713	1.08615	1.08615	0.010	2.74561	20.00000	Averaged	
33 2-Methylnaphthalene	2.00000	2.03668	0.76496	0.010	1.83404	20.00000	Linear	
45 Acenaphthylene	2.20175	2.19219	2.19219	0.010	-0.43457	20.00000	Averaged	
48 Acenaphthene	1.42284	1.45972	1.45972	0.010	2.59165	20.01000	Averaged	
56 Fluorene	1.49695	1.56720	1.56720	0.010	4.69264	20.00000	Averaged	
66 Phenanthrene	1.30146	1.38957	1.38957	0.010	6.76979	20.00000	Averaged	
67 Anthracene	1.33131	1.40411	1.40411	0.010	5.46804	20.00000	Averaged	
70 Fluoranthene	1.10779	1.12390	1.12390	0.010	1.45357	20.01000	Averaged	
72 Pyrene	2.92968	2.91571	2.91571	0.010	-0.47685	20.00000	Averaged	
74 Benzo(a)anthracene	1.47526	1.42288	1.42288	0.010	-3.55020	20.00000	Averaged	
77 Chrysene	2.00000	2.02678	1.52671	0.010	1.33878	20.00000	Linear	
80 Benzo(b)fluoranthene	1.67632	1.39901	1.39901	0.010	-16.54286	20.00000	Averaged	
81 Benzo(k)fluoranthene	2.00000	1.96482	1.88296	0.010	-1.75905	20.00000	Linear	
82 Benzo(a)pyrene	1.36060	1.31571	1.31571	0.010	-3.29970	20.01000	Averaged	
85 Indeno(1,2,3-cd)pyrene	0.45194	0.62009	0.62009	0.010	37.20639	20.00000	Averaged	*
86 Dibenzo(a,h)anthracene	0.59189	0.77256	0.77256	0.010	30.52393	20.00000	Averaged	*
87 Benzo(g,h,i)perylene	0.82999	0.88133	0.88133	0.010	6.18481	20.00000	Averaged	
32 2-Methylnaphthalene-D10	0.47851	0.50681	0.50681	0.010	5.91460	20.00000	Averaged	
55 Fluorene-D10	0.97823	1.00360	1.00360	0.010	2.59383	20.00000	Averaged	
71 Pyrene-D10	1.60397	1.58532	1.58532	0.010	-1.16231	20.00000	Averaged	

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8104.D
Report Date: 26-Mar-2018 14:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8104.D
Lab Smp Id: WG225233-3
Inj Date : 22-MAR-2018 21:06 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225233-3,SL2133
Misc Info : WG225233,WG225233,WG225136-4,SL2133-10
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

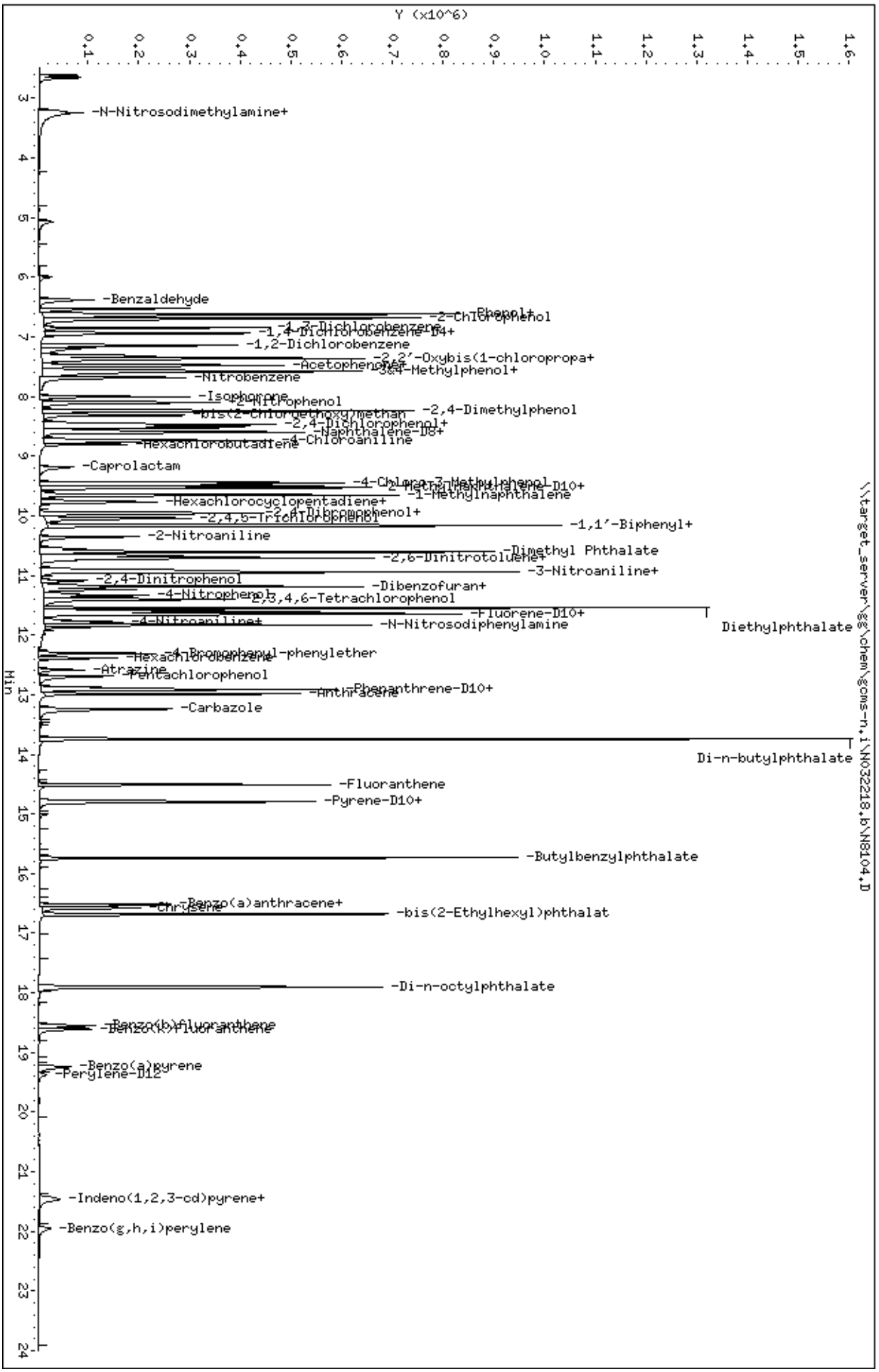
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	77265	0.80000	(a)	
*	26 Naphthalene-D8	136	8.581	8.561	(1.000)	245997	0.80000	(a)	
	27 Naphthalene	128	8.601	8.591	(1.002)	667977	2.00000	2.05	
$	32 2-Methylnaphthalene-D10	152	9.488	9.479	(1.106)	311684	2.00000	2.12	
	33 2-Methylnaphthalene	142	9.527	9.518	(1.110)	470444	2.00000	2.04	
	45 Acenaphthylene	152	10.708	10.697	(0.982)	595946	2.00000	1.99	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	108740	0.80000	(a)	
	48 Acenaphthene	153	10.948	10.937	(1.004)	396824	2.00000	2.05	
$	55 Fluorene-D10	174	11.601	11.591	(1.064)	272830	2.00000	2.05	
	56 Fluorene	166	11.645	11.623	(1.068)	426042	2.00000	2.09	
*	65 Phenanthrene-D10	188	12.884	12.874	(1.000)	160431	0.80000	(a)	
	66 Phenanthrene	178	12.916	12.895	(1.002)	557325	2.00000	2.14	
	67 Anthracene	178	12.980	12.970	(1.007)	563155	2.00000	2.11	
	70 Fluoranthene	202	14.508	14.499	(1.126)	450770	2.00000	2.03	
$	71 Pyrene-D10	212	14.780	14.762	(0.894)	248963	2.00000	1.98	
	72 Pyrene	202	14.799	14.790	(0.895)	457890	2.00000	1.99	
	74 Benzo(a)anthracene	228	16.516	16.498	(0.999)	223453	2.00000	1.93	
*	76 Chrysene-D12	240	16.535	16.516	(1.000)	62817	0.80000	(a)	
	77 Chrysene	228	16.572	16.554	(1.002)	239758	2.00000	2.03	
	80 Benzo(b)fluoranthene	252	18.548	18.526	(0.957)	136155	2.00000	1.67	

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8104.D
Report Date: 26-Mar-2018 14:29

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
81	Benzo(k)fluoranthene	252	18.605	18.582	(0.960)	183254	2.00000	1.96(H)	
82	Benzo(a)pyrene	252	19.241	19.218	(0.993)	128048	2.00000	1.93	
* 83	Perylene-D12	264	19.377	19.343	(1.000)	38929	0.80000	(a)	
85	Indeno(1,2,3-cd)pyrene	276	21.433	21.410	(1.296)	97381	2.00000	2.74	
86	Dibenzo(a,h)anthracene	278	21.478	21.456	(1.108)	75187	2.00000	2.61	
87	Benzo(g,h,i)perylene	276	21.955	21.921	(1.133)	85773	2.00000	2.12	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.


Data File: \\target_server\gg\chem\gcms-n,i\N032218,b\N8104,D
Date : 22-MAR-2018 21:06
Client ID:
Sample Info: WG225233-3,SL2133
Volume Injected (uL): 1.0
Column phase: ZB5-MS
Instrument: gcms-n,i
Operator: JCG
Column diameter: 0.25
\\target_server\gg\chem\gcms-n,i\N032218,b\N8104,D
Y (x10^6)
Min
-N-Nitrosodimethylamine+
-Benzaldehyde
-Phenol+
-2-Chlorophenol
-1,3-Dichlorobenzene
-1,4-Dichlorobenzene-D4+
-1,2-Dichlorobenzene
-2,2'-Oxybis(1-chloropropa+
-Acetophenone
-3&4-Methylphenol+
-Nitrobenzene
-Isophorone
-2-Nitrophenol
-2,4-Dimethylphenol
-bis(2-Chloroethoxy)methan
-2,4-Dichlorophenol+
-Naphthalene-D8+
-4-Chloroaniline
-Hexachlorobutadiene
-Caprolactam
-4-Chloro-3-Methylphenol
-2-Methylnaphthalene-D10+
-1-Methylnaphthalene
-Hexachlorocyclopentadiene+
-2,4,6-Trichlorophenol
-2,4,5-Trichlorophenol
-1,1'-Biphenyl+
-2-Nitroaniline
-Dimethyl Phthalate
-2,6-Dinitrotoluene+
-3-Nitroaniline+
-2,4-Dinitrophenol
-Dibenzofuran+
-4-Nitrophenol
-2,3,4,6-Tetrachlorophenol
-Fluorene-D10+
-4-Nitroaniline+
-N-Nitrosodiphenylamine
Diethylphthalate
-4-Bromophenyl-phenylether
-Hexachlorobenzene
-Atrazine
-Pentachlorophenol
-Phenanthrene-D10+
-Anthracene
-Carbazole
Di-n-butylphthalate
-Fluoranthene
-Pyrene-D10+
-Butylbenzylphthalate
-Benzo(a)anthracene+
-Chrysene
-bis(2-Ethylhexyl)phthalat
-Di-n-octylphthalate
-Benzo(b)fluoranthene
-Benzo(k)fluoranthene
-Benzo(a)pyrene
-Perylene-D12
-Indeno(1,2,3-cd)pyrene+
-Benzo(g,h,i)perylene

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\ND493.D

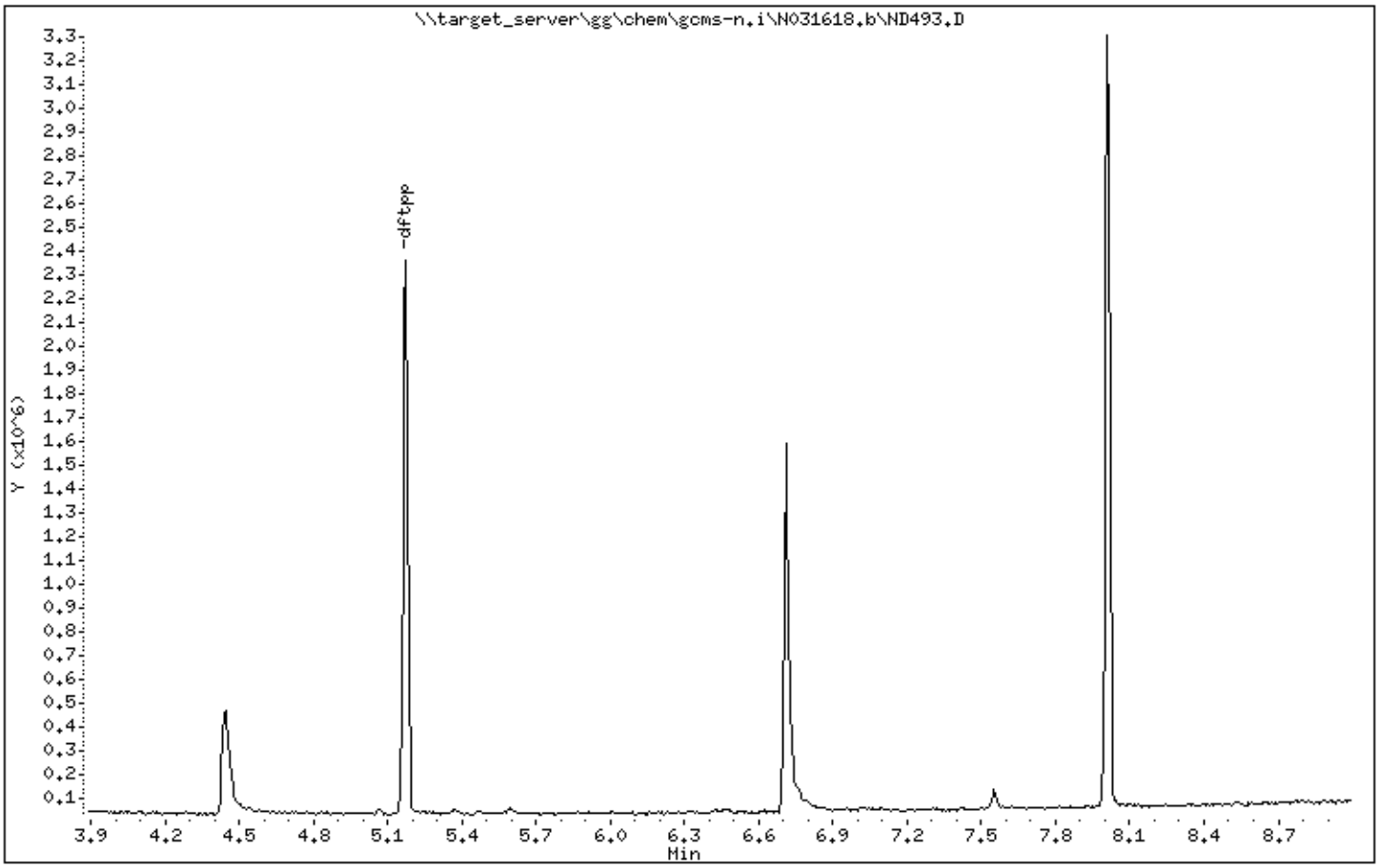
Date : 16-MAR-2018 11:43

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG224895-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\ND493.D

Date : 16-MAR-2018 11:43

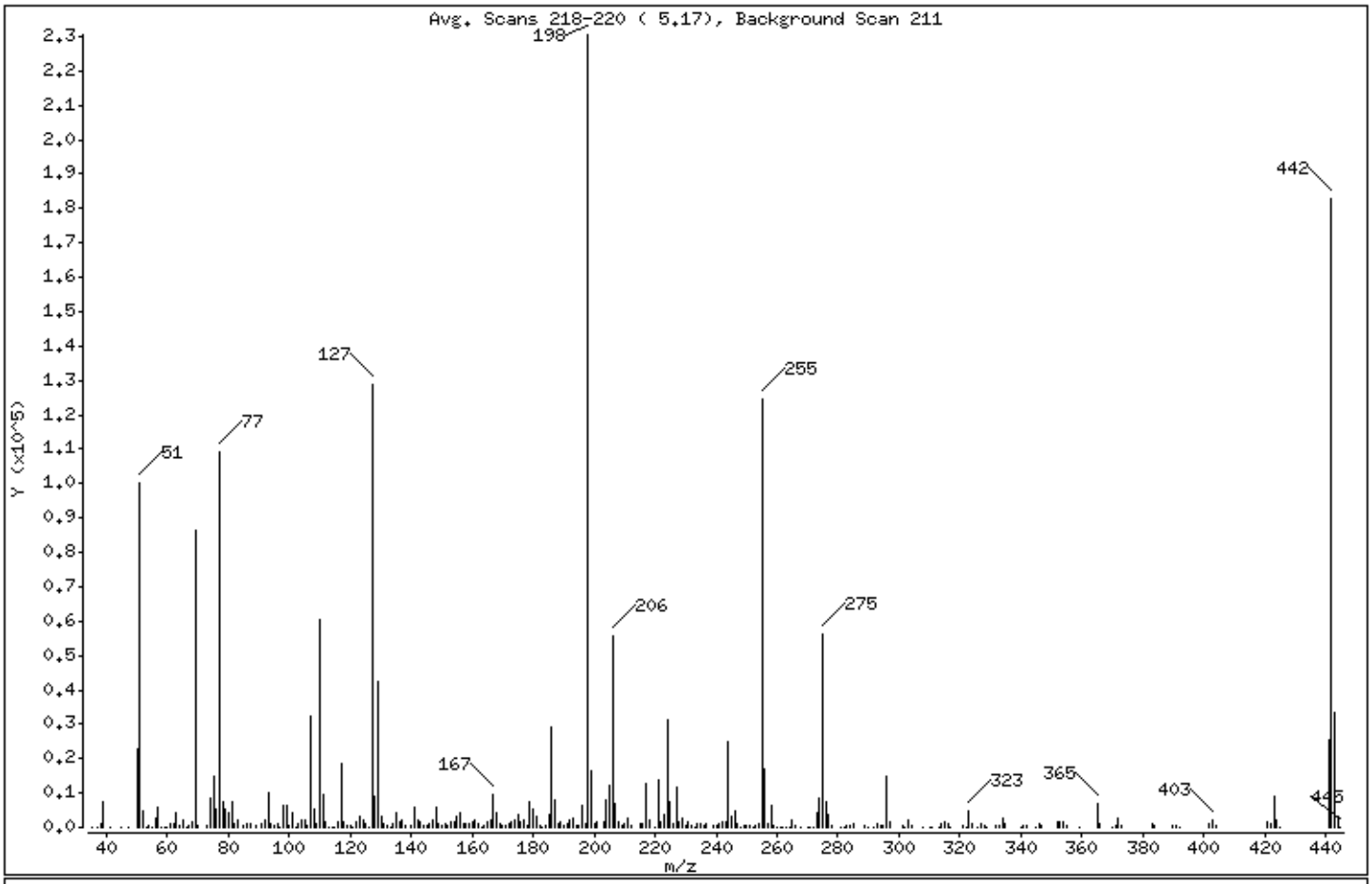
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG224895-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	43.45
68	Less than 2.00% of mass 69	0.62 (1.66)
69	Less than 100.00% of mass 198	37.48
70	Less than 2.00% of mass 69	0.17 (0.44)
127	40.00 - 60.00% of mass 198	55.86
197	Less than 1.00% of mass 198	0.49
199	5.00 - 9.00% of mass 198	7.13
275	10.00 - 30.00% of mass 198	24.33
365	1.00 - 100.00% of mass 198	2.99
441	0.01 - 100.00% of mass 443	11.04 (76.73)
442	40.00 - 100.00% of mass 198	79.34
443	17.00 - 23.00% of mass 442	14.38 (18.13)

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\ND493.D

Date : 16-MAR-2018 11:43

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG224895-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND493.D
Spectrum: Avg. Scans 218-220 (5.17), Background Scan 211
Location of Maximum: 198.00
Number of points: 295

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	60	122.00	1839	197.00	1118	278.00	459
37.00	222	123.00	3138	198.00	230464	281.00	63
38.00	1226	124.00	2146	199.00	16440	282.00	67
39.00	7161	125.00	1140	200.00	1223	283.00	667
41.00	46	126.00	74	201.00	1391	284.00	470
45.00	107	127.00	128728	203.00	1452	285.00	1025
47.00	34	128.00	8779	204.00	7761	289.00	292
50.00	22912	129.00	42304	205.00	12322	290.00	255
51.00	100144	130.00	3350	206.00	55792	292.00	130
52.00	4784	131.00	1122	207.00	6970	293.00	916
53.00	219	132.00	384	208.00	1522	294.00	369
54.00	266	133.00	87	209.00	643	295.00	266
55.00	232	134.00	1257	210.00	1289	296.00	14588
56.00	2503	135.00	4102	211.00	2820	297.00	1511
57.00	6071	136.00	1748	212.00	332	301.00	313
58.00	180	137.00	1863	215.00	881	302.00	215
59.00	182	138.00	635	216.00	1161	303.00	2215
60.00	36	140.00	747	217.00	12741	304.00	401
61.00	938	141.00	5659	218.00	1876	308.00	140
62.00	1021	142.00	2203	220.00	257	310.00	119
63.00	4364	143.00	1494	221.00	13919	311.00	52
64.00	636	144.00	349	222.00	1377	313.00	62
65.00	2101	145.00	483	223.00	3484	314.00	947
66.00	171	146.00	1039	224.00	31304	315.00	1510
67.00	329	147.00	1954	225.00	7217	316.00	924
68.00	1432	148.00	5839	226.00	986	317.00	148
69.00	86368	149.00	1248	227.00	11870	321.00	676
70.00	381	150.00	482	228.00	1781	322.00	193
73.00	436	151.00	849	229.00	2782	323.00	4678
74.00	8406	152.00	540	230.00	604	324.00	1136
75.00	14743	153.00	1792	231.00	1393	326.00	99
76.00	5121	154.00	1490	232.00	320	327.00	1007
77.00	109336	155.00	3370	233.00	195	328.00	572
78.00	7445	156.00	4327	234.00	834	329.00	163
79.00	5534	157.00	1078	235.00	1143	332.00	409

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\ND493.D

Date : 16-MAR-2018 11:43

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG224895-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND493.D
Spectrum: Avg. Scans 218-220 (5.17), Background Scan 211
Location of Maximum: 198.00
Number of points: 295

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	4488	158.00	960	236.00	519	333.00	685
81.00	7442	159.00	1161	237.00	926	334.00	2763
82.00	1313	160.00	1822	239.00	521	335.00	931
83.00	2044	161.00	2141	240.00	435	340.00	187
85.00	785	162.00	951	241.00	837	341.00	553
86.00	1040	163.00	213	242.00	1686	342.00	266
87.00	1054	164.00	558	243.00	1737	345.00	88
89.00	418	165.00	1644	244.00	24904	346.00	1049
91.00	1291	166.00	2210	245.00	3009	347.00	311
92.00	2107	167.00	9382	246.00	4801	352.00	1492
93.00	9977	168.00	4063	247.00	918	353.00	1326
94.00	812	169.00	803	248.00	159	354.00	1327
95.00	291	170.00	373	249.00	644	355.00	477
96.00	956	171.00	556	250.00	282	359.00	103
97.00	38	172.00	1001	251.00	348	365.00	6902
98.00	6448	173.00	1329	252.00	179	366.00	841
99.00	6448	174.00	2253	253.00	702	370.00	203
100.00	694	175.00	3755	254.00	1135	371.00	388
101.00	4026	176.00	1483	255.00	124296	372.00	2782
102.00	234	177.00	1881	256.00	17144	373.00	550
103.00	1062	178.00	556	257.00	1052	383.00	958
104.00	2362	179.00	7662	258.00	6121	384.00	325
105.00	2073	180.00	5095	259.00	582	390.00	425
106.00	434	181.00	3265	260.00	66	391.00	397
107.00	32296	182.00	646	261.00	224	392.00	225
108.00	5164	183.00	224	262.00	51	402.00	1151
109.00	1320	184.00	731	263.00	50	403.00	1924
110.00	60216	185.00	3775	264.00	137	404.00	610
111.00	9369	186.00	29088	265.00	2253	421.00	1769
112.00	1467	187.00	8054	266.00	683	422.00	1007
113.00	259	188.00	936	268.00	139	423.00	9247
114.00	141	189.00	1712	270.00	151	424.00	2017
115.00	119	190.00	381	271.00	72	425.00	81
116.00	1585	191.00	967	272.00	153	441.00	25432
117.00	18568	192.00	2100	273.00	4028	442.00	182848

Data File: \\target_server\gg\chem\gcms-n.i\N031618.b\ND493.D

Date : 16-MAR-2018 11:43

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG224895-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND493.D
Spectrum: Avg. Scans 218-220 (5.17), Background Scan 211
Location of Maximum: 198.00
Number of points: 295

m/z	Y	m/z	Y	m/z	Y	m/z	Y
118.00	1644	193.00	2481	274.00	8676	443.00	33144
119.00	266	194.00	589	275.00	56072	444.00	3244
120.00	573	195.00	344	276.00	7522	445.00	114
121.00	168	196.00	6142	277.00	3557		

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\ND495.D

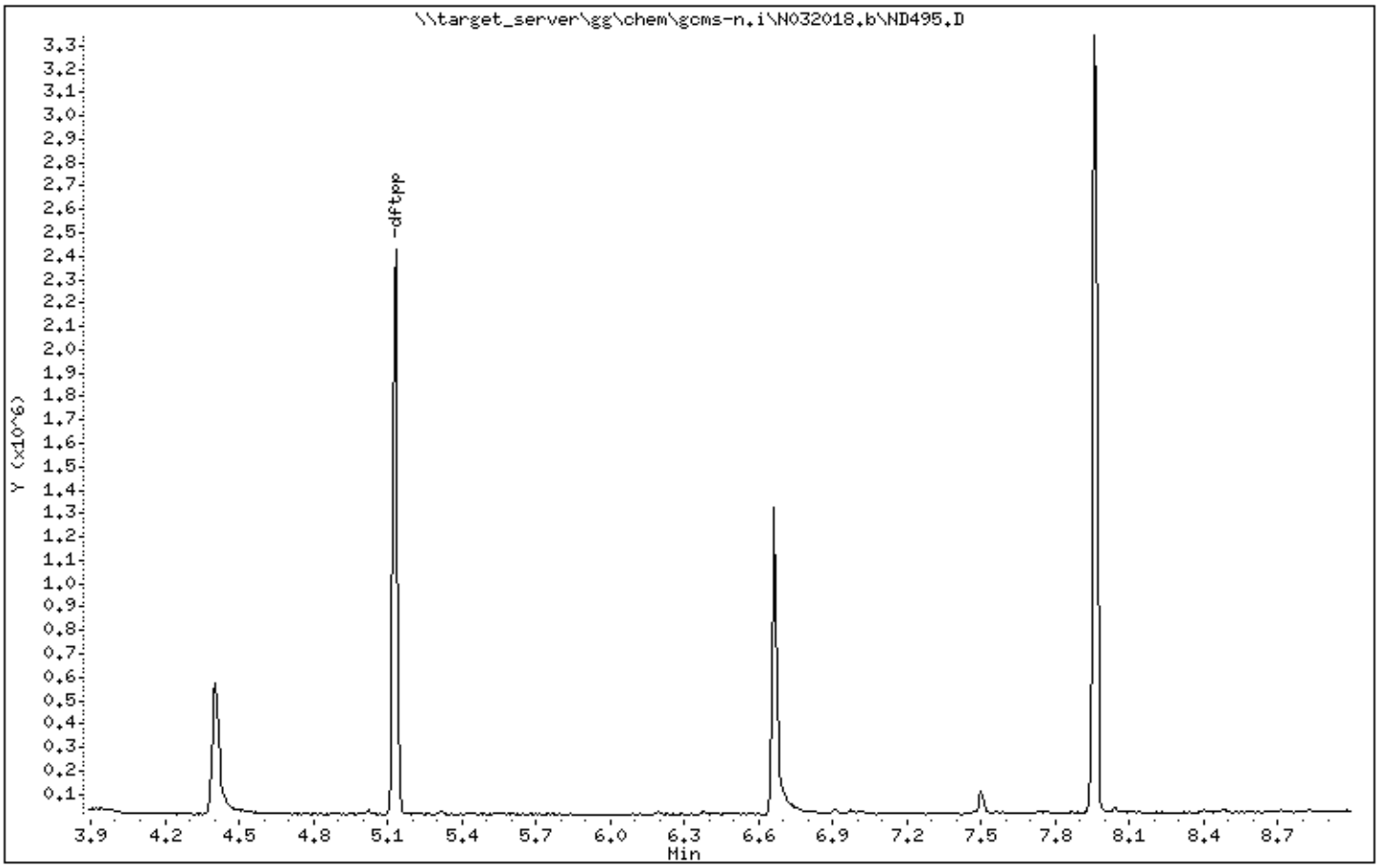
Date : 20-MAR-2018 10:23

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225084-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\ND495.D

Date : 20-MAR-2018 10:23

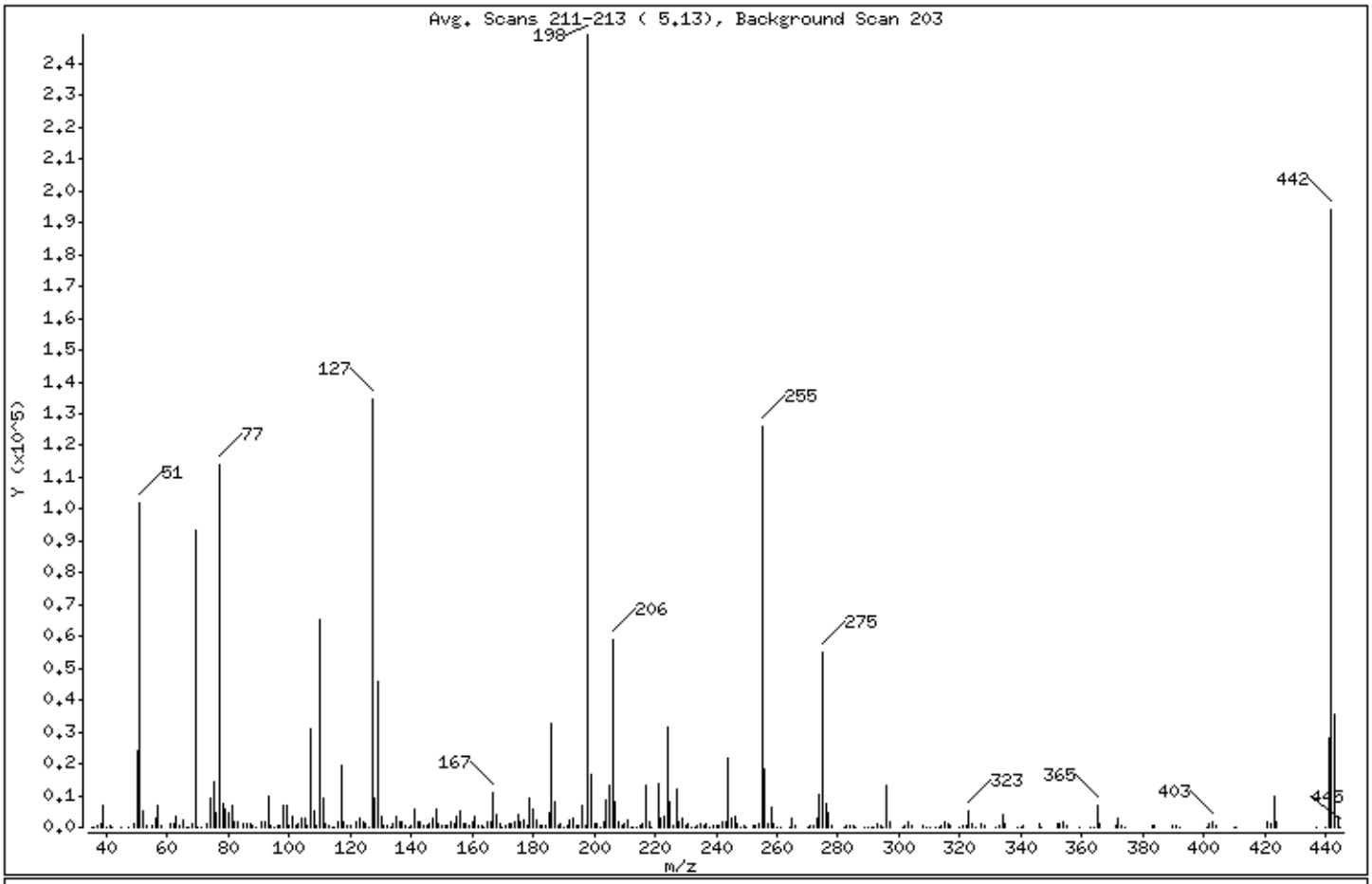
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225084-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	40.95
68	Less than 2.00% of mass 69	0.51 (1.35)
69	Less than 100.00% of mass 198	37.54
70	Less than 2.00% of mass 69	0.08 (0.21)
127	40.00 - 60.00% of mass 198	53.92
197	Less than 1.00% of mass 198	0.30
199	5.00 - 9.00% of mass 198	6.69
275	10.00 - 30.00% of mass 198	22.00
365	1.00 - 100.00% of mass 198	2.68
441	0.01 - 100.00% of mass 443	11.36 (80.16)
442	40.00 - 100.00% of mass 198	77.86
443	17.00 - 23.00% of mass 442	14.18 (18.21)

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\ND495.D

Date : 20-MAR-2018 10:23

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225084-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND495.D
Spectrum: Avg. Scans 211-213 (5.13), Background Scan 203
Location of Maximum: 198.00
Number of points: 305

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	117	123.00	3092	200.00	1411	289.00	134
36.00	133	124.00	1506	201.00	1276	290.00	227
37.00	398	125.00	1303	202.00	247	291.00	81
38.00	1152	126.00	193	203.00	1673	292.00	233
39.00	6996	127.00	134336	204.00	8745	293.00	1074
40.00	19	128.00	9203	205.00	13289	294.00	346
41.00	499	129.00	45880	206.00	58792	295.00	213
42.00	51	130.00	3571	207.00	8057	296.00	13075
45.00	264	131.00	789	208.00	1439	297.00	1797
47.00	101	132.00	400	209.00	534	301.00	182
49.00	899	133.00	217	210.00	1204	302.00	378
50.00	24336	134.00	1100	211.00	2197	303.00	1563
51.00	102040	135.00	3631	212.00	208	304.00	472
52.00	5429	136.00	1729	213.00	120	308.00	376
53.00	391	137.00	1728	214.00	205	309.00	66
55.00	301	138.00	448	215.00	699	310.00	112
56.00	3054	139.00	227	216.00	1419	312.00	129
57.00	6960	140.00	515	217.00	12938	313.00	72
58.00	317	141.00	5457	218.00	1810	314.00	488
61.00	1039	142.00	1954	219.00	207	315.00	1678
62.00	1143	143.00	1506	221.00	13534	316.00	1026
63.00	3525	144.00	340	222.00	2952	317.00	382
64.00	623	145.00	480	223.00	3211	320.00	64
65.00	2284	146.00	920	224.00	31768	321.00	551
66.00	66	147.00	2906	225.00	8274	322.00	486
67.00	153	148.00	5729	226.00	761	323.00	4948
68.00	1265	149.00	1068	227.00	11861	324.00	1162
69.00	93528	150.00	491	228.00	1927	325.00	59
70.00	194	151.00	579	229.00	2964	327.00	1011
71.00	74	152.00	419	230.00	435	328.00	546
73.00	948	153.00	1900	231.00	1337	332.00	273
74.00	9333	154.00	1382	232.00	276	333.00	704
75.00	14437	155.00	3167	233.00	164	334.00	3817
76.00	4813	156.00	5163	234.00	506	335.00	871
77.00	114024	157.00	1184	235.00	996	339.00	61

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\ND495.D

Date : 20-MAR-2018 10:23

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225084-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND495.D
Spectrum: Avg. Scans 211-213 (5.13), Background Scan 203
Location of Maximum: 198.00
Number of points: 305

m/z	Y	m/z	Y	m/z	Y	m/z	Y
78.00	7599	158.00	1118	236.00	402	340.00	63
79.00	5546	159.00	846	237.00	942	341.00	546
80.00	4357	160.00	1544	238.00	243	346.00	1259
81.00	7114	161.00	3430	239.00	343	347.00	180
82.00	1643	162.00	797	240.00	322	352.00	1396
83.00	1770	163.00	628	241.00	762	353.00	1358
85.00	1233	164.00	123	242.00	1458	354.00	1661
86.00	899	165.00	1730	243.00	1573	355.00	291
87.00	1164	166.00	1498	244.00	21728	359.00	192
88.00	373	167.00	10647	245.00	2767	363.00	55
89.00	208	168.00	4295	246.00	3705	364.00	224
91.00	1633	169.00	958	247.00	982	365.00	6666
92.00	1701	170.00	219	248.00	213	366.00	904
93.00	9943	171.00	472	249.00	846	371.00	508
94.00	660	172.00	1300	250.00	184	372.00	2985
95.00	7	173.00	1165	252.00	466	373.00	698
96.00	778	174.00	1842	253.00	429	374.00	69
97.00	425	175.00	3920	254.00	1033	383.00	852
98.00	6658	176.00	1790	255.00	126088	384.00	383
99.00	6941	177.00	2064	256.00	18608	390.00	449
100.00	795	178.00	468	257.00	1312	391.00	345
101.00	3686	179.00	9165	258.00	6465	392.00	264
102.00	291	180.00	6008	259.00	1140	401.00	144
103.00	1221	181.00	2199	260.00	56	402.00	1207
104.00	2818	182.00	602	261.00	187	403.00	1728
105.00	2673	183.00	316	264.00	210	404.00	492
106.00	737	184.00	490	265.00	2904	410.00	102
107.00	30768	185.00	4378	266.00	453	411.00	53
108.00	4935	186.00	32776	270.00	157	421.00	1485
109.00	784	187.00	7888	271.00	417	422.00	1377
110.00	65312	188.00	788	272.00	374	423.00	9496
111.00	8895	189.00	1394	273.00	2929	424.00	1927
112.00	996	190.00	59	274.00	10031	437.00	85
113.00	432	191.00	676	275.00	54824	440.00	63
114.00	60	192.00	2248	276.00	7195	441.00	28312

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\ND495.D

Date : 20-MAR-2018 10:23

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225084-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND495.D
Spectrum: Avg. Scans 211-213 (5.13), Background Scan 203
Location of Maximum: 198.00
Number of points: 305

m/z	Y	m/z	Y	m/z	Y	m/z	Y
115.00	275	193.00	2831	277.00	4479	442.00	193984
116.00	1524	194.00	657	278.00	531	443.00	35320
117.00	19712	195.00	325	282.00	61	444.00	3059
118.00	1763	196.00	7079	283.00	654	445.00	253
119.00	368	197.00	748	284.00	571		
120.00	500	198.00	249152	285.00	846		
122.00	1776	199.00	16664	286.00	183		

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\ND496.D

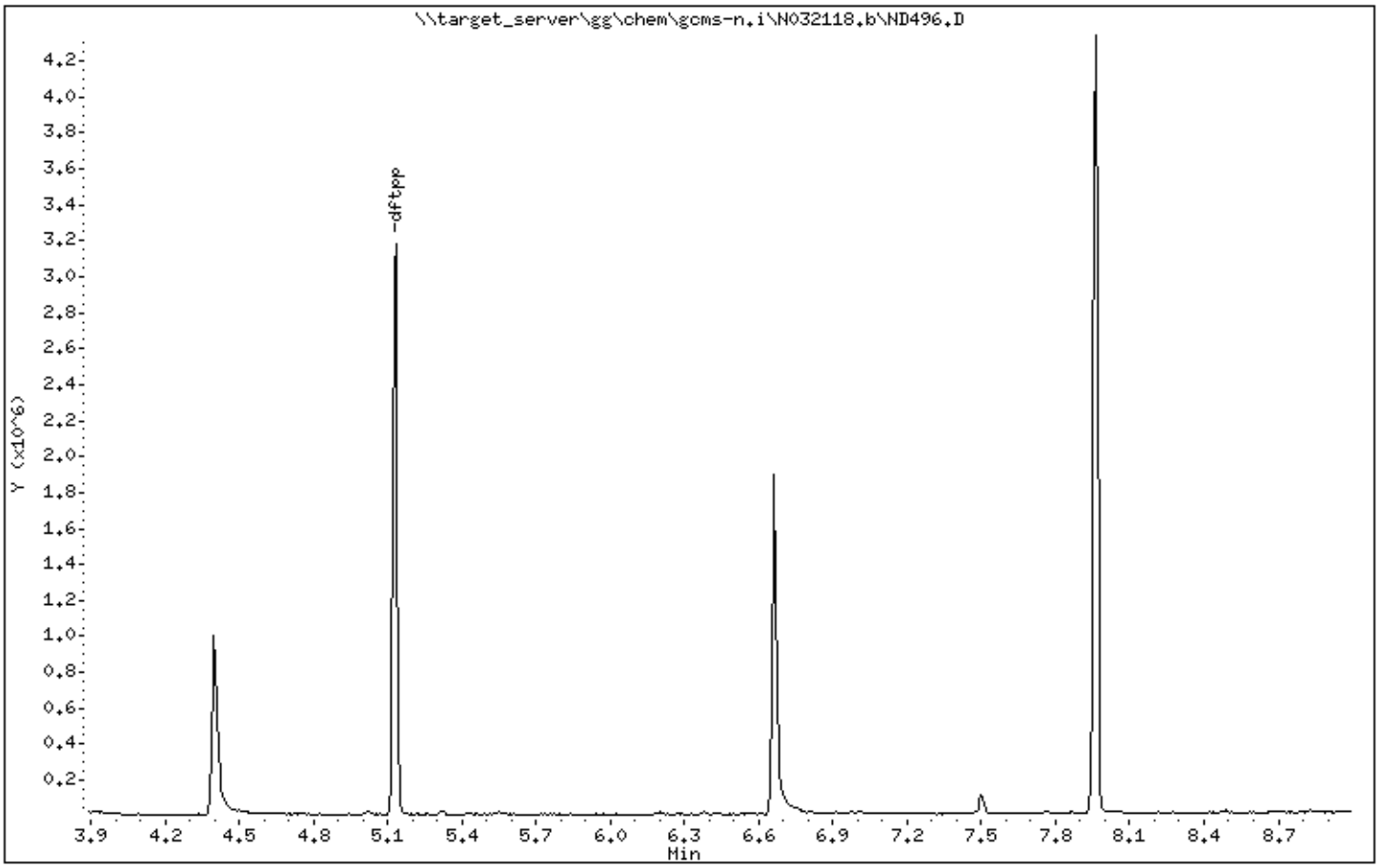
Date : 21-MAR-2018 10:41

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225136-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\ND496.D

Date : 21-MAR-2018 10:41

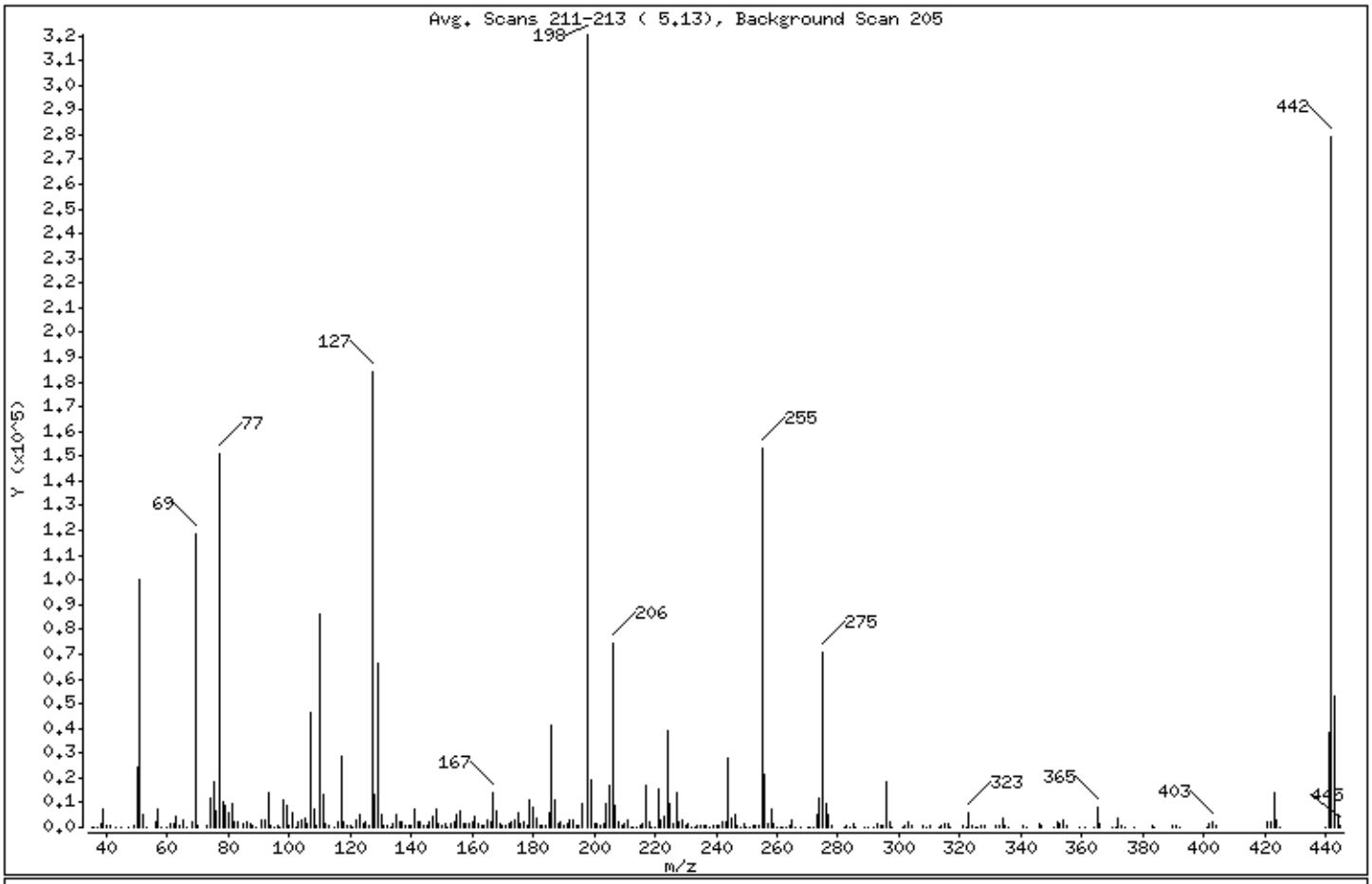
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225136-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	31.15
68	Less than 2.00% of mass 69	0.63 (1.70)
69	Less than 100.00% of mass 198	36.97
70	Less than 2.00% of mass 69	0.22 (0.61)
127	40.00 - 60.00% of mass 198	57.47
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.06
275	10.00 - 30.00% of mass 198	21.98
365	1.00 - 100.00% of mass 198	2.56
441	0.01 - 100.00% of mass 443	12.06 (72.78)
442	40.00 - 100.00% of mass 198	87.20
443	17.00 - 23.00% of mass 442	16.57 (19.00)

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\ND496.D

Date : 21-MAR-2018 10:41

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225136-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND496.D
Spectrum: Avg. Scans 211-213 (5.13), Background Scan 205
Location of Maximum: 198.00
Number of points: 307

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	59	125.00	2525	203.00	1735	285.00	1275
36.00	146	126.00	563	204.00	9924	286.00	325
37.00	337	127.00	184128	205.00	16736	289.00	233
38.00	1153	128.00	13265	206.00	74336	290.00	205
39.00	7665	129.00	66008	207.00	8957	292.00	156
40.00	547	130.00	5303	208.00	2484	293.00	1449
41.00	492	131.00	779	209.00	780	294.00	385
43.00	168	132.00	913	210.00	1465	295.00	559
45.00	190	133.00	362	211.00	2885	296.00	18744
47.00	131	134.00	1540	212.00	180	297.00	2396
49.00	445	135.00	4987	213.00	150	298.00	136
50.00	24032	136.00	2038	214.00	52	301.00	178
51.00	99808	137.00	2451	215.00	937	302.00	418
52.00	5171	138.00	824	216.00	1528	303.00	2386
53.00	350	139.00	498	217.00	17176	304.00	694
56.00	2104	140.00	941	218.00	1959	308.00	648
57.00	7334	141.00	7599	219.00	189	309.00	196
58.00	228	142.00	2264	220.00	277	310.00	401
60.00	86	143.00	1908	221.00	15788	313.00	246
61.00	1587	144.00	592	222.00	2811	314.00	977
62.00	1509	145.00	510	223.00	4215	315.00	1719
63.00	4069	146.00	1924	224.00	39024	316.00	1195
64.00	593	147.00	4060	225.00	9703	317.00	226
65.00	2610	148.00	7413	226.00	1141	321.00	667
66.00	183	149.00	1694	227.00	13744	322.00	246
68.00	2008	150.00	701	228.00	2045	323.00	6031
69.00	118432	151.00	1352	229.00	3301	324.00	997
70.00	719	152.00	331	230.00	479	325.00	67
73.00	925	153.00	1833	231.00	1378	326.00	190
74.00	11545	154.00	1870	232.00	319	327.00	1081
75.00	18744	155.00	4813	233.00	281	328.00	630
76.00	6403	156.00	6672	234.00	851	332.00	456
77.00	150656	157.00	1466	235.00	955	333.00	503
78.00	10274	158.00	1368	236.00	950	334.00	3940
79.00	8827	159.00	1115	237.00	1062	335.00	989

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\ND496.D

Date : 21-MAR-2018 10:41

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225136-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND496.D
Spectrum: Avg. Scans 211-213 (5.13), Background Scan 205
Location of Maximum: 198.00
Number of points: 307

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	6155	160.00	2396	238.00	233	336.00	267
81.00	9453	161.00	4183	239.00	458	341.00	1046
82.00	2049	162.00	1109	240.00	370	342.00	176
83.00	2124	163.00	459	241.00	780	346.00	1368
85.00	1422	164.00	576	242.00	1902	347.00	456
86.00	2512	165.00	2771	243.00	2035	351.00	90
87.00	1137	166.00	2488	244.00	28136	352.00	2186
88.00	528	167.00	13917	245.00	4027	353.00	1230
89.00	317	168.00	6303	246.00	4907	354.00	2625
91.00	2588	169.00	1117	247.00	890	355.00	482
92.00	2669	170.00	756	248.00	104	359.00	120
93.00	13962	171.00	872	249.00	1474	361.00	164
94.00	921	172.00	1261	250.00	139	364.00	57
95.00	115	173.00	2142	251.00	260	365.00	8212
96.00	1047	174.00	2973	252.00	395	366.00	1297
97.00	54	175.00	5602	253.00	739	370.00	200
98.00	11144	176.00	1809	254.00	671	371.00	323
99.00	8640	177.00	2244	255.00	152896	372.00	3966
100.00	862	178.00	991	256.00	21096	373.00	799
101.00	6109	179.00	10716	257.00	1285	374.00	264
102.00	360	180.00	8180	258.00	7670	377.00	129
103.00	1842	181.00	3610	259.00	1118	383.00	913
104.00	3178	182.00	820	260.00	122	384.00	317
105.00	3547	183.00	459	261.00	198	390.00	572
106.00	1113	184.00	896	262.00	80	391.00	484
107.00	46712	185.00	5673	263.00	125	392.00	192
108.00	7046	186.00	41560	264.00	381	401.00	255
109.00	721	187.00	11148	265.00	2760	402.00	1322
110.00	86536	188.00	1161	266.00	266	403.00	2196
111.00	13106	189.00	2383	268.00	26	404.00	879
112.00	1523	190.00	461	270.00	252	421.00	1865
113.00	574	191.00	1431	271.00	279	422.00	1849
115.00	281	192.00	3219	272.00	168	423.00	14267
116.00	2387	193.00	3098	273.00	4869	424.00	2780
117.00	28672	194.00	562	274.00	11794	425.00	213

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\ND496.D

Date : 21-MAR-2018 10:41

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225136-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND496.D
Spectrum: Avg. Scans 211-213 (5.13), Background Scan 205
Location of Maximum: 198.00
Number of points: 307

m/z	Y	m/z	Y	m/z	Y	m/z	Y
118.00	2049	195.00	372	275.00	70432	440.00	210
119.00	491	196.00	9461	276.00	9286	441.00	38632
120.00	675	198.00	320384	277.00	5268	442.00	279360
121.00	116	199.00	19416	278.00	1056	443.00	53080
122.00	3155	200.00	1691	282.00	299	444.00	4281
123.00	4827	201.00	1335	283.00	1060	445.00	468
124.00	1794	202.00	644	284.00	253		

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\ND497.D

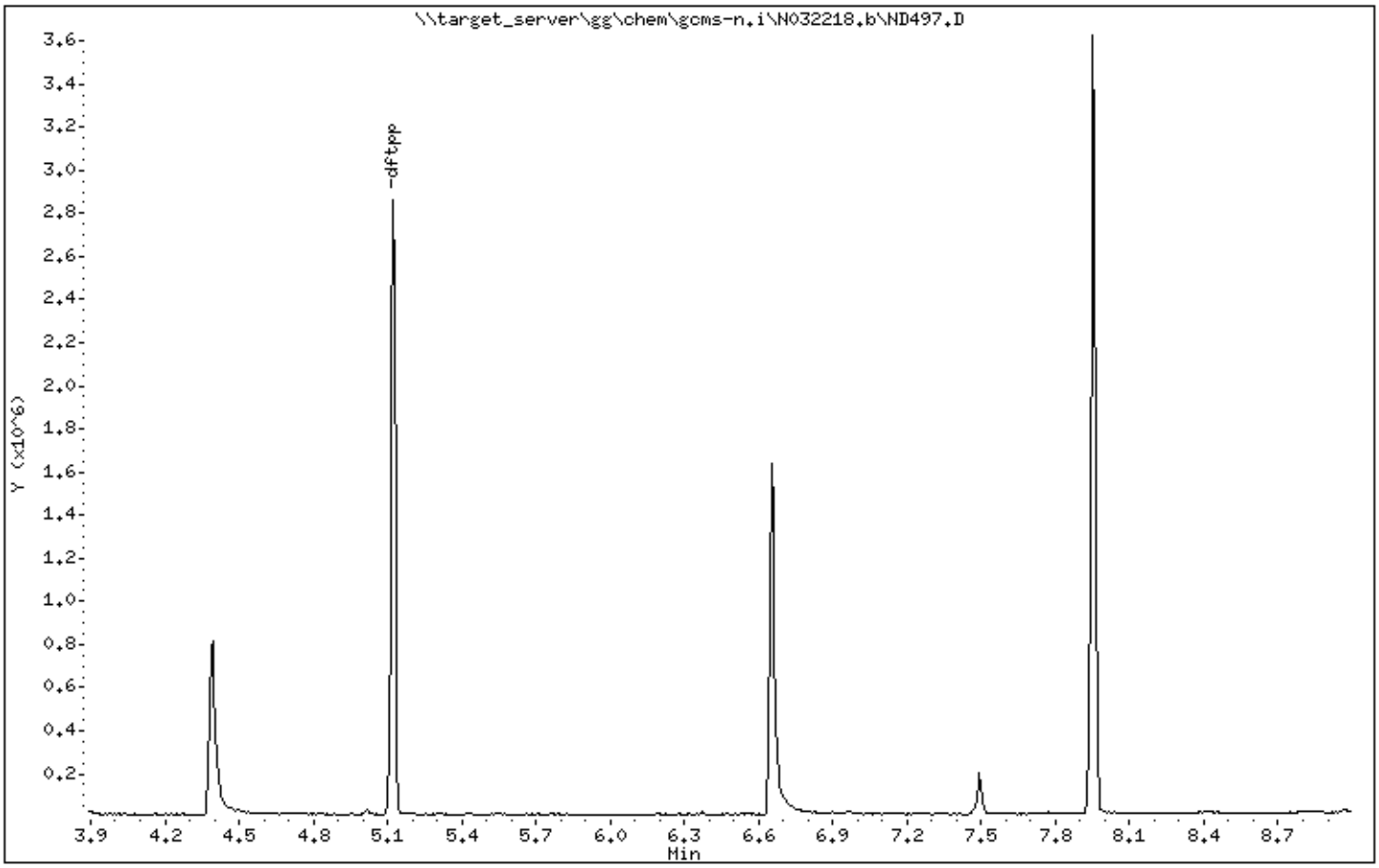
Date : 22-MAR-2018 09:38

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225233-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25



Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\ND497.D

Date : 22-MAR-2018 09:38

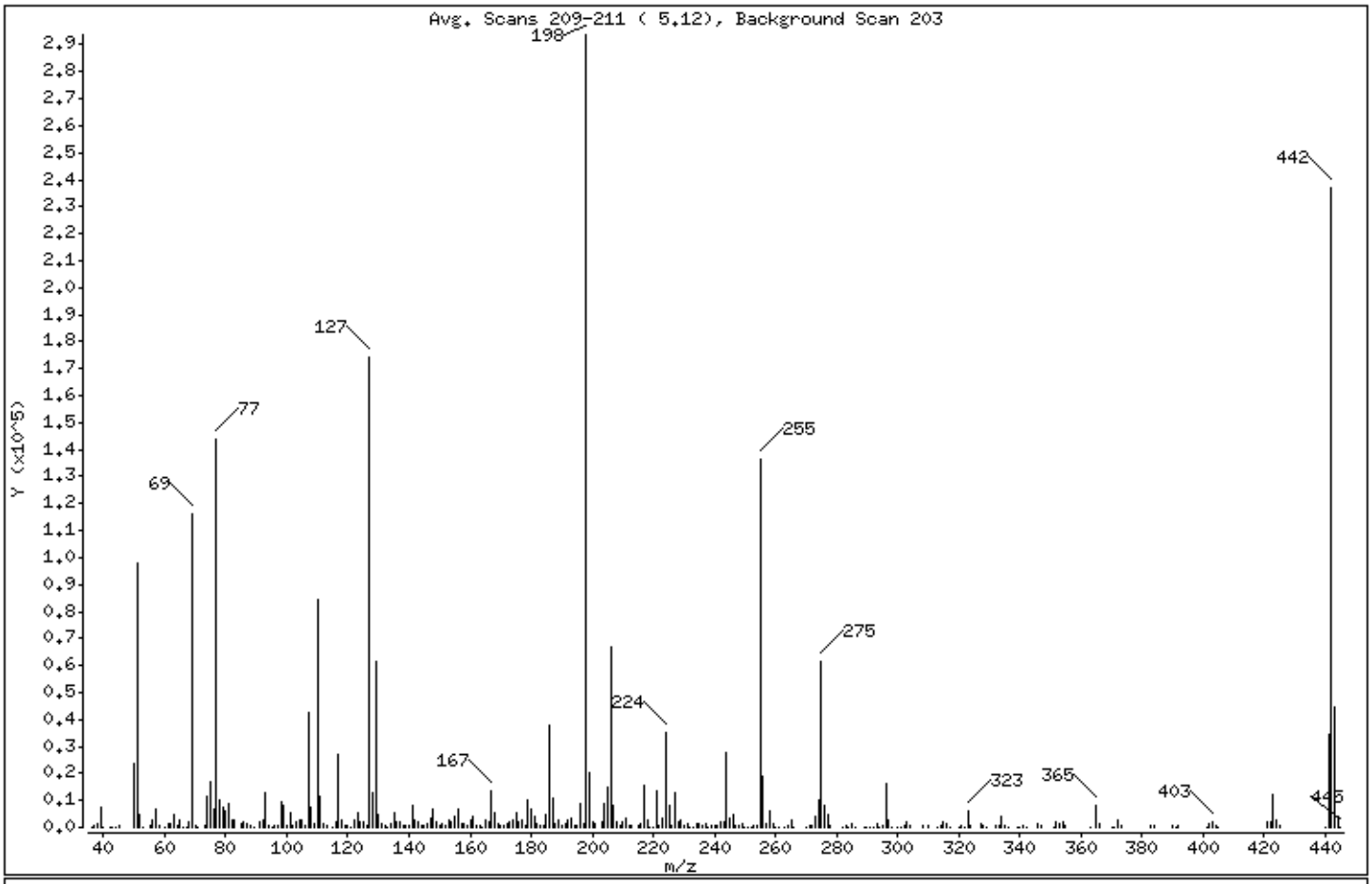
Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225233-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	33.24
68	Less than 2.00% of mass 69	0.68 (1.73)
69	Less than 100.00% of mass 198	39.47
70	Less than 2.00% of mass 69	0.17 (0.42)
127	40.00 - 60.00% of mass 198	59.25
197	Less than 1.00% of mass 198	0.38
199	5.00 - 9.00% of mass 198	6.82
275	10.00 - 30.00% of mass 198	20.98
365	1.00 - 100.00% of mass 198	2.70
441	0.01 - 100.00% of mass 443	11.66 (77.14)
442	40.00 - 100.00% of mass 198	80.67
443	17.00 - 23.00% of mass 442	15.12 (18.74)

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\ND497.D

Date : 22-MAR-2018 09:38

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225233-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND497.D
Spectrum: Avg. Scans 209-211 (5.12), Background Scan 203
Location of Maximum: 198.00
Number of points: 305

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	263	124.00	1843	201.00	1535	289.00	164
37.00	606	125.00	2051	203.00	1748	290.00	81
38.00	1270	126.00	726	204.00	8787	291.00	54
39.00	7689	127.00	174016	205.00	15067	292.00	329
40.00	285	128.00	12844	206.00	67096	293.00	1295
42.00	120	129.00	61544	207.00	8232	294.00	296
43.00	277	130.00	4679	208.00	1753	295.00	537
44.00	193	131.00	1180	209.00	478	296.00	15967
45.00	420	132.00	712	210.00	1856	297.00	2759
50.00	23472	133.00	66	211.00	3183	298.00	222
51.00	97616	134.00	1663	212.00	653	300.00	67
52.00	5054	135.00	5142	213.00	447	301.00	248
53.00	333	136.00	1885	215.00	768	302.00	341
55.00	618	137.00	1925	216.00	1094	303.00	1865
56.00	2373	138.00	419	217.00	15211	304.00	484
57.00	6904	139.00	401	218.00	2416	308.00	359
58.00	483	140.00	894	219.00	271	310.00	345
60.00	54	141.00	8208	220.00	163	313.00	123
61.00	1089	142.00	2463	221.00	13431	314.00	877
62.00	1054	143.00	1744	222.00	810	315.00	1786
63.00	4516	144.00	419	223.00	3518	316.00	1448
64.00	607	145.00	635	224.00	35256	317.00	129
65.00	2540	146.00	1460	225.00	7962	320.00	85
66.00	163	147.00	3690	226.00	461	321.00	619
67.00	144	148.00	6938	227.00	12671	322.00	257
68.00	2011	149.00	1712	228.00	1812	323.00	5766
69.00	115928	150.00	432	229.00	2601	324.00	961
70.00	492	151.00	1419	230.00	513	327.00	1059
71.00	154	152.00	676	231.00	1325	328.00	658
73.00	754	153.00	2397	232.00	156	329.00	55
74.00	11232	154.00	2088	233.00	302	332.00	360
75.00	17136	155.00	3854	234.00	1168	333.00	633
76.00	6993	156.00	6451	235.00	1116	334.00	4208
77.00	143744	157.00	1665	236.00	764	335.00	860
78.00	9834	158.00	1665	237.00	1117	336.00	69

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\ND497.D

Date : 22-MAR-2018 09:38

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225233-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND497.D
Spectrum: Avg. Scans 209-211 (5.12), Background Scan 203
Location of Maximum: 198.00
Number of points: 305

m/z	Y	m/z	Y	m/z	Y	m/z	Y
79.00	7271	159.00	837	238.00	238	339.00	150
80.00	6107	160.00	2814	239.00	586	340.00	65
81.00	9096	161.00	3764	240.00	457	341.00	672
82.00	2517	162.00	694	241.00	851	342.00	217
83.00	2706	163.00	559	242.00	1797	346.00	1400
85.00	1612	164.00	201	243.00	2039	347.00	442
86.00	1976	165.00	2562	244.00	27968	351.00	70
87.00	1142	166.00	2241	245.00	3477	352.00	1696
88.00	422	167.00	13315	246.00	4435	353.00	1202
89.00	252	168.00	5427	247.00	858	354.00	1922
91.00	2179	169.00	1209	248.00	416	355.00	355
92.00	2444	170.00	443	249.00	1178	363.00	196
93.00	12846	171.00	821	250.00	176	365.00	7932
94.00	881	172.00	1041	251.00	244	366.00	1016
95.00	296	173.00	1845	252.00	225	370.00	193
96.00	887	174.00	3028	253.00	830	371.00	204
97.00	563	175.00	5083	254.00	591	372.00	2709
98.00	9300	176.00	1834	255.00	136064	373.00	708
99.00	8226	177.00	2659	256.00	18944	383.00	848
100.00	675	178.00	809	257.00	1498	384.00	364
101.00	5578	179.00	10317	258.00	6360	390.00	560
102.00	347	180.00	6708	259.00	1358	391.00	335
103.00	1946	181.00	3824	260.00	250	392.00	444
104.00	2804	182.00	1017	261.00	197	401.00	71
105.00	2963	183.00	562	263.00	132	402.00	1357
106.00	727	184.00	769	264.00	395	403.00	1794
107.00	42784	185.00	5035	265.00	2851	404.00	643
108.00	7226	186.00	37616	266.00	330	405.00	59
109.00	1351	187.00	11045	270.00	295	421.00	1903
110.00	84592	188.00	1314	271.00	338	422.00	1780
111.00	11424	189.00	2379	272.00	605	423.00	12117
112.00	1201	190.00	422	273.00	4107	424.00	2581
113.00	428	191.00	1096	274.00	10316	425.00	358
115.00	253	192.00	2906	275.00	61632	440.00	147
116.00	1969	193.00	3672	276.00	8007	441.00	34248

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\ND497.D

Date : 22-MAR-2018 09:38

Client ID: DFTPP02 Instrument: gcms-n.i

Sample Info: WG225233-1,SL2133

Operator: JCG

Column phase: RTX-5SILMS Column diameter: 0.25

Data File: ND497.D
Spectrum: Avg. Scans 209-211 (5.12), Background Scan 203
Location of Maximum: 198.00
Number of points: 305

m/z	Y	m/z	Y	m/z	Y	m/z	Y
117.00	26944	194.00	822	277.00	4716	442.00	236928
118.00	2835	195.00	559	278.00	767	443.00	44400
119.00	426	196.00	8657	282.00	74	444.00	4192
120.00	687	197.00	1123	283.00	543	445.00	245
121.00	131	198.00	293696	284.00	312		
122.00	2956	199.00	20024	285.00	1053		
123.00	5087	200.00	1847	286.00	120		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225023-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: N8025.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG225023

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	J	0.091	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	J	0.069	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		82.6	%					
Fluorene-D10		78.7	%					
Pyrene-D10		106.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8025.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8025.D
Lab Smp Id: WG225023-1 Client Smp ID: WG225023-Blank
Inj Date : 20-MAR-2018 11:11
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225023-1,SL2133
Misc Info : WG225084,WG225023,WG224895-4,SL2133-20
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 3 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

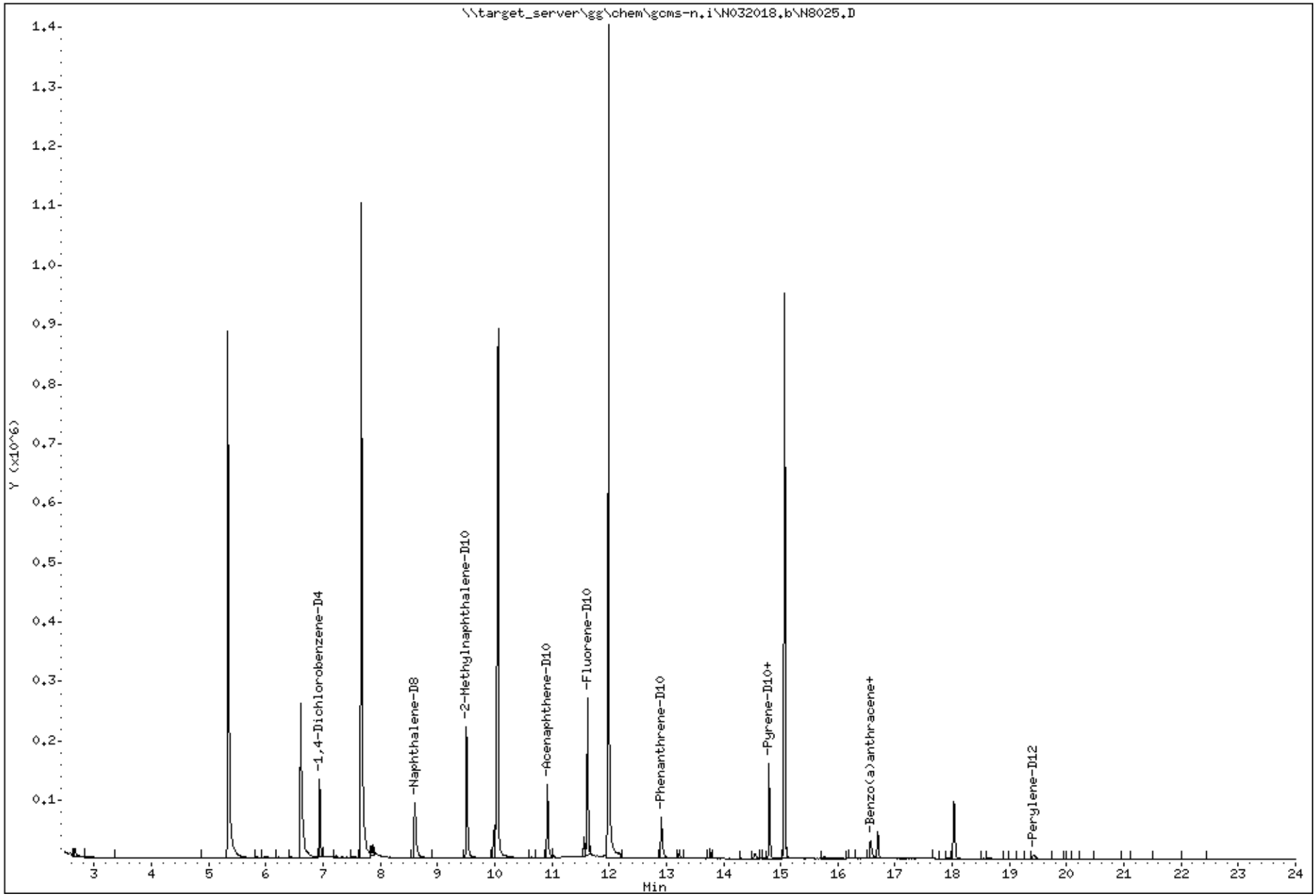
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	51696	0.80000	(aQ)	
*	26 Naphthalene-D8	136	8.611	8.591	(1.000)	175691	0.80000	(a)	
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.104)	170718	1.65164	1.65	
*	47 Acenaphthene-D10	164	10.926	10.926	(1.000)	78341	0.80000	(a)	
$	55 Fluorene-D10	174	11.623	11.623	(1.064)	151876	1.57387	1.57	
*	65 Phenanthrene-D10	188	12.916	12.906	(1.000)	114343	0.80000	(a)	
$	71 Pyrene-D10	212	14.799	14.799	(0.893)	142349	2.11851	2.12	
	72 Pyrene	202	14.827	14.827	(0.895)	10687	0.09131	0.0913(a)	
	74 Benzo(a)anthracene	228	16.563	16.544	(0.999)	4614	0.06928	0.0693(a)	
*	76 Chrysene-D12	240	16.572	16.563	(1.000)	38046	0.80000	(a)	
*	83 Perylene-D12	264	19.422	19.422	(1.000)	23785	0.80000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8025.D
Date : 20-MAR-2018 11:11
Client ID: WG225023-Blank
Instrument: gcms-n.i
Sample Info: WG225023-1,SL2133



Katahdin Analytical Services 1000250

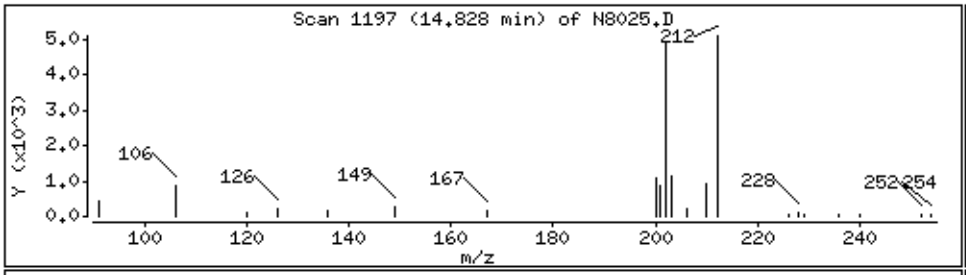
Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8025.D

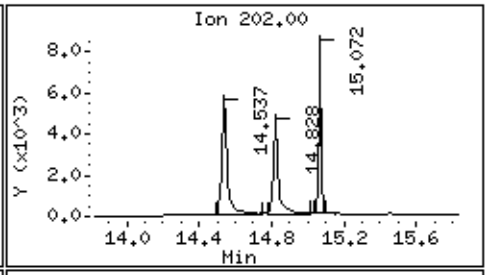
Date : 20-MAR-2018 11:11

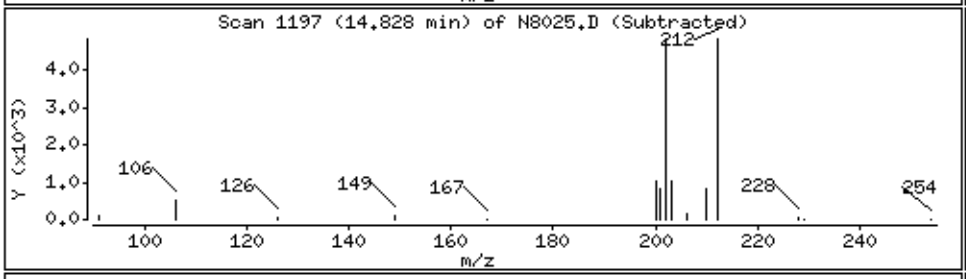
Client ID: WG225023-Blank Instrument: gcms-n.i

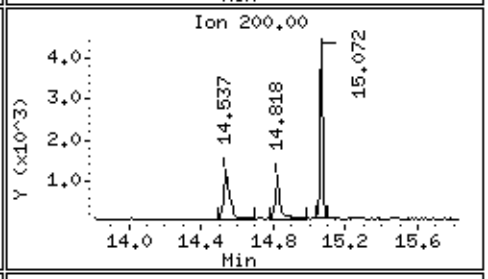
Sample Info: WG225023-1,SL2133

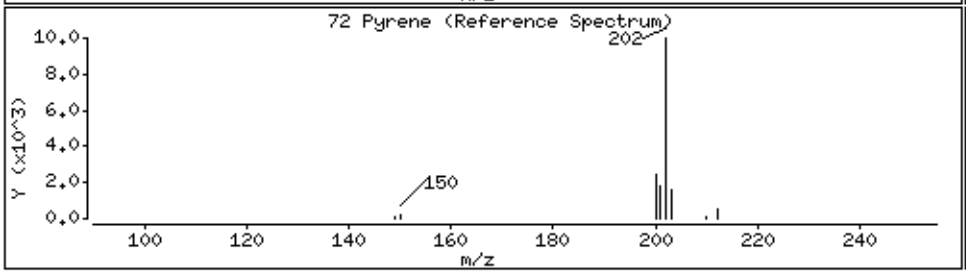
72 Pyrene Concentration: 0.0913 ug/L

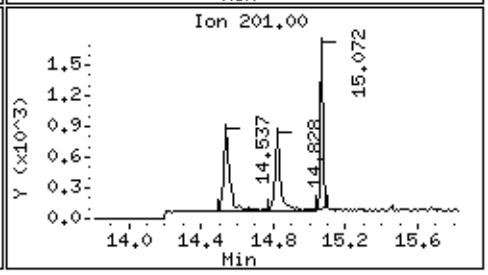




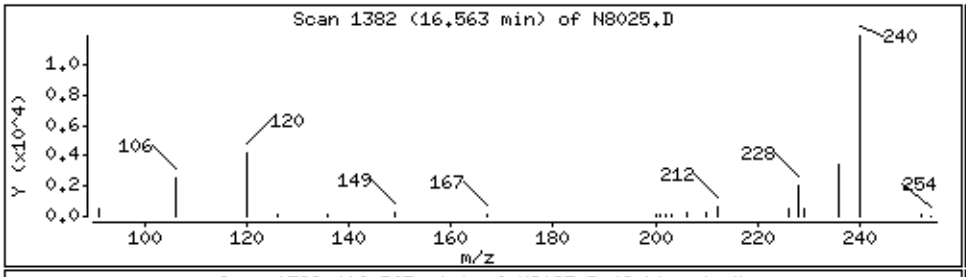


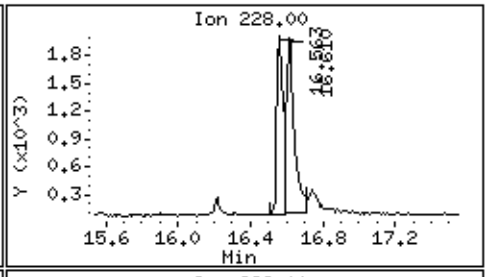


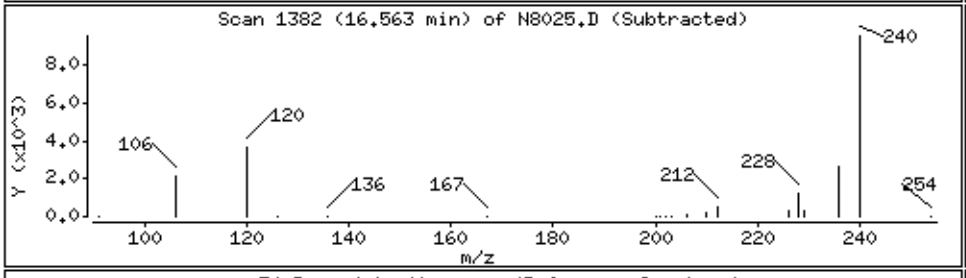


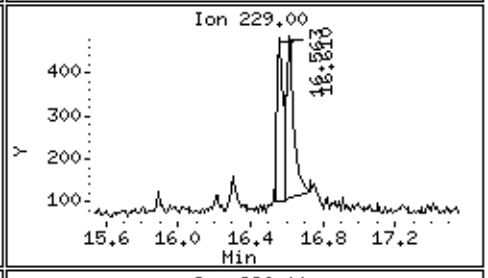


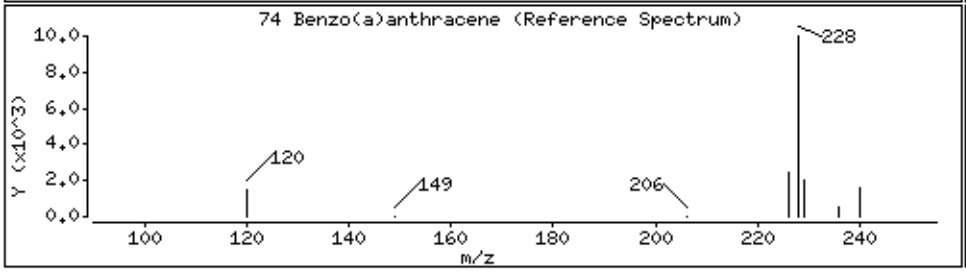
74 Benzo(a)anthracene Concentration: 0.0693 ug/L

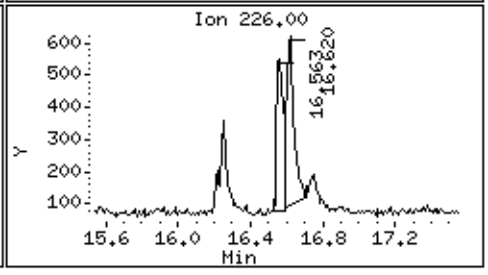












Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225021-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: N8029.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 27-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		77.4	%					
Fluorene-D10		67.6	%					
Pyrene-D10		83.8	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8029.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8029.D
Lab Smp Id: WG225021-1 Client Smp ID: WG225021-Blank
Inj Date : 20-MAR-2018 13:18
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225021-1,SL2133
Misc Info : WG225084,WG225021,WG224895-4,SL2133-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

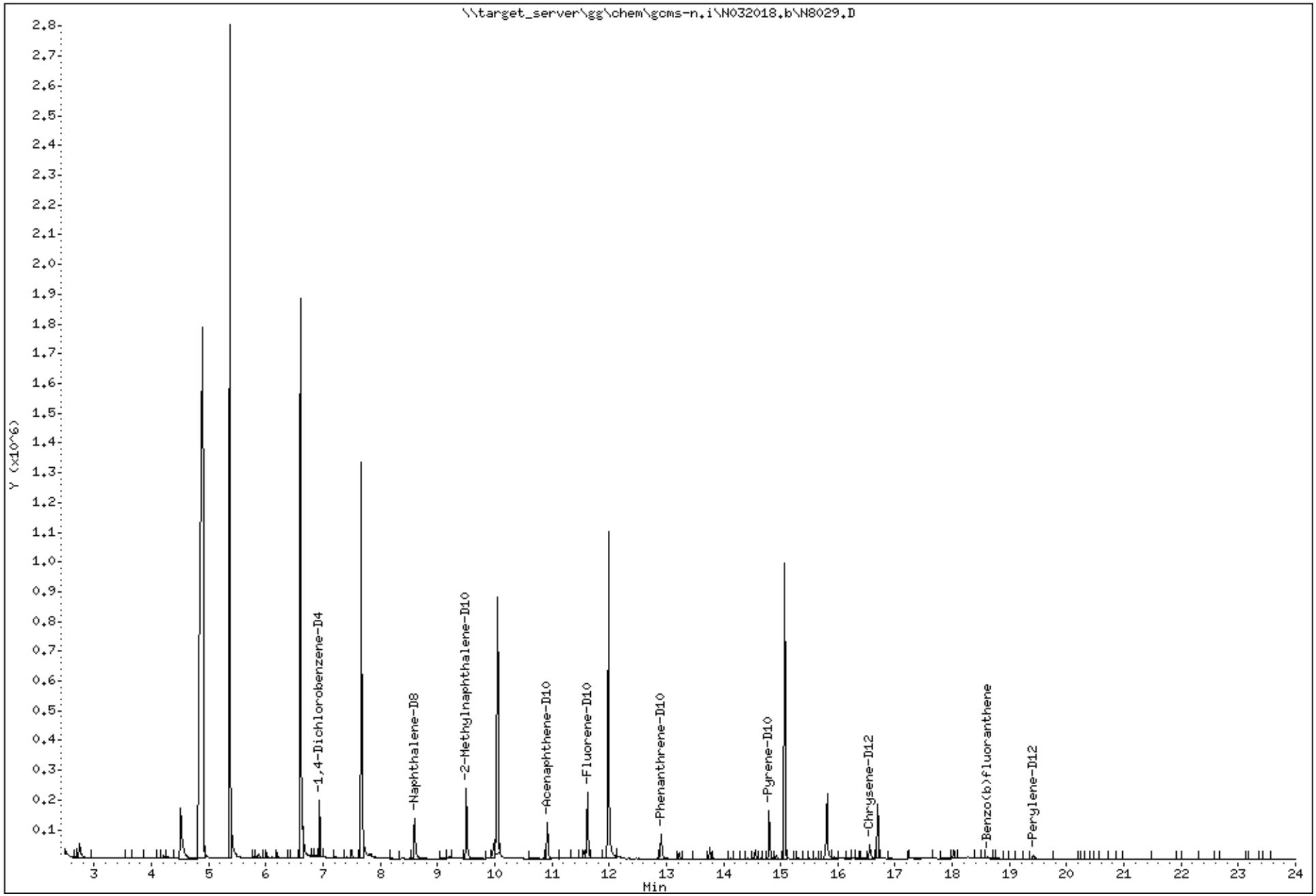
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
* 10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	55702	0.80000	(Q)	
* 26 Naphthalene-D8	136	8.601	8.591	(1.000)	188335	0.80000		
$ 32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.105)	171608	1.54879	51.6	
* 47 Acenaphthene-D10	164	10.926	10.926	(1.000)	83863	0.80000		
$ 55 Fluorene-D10	174	11.623	11.623	(1.064)	139785	1.35319	45.1	
* 65 Phenanthrene-D10	188	12.906	12.906	(1.000)	123576	0.80000		
$ 71 Pyrene-D10	212	14.799	14.799	(0.894)	143631	1.67521	55.8	
* 76 Chrysene-D12	240	16.554	16.563	(1.000)	48547	0.80000		
* 83 Perylene-D12	264	19.411	19.422	(1.000)	31056	0.80000		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8029.D
Date : 20-MAR-2018 13:18
Client ID: WG225021-Blank
Instrument: gcms-n.i
Sample Info: WG225021-1,SL2133



Katahdin Analytical Services 1000254

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225022-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: N8058.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 27-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	2.6	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	2.2	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	2.0	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		66.9	%					
Fluorene-D10		62.5	%					
Pyrene-D10		63.3	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8058.D
Report Date: 26-Mar-2018 14:19

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8058.D
Lab Smp Id: WG225022-1 Client Smp ID: WG225022-Blank
Inj Date : 21-MAR-2018 14:49 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225022-1,SL2133
Misc Info : WG225136,WG225020,WG225136-4,SL2133-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 9 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

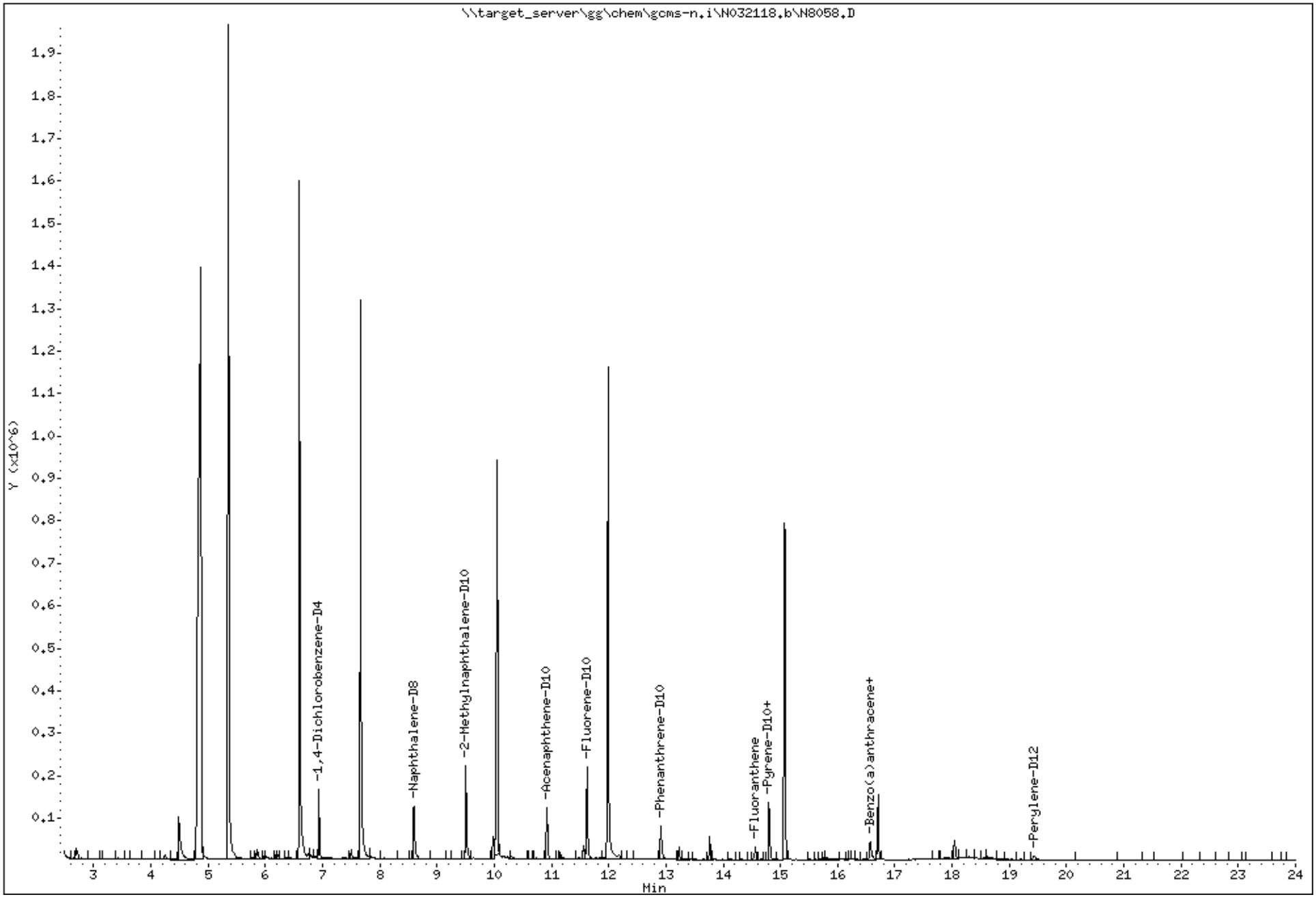
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	60364	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.601	8.581	(1.000)	190258	0.80000		
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.105)	152224	1.33765	44.6	
*	47 Acenaphthene-D10	164	10.926	10.915	(1.000)	82987	0.80000		
$	55 Fluorene-D10	174	11.623	11.612	(1.064)	126908	1.25063	41.7	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	118337	0.80000		
	70 Fluoranthene	202	14.546	14.518	(1.127)	12587	0.07681	2.56(a)	
$	71 Pyrene-D10	212	14.799	14.790	(0.893)	122704	1.26683	42.2	
	72 Pyrene	202	14.818	14.809	(0.894)	11748	0.06640	2.21(a)	
	74 Benzo(a)anthracene	228	16.554	16.535	(0.999)	5371	0.06029	2.01(a)	
*	76 Chrysene-D12	240	16.572	16.544	(1.000)	48310	0.80000		
*	83 Perylene-D12	264	19.434	19.400	(1.000)	27460	0.80000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8058.D
Date : 21-MAR-2018 14:49
Client ID: WG225022-Blank
Instrument: gcms-n.i
Sample Info: WG225022-1,SL2133



Katahdin Analytical Services 1000257

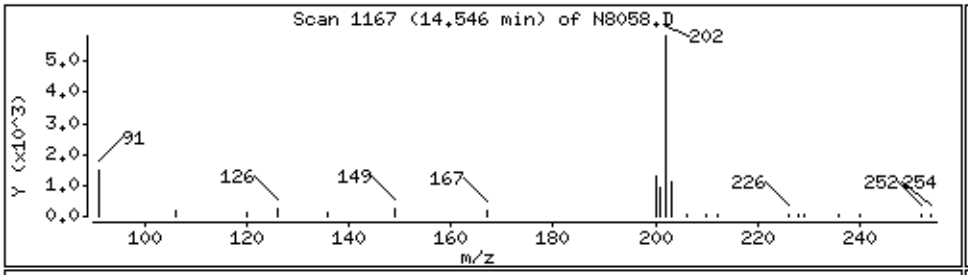
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8058.D

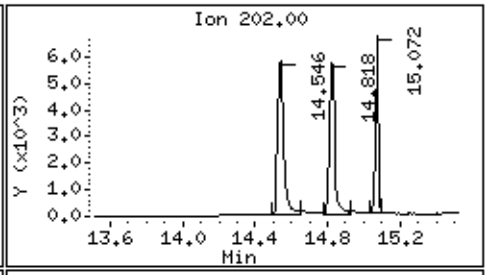
Date : 21-MAR-2018 14:49

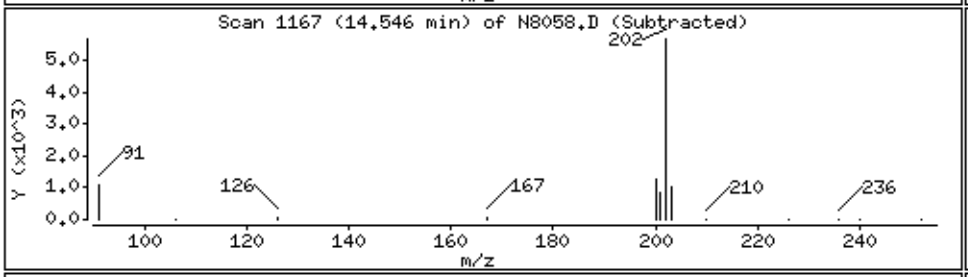
Client ID: WG225022-Blank Instrument: gcms-n.i

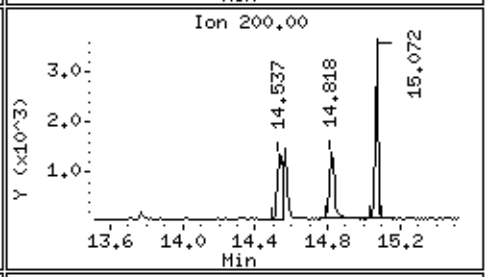
Sample Info: WG225022-1,SL2133

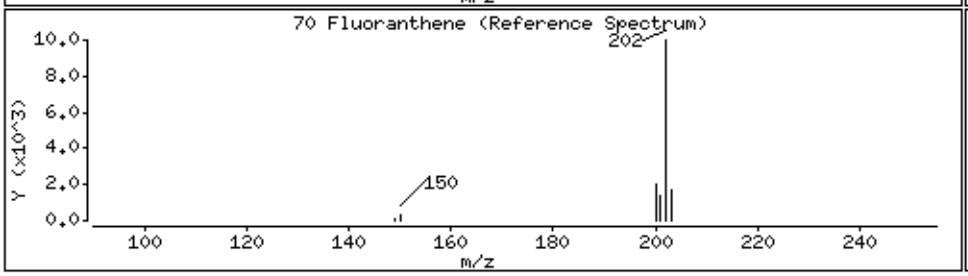
70 Fluoranthene Concentration: 2.56 ug/Kgdrywt

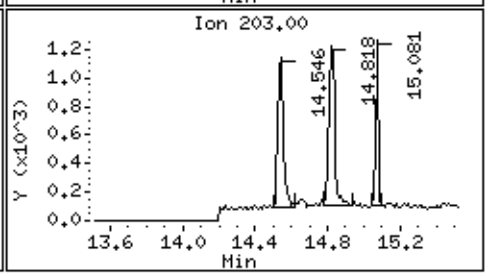




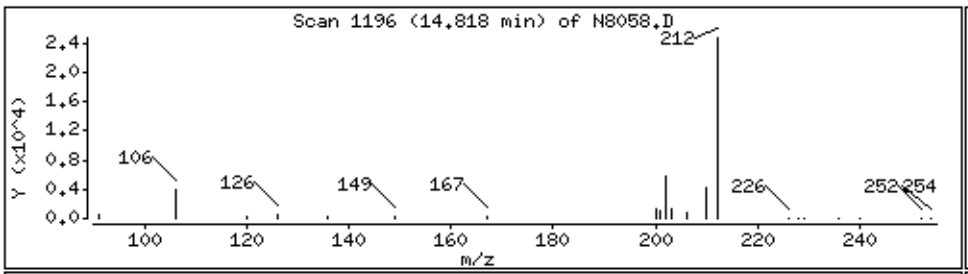


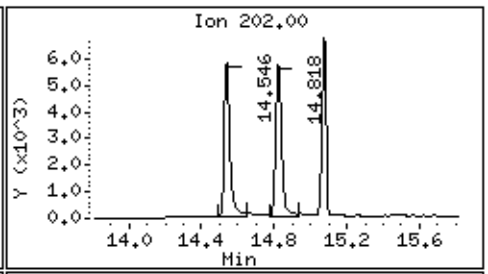


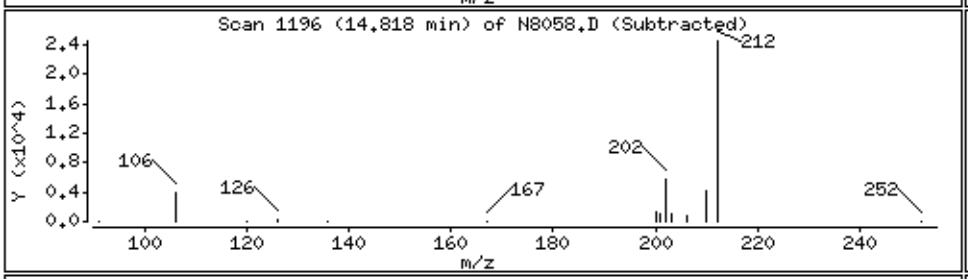


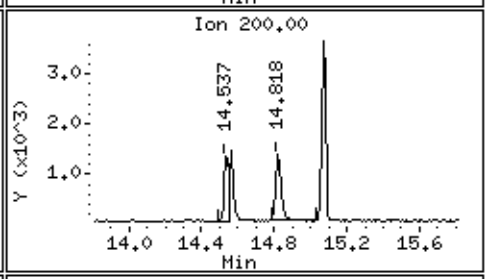


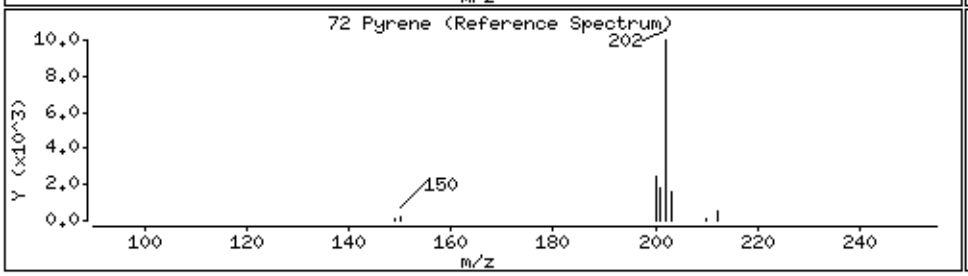
72 Pyrene Concentration: 2.21 ug/Kgdrywt

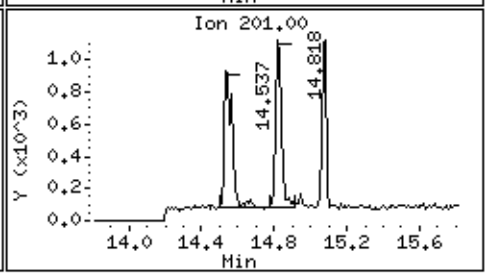












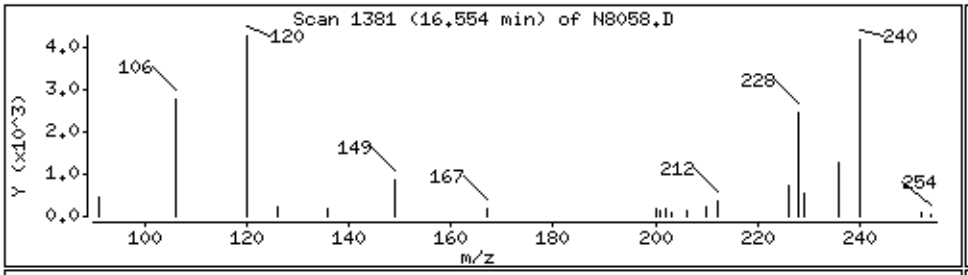
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8058.D

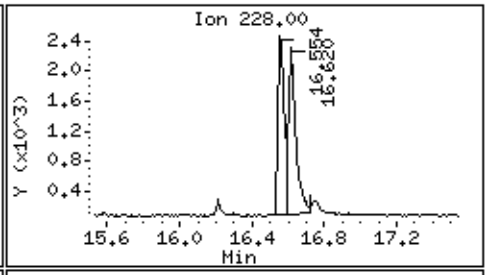
Date : 21-MAR-2018 14:49

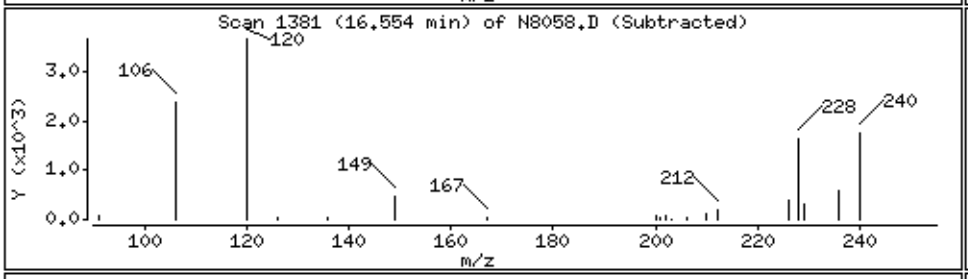
Client ID: WG225022-Blank Instrument: gcms-n.i

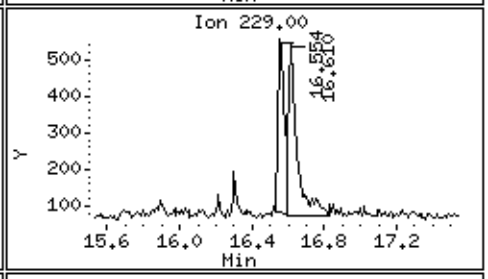
Sample Info: WG225022-1,SL2133

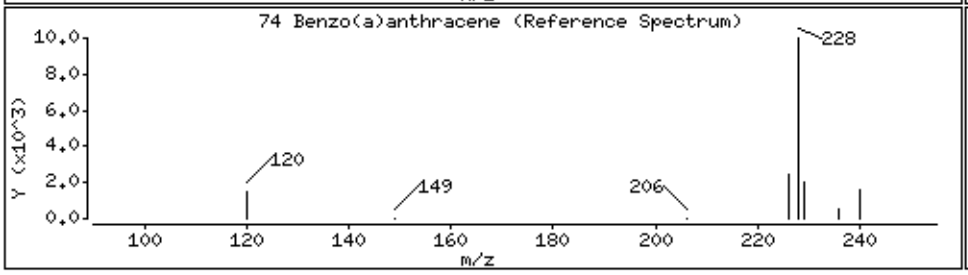
74 Benzo(a)anthracene Concentration: 2.01 ug/Kgdrywt

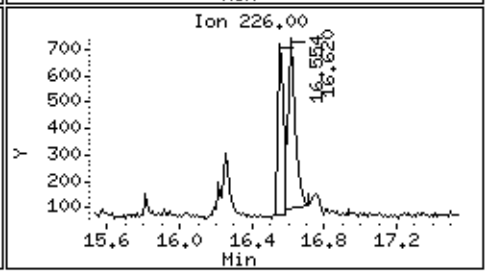












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ANALYTICAL SERVICES

Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225023-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: N8026.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: KF
Extraction Method: SW846 3510C
Lab Prep Batch: WG225023

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	81.5	2.00	1.63	ug/L	43-120
2-Methylnaphthalene	76.0	2.00	1.52	ug/L	39-120
Acenaphthylene	79.5	2.00	1.59	ug/L	35-121
Acenaphthene	83.5	2.00	1.67	ug/L	48-120
Fluorene	86.5	2.00	1.73	ug/L	50-120
Phenanthrene	84.5	2.00	1.69	ug/L	53-120
Anthracene	80.5	2.00	1.61	ug/L	53-120
Fluoranthene	88.0	2.00	1.76	ug/L	58-120
Pyrene	90.5	2.00	1.81	ug/L	53-121
Benzo(a)anthracene	93.0	2.00	1.86	ug/L	59-120
Chrysene	85.5	2.00	1.71	ug/L	57-120
Benzo(b)Fluoranthene	102.	2.00	2.04	ug/L	53-126
Benzo(k)fluoranthene	91.0	2.00	1.82	ug/L	54-125
Benzo(a)pyrene	80.5	2.00	1.61	ug/L	53-120
Indeno(1,2,3-cd)pyrene	54.0	2.00	1.08	ug/L	48-130
Dibenzo(a,h)anthracene	65.0	2.00	1.30	ug/L	44-131
Benzo(g,h,i)perylene	67.5	2.00	1.35	ug/L	44-128
2-Methylnaphthalene-D10	86.8				43-120
Fluorene-D10	83.6				29-120
Pyrene-D10	86.8				53-166

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Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8026.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8026.D
Lab Smp Id: WG225023-2 Client Smp ID: WG225023-LCS
Inj Date : 20-MAR-2018 11:44
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225023-2,SL2133
Misc Info : WG225084,WG225023,WG224895-4,SL2133-20
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/L)	REVIEW CODE
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	51394	0.80000	(a)	
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	177263	0.80000	(a)	
	27 Naphthalene	128	8.621	8.611	(1.004)	366042	1.63383	1.63	
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.107)	181043	1.73600	1.74	
	33 2-Methylnaphthalene	142	9.547	9.547	(1.111)	268482	1.52133	1.52	
	45 Acenaphthylene	152	10.730	10.730	(0.982)	329016	1.59250	1.59	
*	47 Acenaphthene-D10	164	10.926	10.926	(1.000)	77880	0.80000	(a)	
	48 Acenaphthene	153	10.959	10.959	(1.003)	225525	1.67155	1.67	
$	55 Fluorene-D10	174	11.623	11.623	(1.064)	160336	1.67137	1.67	
	56 Fluorene	166	11.656	11.656	(1.067)	239746	1.73106	1.73	
*	65 Phenanthrene-D10	188	12.906	12.906	(1.000)	119760	0.80000	(a)	
	66 Phenanthrene	178	12.927	12.927	(1.002)	312353	1.68811	1.69	
	67 Anthracene	178	13.002	13.002	(1.007)	333350	1.61237	1.61	
	70 Fluoranthene	202	14.527	14.527	(1.126)	305341	1.75537	1.76	
$	71 Pyrene-D10	212	14.799	14.799	(0.894)	173566	1.73514	1.74	
	72 Pyrene	202	14.818	14.827	(0.895)	315001	1.80786	1.81	
	74 Benzo(a)anthracene	228	16.535	16.544	(0.999)	184166	1.85765	1.86	
*	76 Chrysene-D12	240	16.554	16.563	(1.000)	56639	0.80000	(a)	
	77 Chrysene	228	16.601	16.601	(1.003)	190339	1.71401	1.71	
	80 Benzo(b)fluoranthene	252	18.571	18.582	(0.957)	117815	2.03550	2.04	

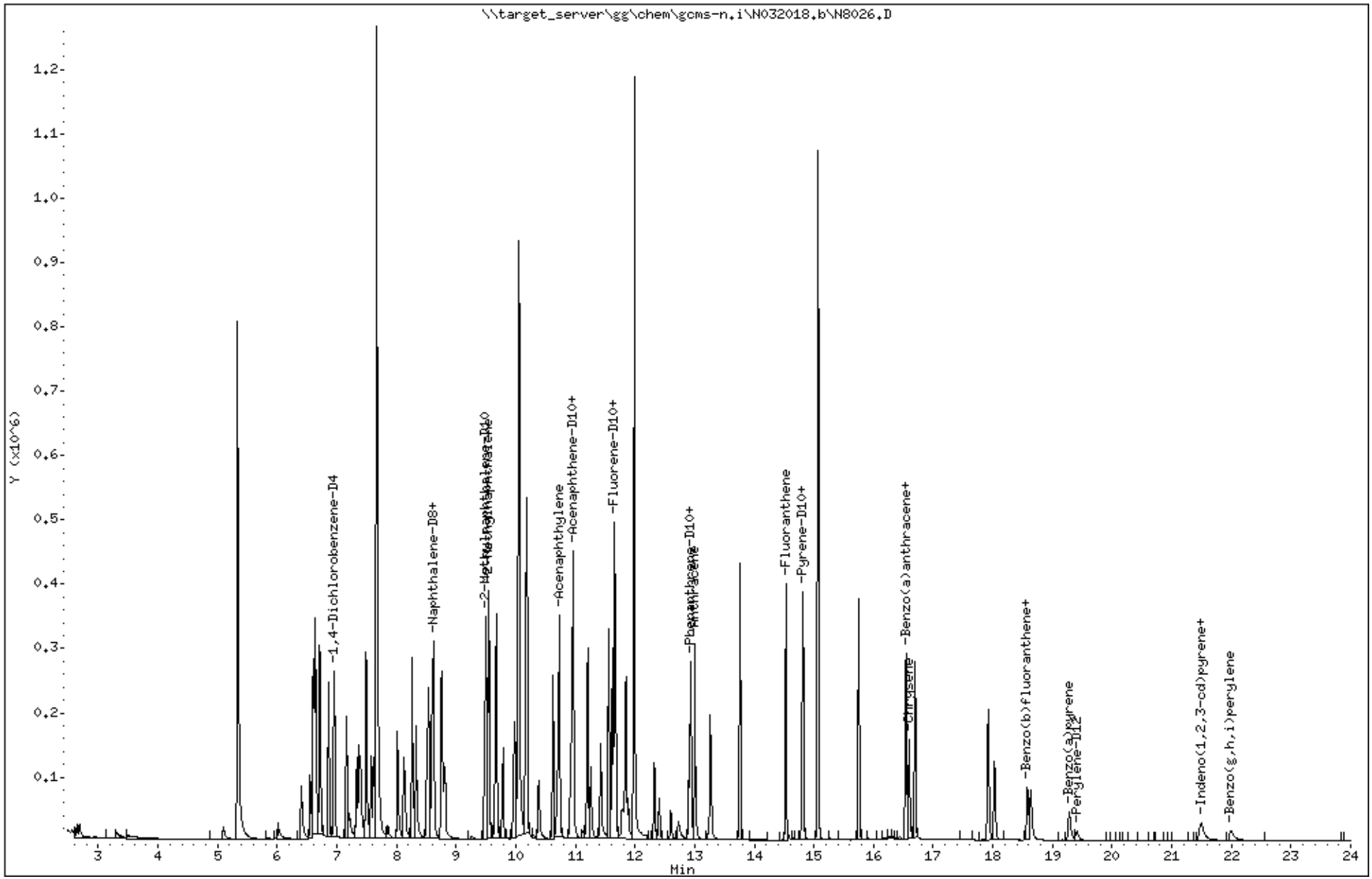
Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8026.D
Report Date: 26-Mar-2018 14:17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
	81 Benzo(k)fluoranthene	252	18.628	18.639	(0.960)	145417	1.81794	1.82(H)	
	82 Benzo(a)pyrene	252	19.275	19.286	(0.993)	93292	1.61318	1.61	
*	83 Perylene-D12	264	19.411	19.422	(1.000)	34854	0.80000	(a)	
	85 Indeno(1,2,3-cd)pyrene	276	21.478	21.489	(1.297)	73206	1.08009	1.08	
	86 Dibenzo(a,h)anthracene	278	21.512	21.523	(1.108)	52223	1.30575	1.30	
	87 Benzo(g,h,i)perylene	276	21.989	22.012	(1.133)	67917	1.35115	1.35	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8026.D
Date : 20-MAR-2018 11:44
Client ID: WG225023-LCS
Instrument: gcms-n.i
Sample Info: WG225023-2,SL2133
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 1000263

Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225021-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: N8030.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225021

Analysis Date: 20-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 26-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	71.5	66.7	47.7	ug/Kgdrywt	38-125
2-Methylnaphthalene	65.7	66.7	43.8	ug/Kgdrywt	39-125
Acenaphthylene	64.0	66.7	42.7	ug/Kgdrywt	39-125
Acenaphthene	67.9	66.7	45.3	ug/Kgdrywt	44-125
Fluorene	70.3	66.7	46.9	ug/Kgdrywt	47-125
Phenanthrene	70.0	66.7	46.7	ug/Kgdrywt	49-125
Anthracene	64.2	66.7	42.8	ug/Kgdrywt	50-125
Fluoranthene	77.2	66.7	51.5	ug/Kgdrywt	55-125
Pyrene	69.1	66.7	46.1	ug/Kgdrywt	55-125
Benzo(a)anthracene	77.8	66.7	51.9	ug/Kgdrywt	54-125
Chrysene	72.0	66.7	48.0	ug/Kgdrywt	57-125
Benzo(b)Fluoranthene	91.0	66.7	60.7	ug/Kgdrywt	53-128
Benzo(k)fluoranthene	73.0	66.7	48.7	ug/Kgdrywt	56-125
Benzo(a)pyrene	64.5	66.7	43.0	ug/Kgdrywt	50-125
Indeno(1,2,3-cd)pyrene	51.3	66.7	34.2	ug/Kgdrywt	49-130
Dibenzo(a,h)anthracene	58.5	66.7	39.0	ug/Kgdrywt	50-129
Benzo(g,h,i)perylene	59.4	66.7	39.6	ug/Kgdrywt	49-127
2-Methylnaphthalene-D10	91.3				19-125
Fluorene-D10	66.6				20-125
Pyrene-D10	66.2				31-128

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Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8030.D
Report Date: 26-Mar-2018 14:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032018.b\N8030.D
Lab Smp Id: WG225021-2 Client Smp ID: WG225021-LCS
Inj Date : 20-MAR-2018 13:50
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225021-2,SL2133
Misc Info : WG225084,WG225021,WG224895-4,SL2133-2
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032018.b\NSPSIM86.m
Meth Date : 21-Mar-2018 08:53 cgomez Quant Type: ISTD
Cal Date : 16-MAR-2018 14:38 Cal File: N7973.D
Als bottle: 8 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.940	(1.000)	58278	0.80000		
*	26 Naphthalene-D8	136	8.591	8.591	(1.000)	197151	0.80000		
	27 Naphthalene	128	8.621	8.611	(1.004)	356638	1.43127	47.7	
$	32 2-Methylnaphthalene-D10	152	9.508	9.508	(1.107)	211875	1.82670	60.9	
	33 2-Methylnaphthalene	142	9.547	9.547	(1.111)	259572	1.31499	43.8	
	45 Acenaphthylene	152	10.730	10.730	(0.982)	307274	1.28052	42.7	
*	47 Acenaphthene-D10	164	10.926	10.926	(1.000)	90454	0.80000		
	48 Acenaphthene	153	10.959	10.959	(1.003)	212792	1.35793	45.3	
$	55 Fluorene-D10	174	11.623	11.623	(1.064)	148500	1.33281	44.4	
	56 Fluorene	166	11.656	11.656	(1.067)	226369	1.40727	46.9	
*	65 Phenanthrene-D10	188	12.906	12.906	(1.000)	139517	0.80000		
	66 Phenanthrene	178	12.927	12.927	(1.002)	301944	1.40077	46.7	
	67 Anthracene	178	13.002	13.002	(1.007)	309245	1.28396	42.8	
	70 Fluoranthene	202	14.527	14.527	(1.126)	312986	1.54452	51.5	
$	71 Pyrene-D10	212	14.799	14.799	(0.894)	173199	1.32505	44.2	
	72 Pyrene	202	14.818	14.827	(0.895)	315045	1.38371	46.1	
	74 Benzo(a)anthracene	228	16.535	16.544	(0.999)	201586	1.55608	51.9	
*	76 Chrysene-D12	240	16.554	16.563	(1.000)	74011	0.80000		
	77 Chrysene	228	16.591	16.601	(1.002)	213781	1.44039	48.0	
	80 Benzo(b)fluoranthene	252	18.571	18.582	(0.957)	148020	1.81980	60.7	

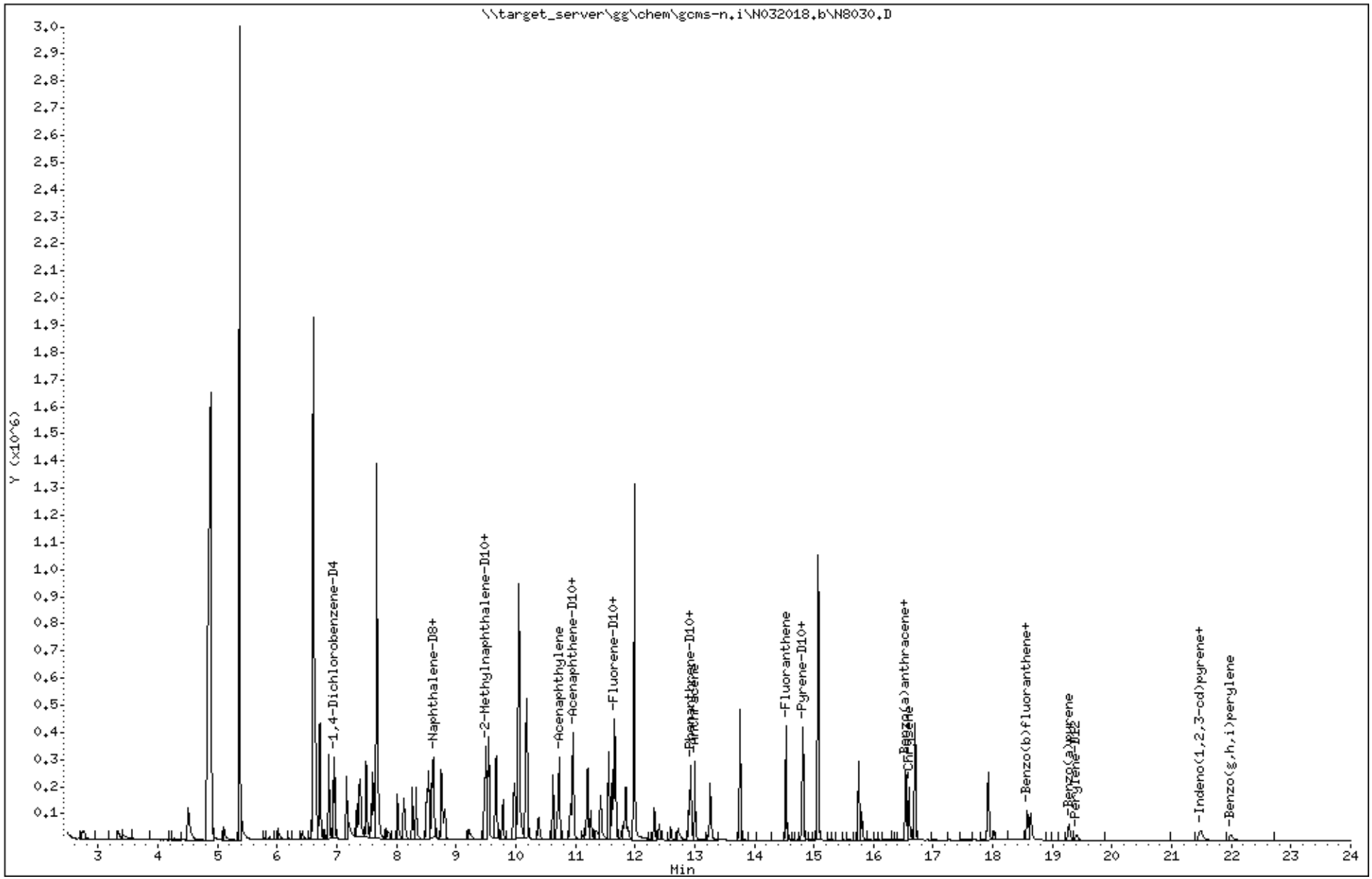
Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8030.D
Report Date: 26-Mar-2018 14:17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
	81 Benzo(k)fluoranthene	252	18.628	18.639	(0.960)	164378	1.46232	48.7(H)	
	82 Benzo(a)pyrene	252	19.275	19.286	(0.994)	104949	1.29137	43.0	
*	83 Perylene-D12	264	19.400	19.422	(1.000)	48980	0.80000		
	85 Indeno(1,2,3-cd)pyrene	276	21.467	21.489	(1.297)	90821	1.02546	34.2	
	86 Dibenzo(a,h)anthracene	278	21.501	21.523	(1.108)	65825	1.17117	39.0	
	87 Benzo(g,h,i)perylene	276	21.978	22.012	(1.133)	83923	1.18806	39.6	

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N032018.b\N8030.D
Date : 20-MAR-2018 13:50
Client ID: WG225021-LCS
Instrument: gcms-n.i
Sample Info: WG225021-2,SL2133
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 1000267

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ANALYTICAL SERVICES

Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225022-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: N8059.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022

Analysis Date: 21-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: NA
Report Date: 27-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Naphthalene	66.0	66.7	44.0	ug/Kgdrywt	38-125
2-Methylnaphthalene	65.2	66.7	43.5	ug/Kgdrywt	39-125
Acenaphthylene	61.3	66.7	40.9	ug/Kgdrywt	39-125
Acenaphthene	65.2	66.7	43.5	ug/Kgdrywt	44-125
Fluorene	65.7	66.7	43.8	ug/Kgdrywt	47-125
Phenanthrene	69.6	66.7	46.4	ug/Kgdrywt	49-125
Anthracene	68.2	66.7	45.5	ug/Kgdrywt	50-125
Fluoranthene	76.2	66.7	50.8	ug/Kgdrywt	55-125
Pyrene	68.2	66.7	45.5	ug/Kgdrywt	55-125
Benzo(a)anthracene	71.4	66.7	47.6	ug/Kgdrywt	54-125
Chrysene	75.4	66.7	50.3	ug/Kgdrywt	57-125
Benzo(b)Fluoranthene	75.0	66.7	50.0	ug/Kgdrywt	53-128
Benzo(k)fluoranthene	75.0	66.7	50.0	ug/Kgdrywt	56-125
Benzo(a)pyrene	63.3	66.7	42.2	ug/Kgdrywt	50-125
Indeno(1,2,3-cd)pyrene	61.5	66.7	41.0	ug/Kgdrywt	49-130
Dibenzo(a,h)anthracene	63.1	66.7	42.1	ug/Kgdrywt	50-129
Benzo(g,h,i)perylene	62.1	66.7	41.4	ug/Kgdrywt	49-127
2-Methylnaphthalene-D10	106.				19-125
Fluorene-D10	64.0				20-125
Pyrene-D10	67.6				31-128

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Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8059.D
Report Date: 26-Mar-2018 14:19

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Data file : \\target_server\gg\chem\gcms-n.i\N032118.b\N8059.D
Lab Smp Id: WG225022-2 Client Smp ID: WG225022-LCS
Inj Date : 21-MAR-2018 15:20 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225022-2,SL2133
Misc Info : WG225136,WG225020,WG225136-4,SL2133-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032118.b\NSPSIM87.m
Meth Date : 22-Mar-2018 09:08 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 10 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03000	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.940	6.930	(1.000)	59547	0.80000	(Q)	
*	26 Naphthalene-D8	136	8.591	8.581	(1.000)	193810	0.80000		
	27 Naphthalene	128	8.611	8.611	(1.002)	338113	1.32022	44.0	
$	32 2-Methylnaphthalene-D10	152	9.508	9.498	(1.107)	245146	2.11470	70.5(Q)	
	33 2-Methylnaphthalene	142	9.547	9.537	(1.111)	252779	1.30519	43.5	
	45 Acenaphthylene	152	10.730	10.719	(0.983)	288507	1.22659	40.9	
*	47 Acenaphthene-D10	164	10.915	10.915	(1.000)	85463	0.80000		
	48 Acenaphthene	153	10.959	10.948	(1.004)	198434	1.30548	43.5	
$	55 Fluorene-D10	174	11.623	11.612	(1.065)	133692	1.27931	42.6	
	56 Fluorene	166	11.656	11.645	(1.068)	210283	1.31495	43.8	
*	65 Phenanthrene-D10	188	12.906	12.895	(1.000)	120851	0.80000		
	66 Phenanthrene	178	12.927	12.916	(1.002)	273493	1.39109	46.4	
	67 Anthracene	178	13.002	12.991	(1.007)	274743	1.36612	45.5	
	70 Fluoranthene	202	14.527	14.518	(1.126)	255039	1.52401	50.8	
$	71 Pyrene-D10	212	14.799	14.790	(0.894)	139045	1.35279	45.1	
	72 Pyrene	202	14.818	14.809	(0.895)	256219	1.36477	45.5	
	74 Benzo(a)anthracene	228	16.544	16.535	(0.999)	135135	1.42945	47.6	
*	76 Chrysene-D12	240	16.563	16.544	(1.000)	51265	0.80000		
	77 Chrysene	228	16.601	16.591	(1.002)	149707	1.51031	50.3	
	80 Benzo(b)fluoranthene	252	18.582	18.571	(0.957)	81544	1.49918	50.0	

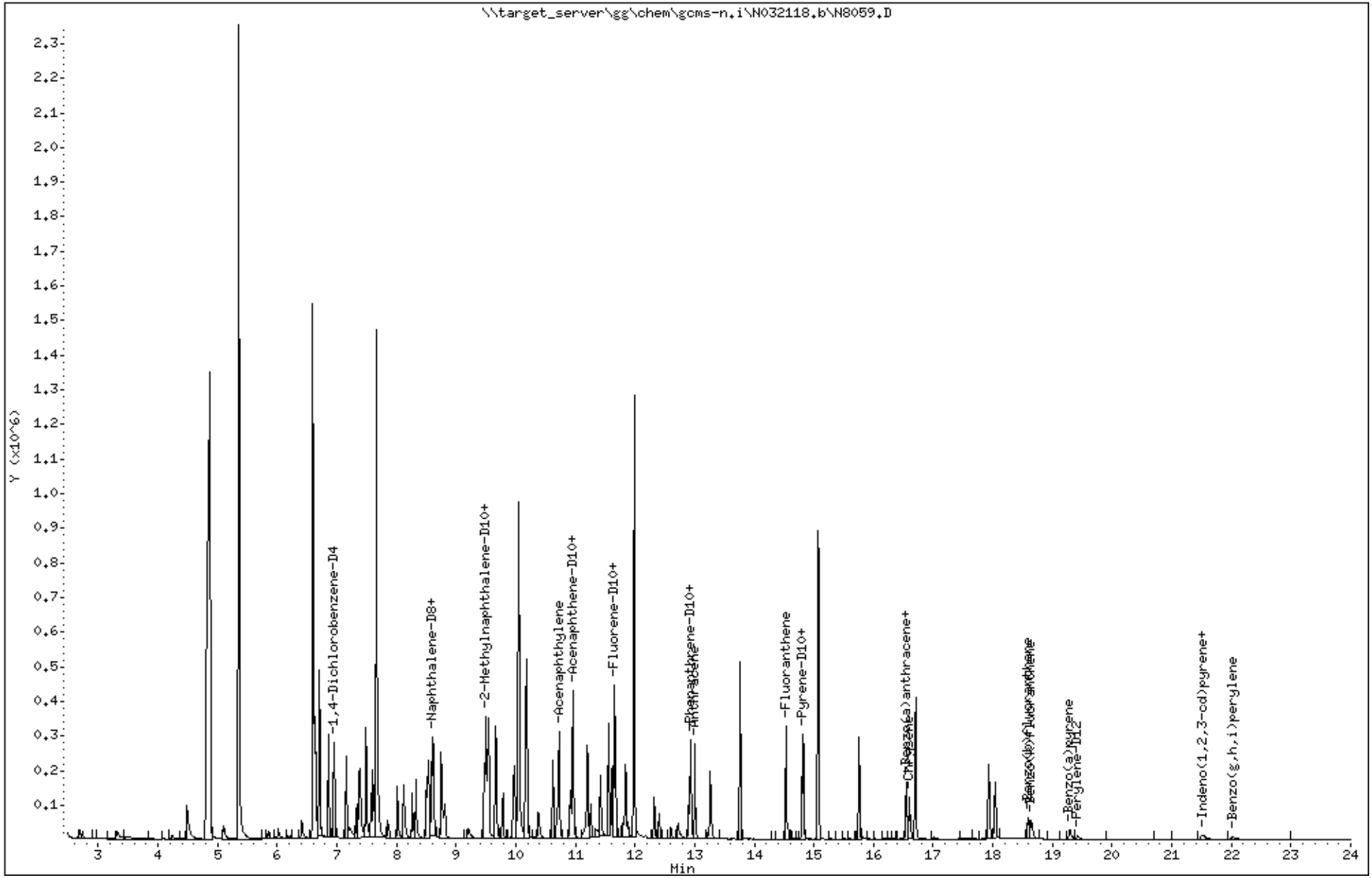
Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8059.D
Report Date: 26-Mar-2018 14:19

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
	81 Benzo(k)fluoranthene	252	18.639	18.616	(0.960)	95417	1.49998	50.0(H)	
	82 Benzo(a)pyrene	252	19.286	19.263	(0.993)	55931	1.26689	42.2	
*	83 Perylene-D12	264	19.423	19.400	(1.000)	25958	0.80000		
	85 Indeno(1,2,3-cd)pyrene	276	21.501	21.467	(1.298)	35641	1.23065	41.0	
	86 Dibenzo(a,h)anthracene	278	21.535	21.501	(1.109)	24249	1.26262	42.1	
	87 Benzo(g,h,i)perylene	276	22.023	21.978	(1.134)	33421	1.24098	41.4	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N032118.b\N8059.D
Date : 21-MAR-2018 15:20
Client ID: WG225022-LCS
Instrument: gcms-n.i
Sample Info: WG225022-2,SL2133
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



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ANALYTICAL SERVICES

Cert No E87604

MS/MSD Recovery Report

MS ID: WG225022-3
MSD ID: WG225022-4
Sample ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project:
SDG: SL2133
MS File ID: N8094.D

Received Date:
Extract Date: 19-MAR-18
Extracted By: DP
Extraction Method: SW846 3550C
Lab Prep Batch: WG225022
Report Date: 26-MAR-18
MSD File ID: N8095.D

Analysis Date: 22-MAR-18
Analyst: JCG
Analysis Method: SW846 8270D SIM
Matrix: SL
% Solids: 78.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	80.1	83.0	ug/Kgdrywt	U12	48.	52.	59.7	62.4	8	20	38-125
2-Methylnaphthalene	80.1	83.0	ug/Kgdrywt	U12	47.	51.	58.4	61.1	8	20	39-125
Acenaphthylene	80.1	83.0	ug/Kgdrywt	U12	50.	54.	62.7	65.0	7	20	39-125
Acenaphthene	80.1	83.0	ug/Kgdrywt	U12	52.	58.	65.0	70.0	11	20	44-125
Fluorene	80.1	83.0	ug/Kgdrywt	U12	53.	60.	66.7	72.2	11	20	47-125
Phenanthrene	80.1	83.0	ug/Kgdrywt	U12	54.	68.	68.0	81.8	22*	20	49-125
Anthracene	80.1	83.0	ug/Kgdrywt	U12	52.	58.	65.3	69.7	10	20	50-125
Fluoranthene	80.1	83.0	ug/Kgdrywt	U12	49.	62.	61.7	75.2	23*	20	55-125
Pyrene	80.1	83.0	ug/Kgdrywt	U12	57.	66.	71.2	79.3	14	20	55-125
Benzo(a)anthracene	80.1	83.0	ug/Kgdrywt	U12	52.	57.	64.3	68.6	10	20	54-125
Chrysene	80.1	83.0	ug/Kgdrywt	U12	54.	55.	67.9	66.5	1	20	57-125
Benzo(b)Fluoranthene	80.1	83.0	ug/Kgdrywt	U12	47.	52.	58.7	62.8	10	20	53-128
Benzo(k)fluoranthene	80.1	83.0	ug/Kgdrywt	U12	50.	52.	61.9	62.8	5	20	56-125
Benzo(a)pyrene	80.1	83.0	ug/Kgdrywt	U12	43.	48.	53.6	57.6	11	20	50-125
Indeno(1,2,3-cd)pyrene	80.1	83.0	ug/Kgdrywt	J2.6	70.	72.	83.5	84.0	4	20	49-130
Dibenzo(a,h)anthracene	80.1	83.0	ug/Kgdrywt	U12	63.	64.	78.7	76.5	1	20	50-129
Benzo(g,h,i)perylene	80.1	83.0	ug/Kgdrywt	U12	56.	60.	69.6	72.2	7	20	49-127
2-Methylnaphthalene-D10							75.4	67.8			19-125
Fluorene-D10							59.9	57.0			20-125
Pyrene-D10							63.8	59.3			31-128

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Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8094.D
Report Date: 26-Mar-2018 14:23

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Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8094.D
Lab Smp Id: WG225022-3 Client Smp ID: CHAAP-20B-SS06MS
Inj Date : 22-MAR-2018 15:44 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225022-3,SL2133
Misc Info : WG225233,WG225022,WG225136-4,SL2133-10
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 13 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03180	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	62605	0.80000		
*	26 Naphthalene-D8	136	8.581	8.561	(1.000)	195309	0.80000		
	27 Naphthalene	128	8.601	8.591	(1.002)	308231	1.19431	47.8	
$	32 2-Methylnaphthalene-D10	152	9.488	9.479	(1.106)	176374	1.50978	60.4	
	33 2-Methylnaphthalene	142	9.528	9.518	(1.110)	232747	1.16978	46.8	
	45 Acenaphthylene	152	10.719	10.697	(0.983)	286475	1.25245	50.2	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	83109	0.80000		
	48 Acenaphthene	153	10.948	10.937	(1.004)	192305	1.30100	52.1	
$	55 Fluorene-D10	174	11.602	11.591	(1.064)	121874	1.19925	48.0	
	56 Fluorene	166	11.645	11.623	(1.068)	207333	1.33323	53.4	
*	65 Phenanthrene-D10	188	12.884	12.874	(1.000)	117226	0.80000		
	66 Phenanthrene	178	12.916	12.895	(1.002)	259428	1.36035	54.5	
	67 Anthracene	178	12.991	12.970	(1.008)	255029	1.30730	52.3	
	70 Fluoranthene	202	14.518	14.499	(1.127)	200500	1.23515	49.4	
$	71 Pyrene-D10	212	14.781	14.762	(0.893)	101958	1.27726	51.1	
	72 Pyrene	202	14.809	14.790	(0.895)	207410	1.42254	57.0	
	74 Benzo(a)anthracene	228	16.526	16.498	(0.999)	94415	1.28596	51.5	
*	76 Chrysene-D12	240	16.544	16.516	(1.000)	39814	0.80000		
	77 Chrysene	228	16.582	16.554	(1.002)	105737	1.35795	54.4	
	80 Benzo(b)fluoranthene	252	18.560	18.526	(0.958)	60072	1.17388	47.0	

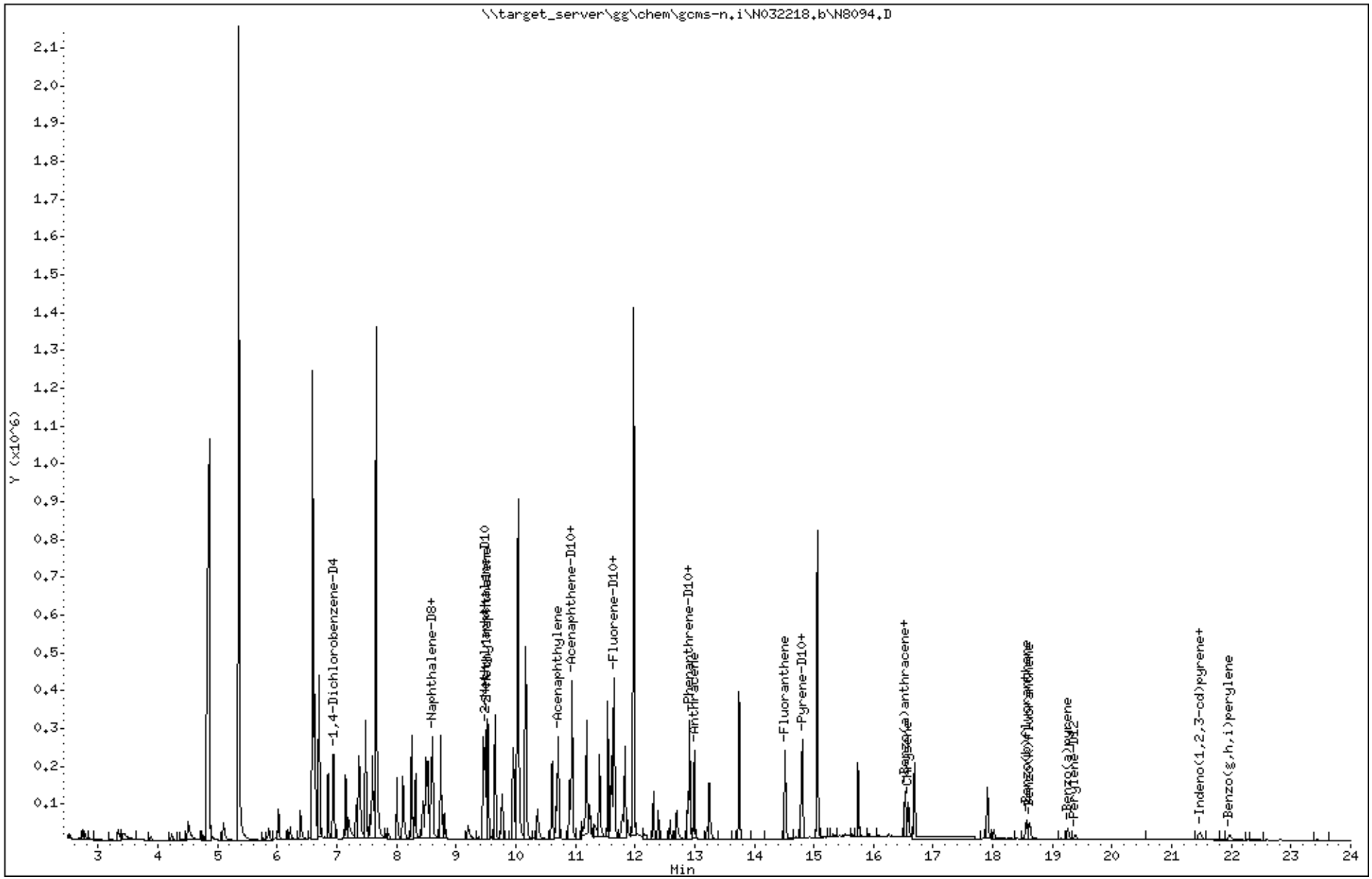
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8094.D
Report Date: 26-Mar-2018 14:23

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
81	Benzo(k)fluoranthene	252	18.616	18.582	(0.961)	75678	1.23995	49.6(H)	
82	Benzo(a)pyrene	252	19.252	19.218	(0.994)	44551	1.07259	42.9	
* 83	Perylene-D12	264	19.377	19.343	(1.000)	24422	0.80000		
85	Indeno(1,2,3-cd)pyrene	276	21.455	21.410	(1.297)	39060	1.73662	69.5	
86	Dibenzo(a,h)anthracene	278	21.478	21.456	(1.108)	28439	1.57392	63.0	
87	Benzo(g,h,i)perylene	276	21.967	21.921	(1.134)	35271	1.39204	55.7	

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8094.D
Date : 22-MAR-2018 15:44
Client ID: CHAAP-20B-SS06MS
Instrument: gcms-n.i
Sample Info: WG225022-3,SL2133
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 1000275

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8095.D
Report Date: 26-Mar-2018 14:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N032218.b\N8095.D
Lab Smp Id: WG225022-4 Client Smp ID: CHAAP-20B-SS06MSD
Inj Date : 22-MAR-2018 16:16 MS Autotune Date: 25-OCT-2017 07:54
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG225022-4,SL2133
Misc Info : WG225233,WG225022,WG225136-4,SL2133-10
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N032218.b\NSPSIM87.m
Meth Date : 26-Mar-2018 11:46 cgomez Quant Type: ISTD
Cal Date : 21-MAR-2018 13:37 Cal File: N8056.D
Als bottle: 14 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: ati-corn-aap.sub
Target Version: 4.12
Processing Host: V200T4

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03070	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
*	10 1,4-Dichlorobenzene-D4	152	6.930	6.910	(1.000)	63787	0.80000		
*	26 Naphthalene-D8	136	8.581	8.561	(1.000)	202857	0.80000		
	27 Naphthalene	128	8.601	8.591	(1.002)	334955	1.24956	51.8	
$	32 2-Methylnaphthalene-D10	152	9.488	9.479	(1.106)	164834	1.35849	56.3	
	33 2-Methylnaphthalene	142	9.528	9.518	(1.110)	250519	1.22182	50.7	
	45 Acenaphthylene	152	10.719	10.697	(0.983)	311420	1.29988	53.9	
*	47 Acenaphthene-D10	164	10.904	10.893	(1.000)	87049	0.80000		
	48 Acenaphthene	153	10.948	10.937	(1.004)	217049	1.40193	58.1	
$	55 Fluorene-D10	174	11.602	11.591	(1.064)	121416	1.14067	47.3	
	56 Fluorene	166	11.645	11.623	(1.068)	235310	1.44464	59.9	
*	65 Phenanthrene-D10	188	12.884	12.874	(1.000)	126496	0.80000		
	66 Phenanthrene	178	12.916	12.895	(1.002)	337001	1.63762	67.9	
	67 Anthracene	178	12.991	12.970	(1.008)	293290	1.39326	57.8	
	70 Fluoranthene	202	14.518	14.499	(1.127)	263757	1.50577	62.4	
$	71 Pyrene-D10	212	14.781	14.762	(0.894)	106001	1.18754	49.2	
	72 Pyrene	202	14.809	14.790	(0.896)	258580	1.58602	65.8	
	74 Benzo(a)anthracene	228	16.526	16.498	(0.999)	112639	1.37201	56.9	
*	76 Chrysene-D12	240	16.535	16.516	(1.000)	44520	0.80000		
	77 Chrysene	228	16.582	16.554	(1.003)	116098	1.33030	55.2	
	80 Benzo(b)fluoranthene	252	18.559	18.526	(0.958)	70940	1.25650	52.1	

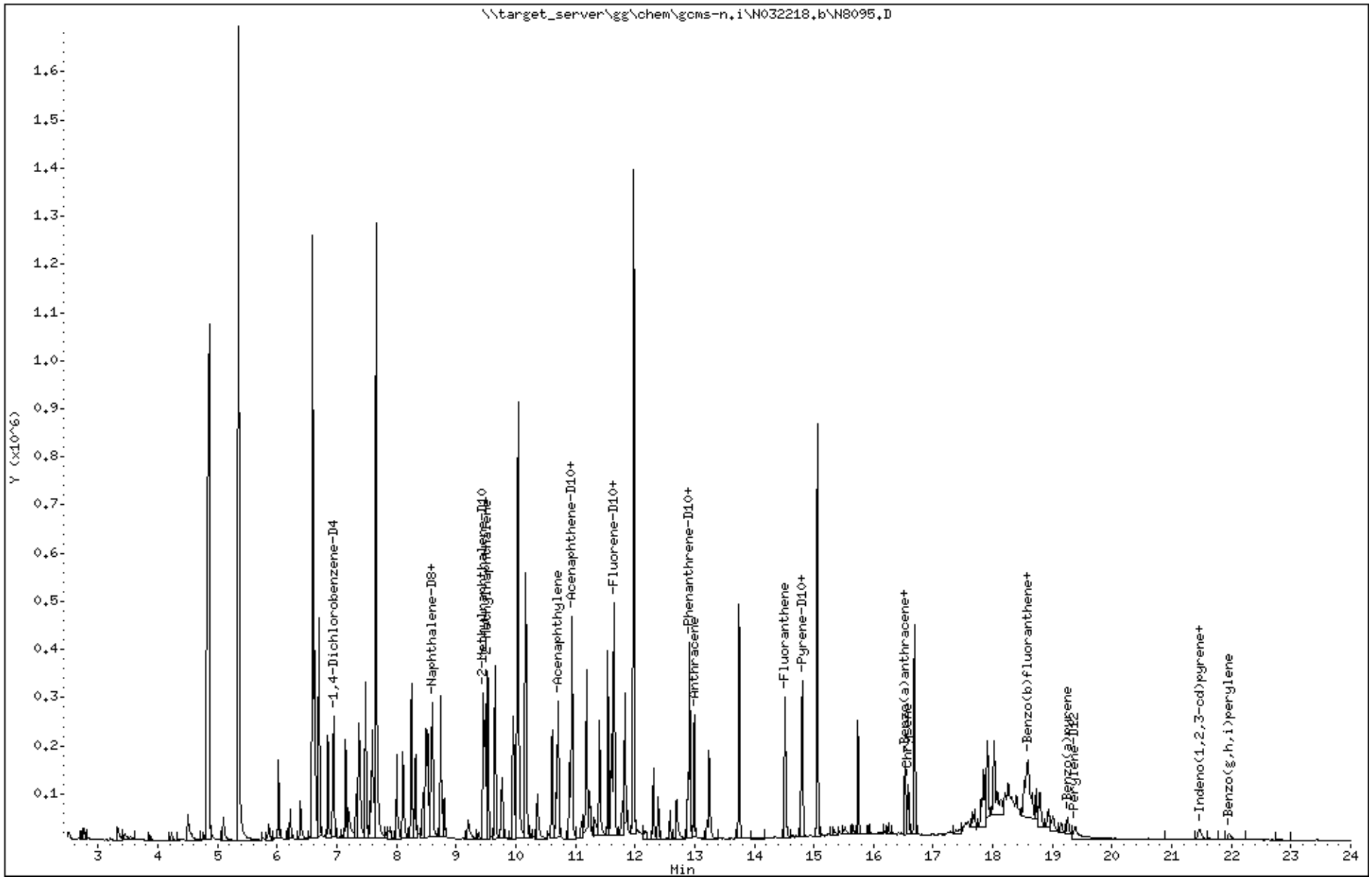
Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8095.D
Report Date: 26-Mar-2018 14:23

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	FINAL (ug/Kgdrywt)	REVIEW COD
81	Benzo(k)fluoranthene	252	18.616	18.582	(0.961)	84416	1.25538	52.1(H)	
82	Benzo(a)pyrene	252	19.252	19.218	(0.994)	52817	1.15258	47.8	
* 83	Perylene-D12	264	19.377	19.343	(1.000)	26944	0.80000		
85	Indeno(1,2,3-cd)pyrene	276	21.455	21.410	(1.298)	43868	1.74421	72.3	
86	Dibenzo(a,h)anthracene	278	21.489	21.456	(1.109)	30518	1.53089	63.5	
87	Benzo(g,h,i)perylene	276	21.966	21.921	(1.134)	40392	1.44494	59.9	

QC Flag Legend

H - Operator selected an alternate compound hit.

Data File: \\target_server\gg\chem\gcms-n.i\N032218.b\N8095.D
Date : 22-MAR-2018 16:16
Client ID: CHAAP-20B-SS06MSD
Instrument: gcms-n.i
Sample Info: WG225022-4,SL2133
Volume Injected (uL): 1.0
Operator: JCG
Column phase: ZB5-MS
Column diameter: 0.25



Katahdin Analytical Services 1000278

Logbooks and Supporting Documents

12/SIM SEP

KATAHDIN ANALYTICAL SERVICES, LLC.
ORGANIC EXTRACTIONS LOG - AQUEOUS SEMI-VOLATILES

Extraction Method: (check one)	SW846 3510 (SEP) ✓	SW846 3520 (CLLE)	SW846 3535 (SPE)
Analytical Method:(check one)	SW846 8270 ✓	SW846 8270 SIM ✓	EPA 625 (mark meniscus w/ marker to determine IV) ✓
Surrogate ID: SV2841	Surrogate ID: SV2033	Spike ID: SIM: SV2843	Spike ID:
Methylene Chloride Lot #: DT306	pH Paper Lot # NC613965	KI Starch Paper ID: 022017	Note samples requiring TRC neutralization in comments section.
pH (1st Extraction) 5-2	H_2SO_4 Lot # 177543	pH (2nd Extraction) 2-11	NaOH Lot # 190393
$NaSO_4$ Lot # 279670B3	Filter Paper Lot #: 9851692	Boiling Stones ID: 3-27-2014	Vial Lot #: 393232
Nitrogen Bath Temperature: 30'C	—	—	—
Prep Start Time: 1110	Prep End Time: 1310	CLLE Start Time: —	CLLE End Date & Time: —

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
3-19-18	KF	WG225023-1 (SIM) WG225024-1 (625)	1000	1mL	N/R	✓	✓	1mL	3-19-18	SV2033 67	JMS	SIM R465354 ~~500X R465355~~
↓	↓	WG225023-2	1000	↓	1mL		✓	↓	↓	63	JMS 3/19	625
↓	↓	WG225024-2	1000	↓	↓	✓				64		
		-3	500			↓				65		MS SLZ141-1E
		-4	MS 550							66		MSD ↓ -1E
									KF	3-19-18		

EX-007 – Revision 5 – 11/08/2017 QAEX342 0000136

Date Extracted	Ext. Init.	Sample ID	Initial Vol. mL	Surr. Vol.	Spike Vol.	Fraction SV	Fraction SIM	Final Vol. mL	Date Conc.	Tray Location	Initials	Comments
3-19-18	KF	SLZ079-1 MS	1030	1mL	N/R		✓	1mL	3-19-18	07	JMS	
↓	↓	SLZ133-10E	1030	↓	↓		↓	↓	↓	68	↓	
		SLZ041-10ct1B	1050			✓				69		625
		SLZ141-1E	1030			↓				610		↓ MS/D
↓	↓	SLZ053-1G	1060	↓	↓	↓		↓	↓	C1	↓	625 em-ss-cut
										KF	3-19-18	

Reviewed By_____ Date_____

Katahdin Analytical Services 1000280

Katahdin Analytical Services
GPC02 Logbook

Analytical Method: (check one)	SW846 8081 ✓	SW846 8082 ✓		SW846 8270 ✓	
MeCl2 Lot #: DT306	Filter Lot #: —	Room Temperature (beginning):	19.8	Room Temperature (ending):	20.2
Flow Rate: 5.0 mL/min	Flow Rate Set at: 4.75 mL/min	GPC Dump Time:	45 min	GPC Collect Time:	—
Time to fill 50 mL: 9.58 min	Column Pressure: 16				

Tray Pos. No.	Sample Identification	Date Extracted	Extract Volume	GPC Analyst	Date GPC Started	GPC Initial Volume	S V	P P	Comments
1	Dry Run	—	—	KF	3-19-18	5mL	✓	✓	
2	GPC Calib STD	—	—	↓	↓	↓	✓	✓	
3	STD758D lot#A012418								
4	0.5mL → 10 mL in								
5	MeCl2 lot# DT306								
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21					KF	3-19-18			
22									

Katahdin Analytical Services
GPC02 Logbook

Tray Pos. No.	Sample Identification	Date Extracted	Extract Volume	GPC Analyst	Date GPC Started	GPC Initial Volume	S V	P P	Comments
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
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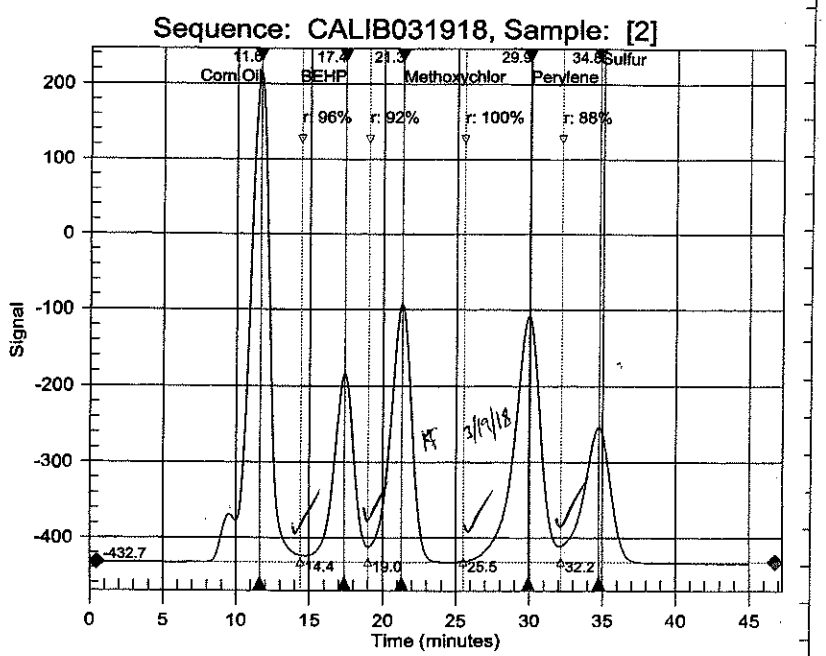
40									
41									
42									
43									
44									
45									



P/P Dump: 19.0 Collect: 13.2

S/S Dump: 14.4 Collect: 21.6

Katahdin Analytical Services 1000281

SON - SIM

KATAHDIN ANALYTICAL SERVICES, LLC

ORGANIC EXTRACTIONS LOG - SOIL SEMIVOLATILE

Extraction Method:	SW846 3550:	SW846 3540:	SW846 3545:	SW846 3546:	SW846 3580:
Analytical Method:	SW846 8270:	OTHER:			
Standards	Surrogate ID (1): SV2841		Spike ID (1): SV2843	Spike ID (3): —	
	Surrogate ID (2): —		Spike ID (2): —		
Solvents / Chemicals / Consumables	Solvent Lot # (MeCl2): DT306		Solvent Lot # (Acetone): DT350	Sodium Sulfate (granular) Lot #: 27967003	
	Filter Paper Lot # (SON): 9837925		Filter Paper Lot # (KD): 9851692	Sodium Sulfate (powder) Lot #: 27977004	
Misc.	Nitrogen Bath Temperature: 36°	Sonicator Horns Tuned: Yes	Balance ID: METTLER PJ400	Vial Lot ID: 402438 & 393232	
Prep Start Time: 09:30	Prep Stop Time: 12:00	Sox Start Time: —	Sox End Date: —	Sox End Time: —	

Ext. Date	Ext. Init.	Sample ID	Initial Weight (g)	Surr. Vol. (mL)	Spk. Vol. (mL)	Fraction SCAN	Fraction MS	Pre-GPC Date Conc.	Pre-GPC Conc. Init.	Pre-GPC Final Vol. (mL)	Post-GPC Date Conc.	Post-GPC Conc. Init.	Post-GPC Final Vol. (mL)	Tray Loc.	Comments
03-19-18	PP	wg225021-1	30.00	1.00	NA		X	3-19-18	JMS	5mL	03-20-18	WAS	1.00	SV292 C2	2465343
		-2	30.04		1.00									C3	
		-3	30.41											C4	MS: SL2079-9N
		-4	30.06											C5	MSD: SL2079-9N
		GPC Blk #23-A												C6	
															PP 03-19-18

EX-008 – Revision 3 – 01/25/2016

QAEX331

0000182

Ext. Date	Ext. Init.	Sample ID	Initial Weight (g)	Surr. Vol. (mL)	Spk. Vol. (mL)	Fraction SCAN	Fraction MS	Pre-GPC Date Conc.	Pre-GPC Conc. Init.	Pre-GPC Final Vol. (mL)	Post-GPC Date Conc.	Post-GPC Conc. Init.	Post-GPC Final Vol. (mL)	Tray Loc.	Comments
03-19-18	PP	SL2079-1E	30.14	1mL	NA		X	3-19-18	JMS	5mL	03-20-18	WAS	1.00	C7	
		-2E	31.42											C8	
		-3E	30.94											C9	
		-4E	30.06											C10	
		-5E	30.96											D1	
		-6E	30.51											D2	
		-7E	30.62											D3	
		-8E	30.52											D4	
		-9N	30.51											D5	MS/MSD
		-10E	30.70											D6	
		-11E	30.14											D7	
		-12E	31.66											D8	
		-13E	30.04											D9	
		SL2133-1A	30.13											D10	
		-2A	30.98											E1	
		-3A	30.73											E2	
		-4A	30.93											E3	
															PP 03-19-18

Reviewed By_____ Date_____

EX-008 – Revision 3 – 01/25/2016

QAEX331

0000183

Katahdin Analytical Services 1000282

SON-SIM

KATAHDIN ANALYTICAL SERVICES, LLC

ORGANIC EXTRACTIONS LOG - SOIL SEMIVOLATILE

Extraction Method:	SW846 3550:	SW846 3540:	SW846 3545:	SW846 3546:	SW846 3580:
Analytical Method:	SW846 8270:	OTHER:			
Standards	Surrogate ID (1): SV2841	Spike ID (1): SV2843	Spike ID (3): —		
	Surrogate ID (2): —	Spike ID (2): —			
Solvents / Chemicals / Consumables	Solvent Lot # (Mecl2): DT306	Solvent Lot # (Acetone): DT350	Sodium Sulfate (granular) Lot #: 27967003		
	Filter Paper Lot # (SON): 9837925	Filter Paper Lot # (KD): 9851692	Sodium Sulfate (powder) Lot #: 27977004		
Misc.	Nitrogen Bath Temperature: 36°	Sonicator Horns Tuned: 40%	Balance ID: METTLER PJ400	Vial Lot ID: 402438 ; 393232	
Prep Start Time: 12:00	Prep Stop Time: 14:10	Sox Start Time: —	Sox End Date: —	Sox End Time: —	

Ext. Date	Ext. Init.	Sample ID	Initial Weight (g)	Surr. Vol. (mL)	Spk. Vol. (mL)	Fraction SCAN	Fraction SIM	Pre-GPC Date Conc.	Pre-GPC Conc. Init.	Pre-GPC Final Vol. (mL)	Post-GPC Date Conc.	Post-GPC Conc. Init.	Post-GPC Final Vol. (mL)	Tray Loc. SV293	Comments R465394
03-19-18	DP	WG225022-1	30.04	1.00	NR		X	3-19-18	JMJ	5mL	03-20-18	DP	1.00	B7	
		-2	30.60		1.00									8	
		-3	31.84											9	MS: SL2133-19
		-4	30.68											10	MSD: SL2133-19
		GPC BLANK									03-20-18	DP	1.00	D8	
														DP	03-19-18

EX-008 – Revision 3 – 01/25/2016

QAEX331

0000184

Ext. Date	Ext. Init.	Sample ID	Initial Weight (g)	Surr. Vol. (mL)	Spk. Vol. (mL)	Fraction SCAN	Fraction SIM	Pre-GPC Date Conc.	Pre-GPC Conc. Init.	Pre-GPC Final Vol. (mL)	Post-GPC Date Conc.	Post-GPC Conc. Init.	Post-GPC Final Vol. (mL)	Tray Loc. SV293	Comments
03-19-18	DP	SL2133 -5A	31.26	1.00	NR		X	3-19-18	JMJ	5mL	03-20-18	DP	1.00	C1	
		-6A	31.03											C2 2	
		-7A	31.27											3 3	
		-8A	30.71											4	
		-9A	31.98											5 5	
		-10A	30.58											6 6	
		-11A	31.37											7 7	
		-12A	30.36											8 8	
		-13A	30.30											9 9	
		-14A	30.92											10 10	DP 03-20-18
		-15A	32.37											D1	
		-16A	30.52											2	
		-17A	32.83											3	
		-18A	30.72											4	
		-19A	33.06											5	MS/MSD
		-21A	30.64											6	
		-22A	30.30											7	
															DP 03-19-18

Reviewed By_____ Date_____

EX-008 – Revision 3 – 01/25/2016

QAEX331

0000185

Katahdin Analytical Services
GPC02 Logbook

Analytical Method: (check one)	SW846 8081	SW846 8082		SW846 8270 ✓	
MeCl2 Lot #: DT306	Filter Lot #: TO407171425	Room Temperature (beginning):	20.1	Room Temperature (ending):	22.6
Flow Rate: 5.0 mL/min	Flow Rate Set at: 4.75 mL/min	GPC Dump Time:	SS 14.4	GPC Collect Time:	SS 21.6
Time to fill 50 mL: 9.58 min	Column Pressure: 3				

Tray Pos. No.	Sample Identification	Date Extracted	Extract Volume	GPC Analyst	Date GPC Started	GPC Initial Volume	S V	P P	Comments
1	GPC Blank SM	–	–	KF	3-19-18	5mL	✓		Expected 108mL Actual:
2	WG225021-1	3/19/18	5mL						SMSDN
3	-2								
4	-3								
5	-4								
6	SL2079-1								
7	-2								
8	-3								
9	-4								
10	-5								
11	-6								
12	-7								
13	-8								
14	-9								
15	-10								
16	-11								
17	-12								
18	-13								
19	SL2133-1								
20	-2								
21	-3								
22	-4								

Katahdin Analytical Services
GPC02 Logbook

Tray Pos. No.	Sample Identification	Date Extracted	Extract Volume	GPC Analyst	Date GPC Started	GPC Initial Volume	S V	P P	Comments
23	Dry Run	–	–	KF	3-19-18	5mL			
24	Dry Run	–	–	↓	↓	↓			
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44						KF			3-20-18
45									

Katahdin Analytical Services 1000284

Katahdin Analytical Services
GPC03 Logbook

Analytical Method: (check one)	SW846 8081 ✓	SW846 8082 ✓		SW846 8270 ✓	
MeCl2 Lot #: DT306	Filter Lot #: –	Room Temperature (beginning):	20.7	Room Temperature (ending):	19.8
Flow Rate: 5.0 mL/min	Flow Rate Set at: 5.0 mL/min	GPC Dump Time:	45 min	GPC Collect Time:	–
Time to fill 50 mL: 9.10 min	Column Pressure: 4				

Tray Pos. No.	Sample Identification	Date Extracted	Extract Volume	GPC Analyst	Date GPC Started	GPC Initial Volume	S V	P P	Comments
1	Dry Run	–	–	KF	3/19/18	5mL	✓	✓	
2	GPC Calib STD	–	–	↓	↓	↓	✓	✓	
3	STD7580 lot#A01249118								
4	0.5mL → 10mL in MeCl2								
5	lot#DT306								
6					KF	3-19-18			
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									

Tray Pos. No.	S
23	
24	
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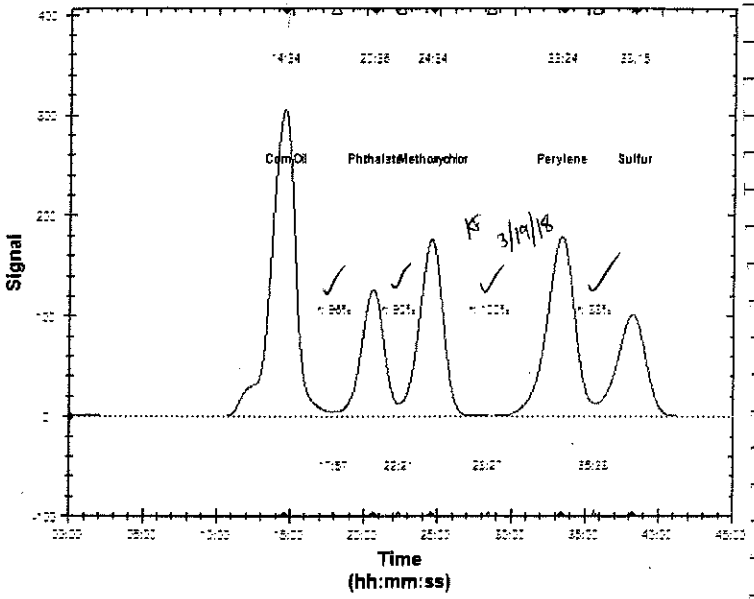
CALIBRATION REPORT

Sequence: CALIB031918.seq, Sample: [2] - [DT1]



TEMPLATE NAME : CO775_with_CO776_Guard

PEAK	SAMPLE	RET. TIME	SIGNAL
1	Corn Oil	14:34	305
2	Phthalate	20:36	127
3	Methoxychlor	24:34	176
4	Perylene	33:24	179
5	Sulfur	38:15	102

VALLEY	PEAKS	RES.	LIMIT	P/F
1	Corn Oil/Phthalate	96	0	P
2	Phthalate/Methoxychlor	90	0	P
3	Methoxychlor/Perylene	100	0	P
4	Perylene/Sulfur	88	0	P

KF 3/19
P/P Dump: ~~17.57~~ 22.24 Collect: 13.17

S/S Dump: 17.57 Collect: 21.43

Katahdin Analytical Services 1000285

Katahdin Analytical Services
GPC03 Logbook

Analytical Method: (check one)	SW846 8081	SW846 8082		SW846 8270 ✓	
MeCl2 Lot #: DT306	Filter Lot #: 104071714425	Room Temperature (beginning):	19.7	Room Temperature (ending):	22.6
Flow Rate: 5.0 mL/min	Flow Rate Set at: 5.45 mL/min	GPC Dump Time:	SS 17.57	GPC Collect Time:	SS 21.43
Time to fill 50 mL: 9.10 min	Column Pressure: 2				

Tray Pos. No.	Sample Identification	Date Extracted	Extract Volume	GPC Analyst	Date GPC Started	GPC Initial Volume	S V	P P	Comments
1	GPC Blank SIM	--	--	KF	3-19-18	5mL	✓		Expected: 10.7mL Actual: 10.4mL
2	WG225022-1	3-19-18	5mL						SIMSOW
3	-2								
4	-3								
5	-4								
6	SLZ133-5								
7	-6								
8	-7								
9	-8								
10	-9								
11	-10								
12	-11								
13	-12								
14	-13								
15	-14								
16	-15								
17	-16								
18	-17								
19	-18								
20	-19								
21	-21								
22	-22								

Katahdin Analytical Services
GPC03 Logbook

Tray Pos. No.	Sample Identification	Date Extracted	Extract Volume	GPC Analyst	Date GPC Started	GPC Initial Volume	S V	P P	Comments
23	Dry Run	--	--	KF	3-19-18	5mL			
24	Dry Run	--	--	↓	↓	↓			
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44						KF		3-20-18	
45									

Katahdin Analytical Services 1000286

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 031618

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG224895-1	50 ng DFTPP	ND493	1	1	DFTPP SLM	2.0	[illegible]	OK
-4	SSTD 2.0 N 0316	N7968		2	NSP SLM 86			✓
-2	0.2	69		3				✓
-3	0.5	70		4				✓
-5	7.0	71		5				✓
-6	10.	72		6				✓
-7	15.	73		7				✓
-8	IND	74		8				OK
	WG224151-1	75		9				OK
	-2	76		10				OK
	SL0779-27RA	77		11				~~SS3~~ SLM OK
	-31	78		12				OK
	-37	79		13				OK
	-38	80		14				OK
	-39	81		15				OK
	-40	82		16				OK
	-41	83		17				OK
	SL1734-1	84		18				SS2↑ DL1:100
	-2	85		19				SS2↑ DL1:40
	-3	86		20				OK DL1:6
	-4	87		21				OK DL1:8
	-5	88		22				OK DL1:2
-9	SSTD 2.0 N0316	89		23				OK
-10		90						–
-11		91						–
	SL1734-6	92		24				– DL1:500 Screen
	-7	93		25				– DL1:5
	-8	94		26				–
		95-97		23				

STANDARD	CODE TEST 1,2,3
DFTPP	S3053
CAL. STD.	S3039 S3058
ICV. STD.	S3054
IS MIX	S3056

REVIEWED AND APPROVED BY:
DATE:

KATAHDIN ANALYTICAL SERVICES

GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 032018

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG225084-1	50ng DFTPP	ND495	1	1	DFTPPSIM	2.0	JLL	OK
-2	SSTD2.0 NO320	N8024		2	NSPSIM86			OK
	WG225023-1	25		3				OK
	↓ -2	26		4				OK
	SL2079-14	27		5				OK
	SL2133-20	28		6				OK
	WG225021-1	29		7				OK
	↓ -2	30		8				OK
	SL2079-1	31		9				OK
	-2	32		10				OK
	-3	33		11				OK
	-4	34		12				OK
	-5	35		13				OK
	-6	36		14				OK
	-7	37		15				OK
	-8	38		16				OK
	-9	39		17				OK
	WG225021-3	40		18				OK Low recs ↓
	↓ -4	41		19				OK
	SL2133-1	42		20				OK
	-2	43		21				OK
	-3	44		22				OK
-3	SSTD2.0 NO320	45		23				OK
-4		46						—
-5	↓	47	↓	↓	↓	↓	↓	—
	TEST 1,2,3	48-50	1	23				—

STANDARD	CODE
DFTPP	53055
CAL. STD.	53039 53054
ICV. STD.	
IS MIX	53056

REVIEWED AND APPROVED BY: _____

DATE: _____

Katahdin Analytical Services 1000288

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 032118

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG22K136-1	50ng DFTPP	ND496	1	1	DFTPPSVM	2.0	JLF	OK
	SSTD 2.0 NO321	N8051		2	NSPSVM87			✓
	10.V	52		3				✓
	0.5	53		4				✓
	7.0	54		5				✓
	10.	55		6				✓
	15.	56		7				✓
	MB	57		8				OK
	WG225022-1	58		9				OK
	-2	59		10				OK
	SL2079-10	60		11				OK
	-11	61		12				OK
	-12	62		13				OK
	-13	63		14				OK
	SL2133-4	64		15				OK
	WG225022-3	65		16				– not used
	-4	66		17				– ↓
	SL2133-5	67		18				OK
	-6	68		19				OK
	-7	69		20				OK
	-8	70		21				OK
	-9	71		22				OK
	SSTD 2.0 NO321	72-74		23				OK
	SL2133-10	75		24				Screen
	-11	76		25				
	-12	77		26				
	-13	78		27				
	-14	79		28				

STANDARD	CODE	80-82
DFTPP	53055	
CAL. STD.	53039 53058	
ICV. STD.	53054	
IS MIX	53056	

23

REVIEWED AND APPROVED BY: _____
DATE: _____

Katahdin Analytical Services 1000289

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5975B - N

DATE OF DFTPP INJECTION: 032218

JOB	SAMPLE	DATAFILE	DF	VIAL #	METHOD	UL INJ	CHEMIST	COMMENTS
WG225233-1	50 ng DFTPP	ND 497	1	1	DFTPP SIM	2.0	JLT	OK
	SSTD 2.0 N 0322	N 8083		2	NSPSIM87			OK
	SL2133-10	84		3				OK
	-11	85		4				OK
	-12	86		5				OK
	-13	87		6				OK
	-14	88		7				OK
	-15	89		8				OK
	-16	90		9				OK
	-17	91		10				OK
	-18	92		11				OK
	-19	93		12				OK
	WG225022-3	94		13				OK
	-4	95		14				OK
	SL2133-21	96		15				OK
	-22	97		16				OK
	WG225140-1	98		17				OK
	SL1970-19	99		18				OK DL1:5
	SL1970-18	N8100		19				OK DL1:3
	-20	01		20				OK DL1:3
	-21	02		21				~~153~~ JLT 552↑ DL1:100
	~~-22~~ 21 JLT	03		22				~~153~~ OK DL1:~~100~~ 2
-3	SSTD 2.0 N0322	04		23				OK
-4		05						—
-5		06						—
	MeCl2 QC	07		24				lot DT485

STANDARD	CODE
DFTPP	53055
CAL. STD.	53039 53058
ICV. STD.	
IS MIX	53056

REVIEWED AND APPROVED BY: _____
DATE: _____

SVOA-005 – Revision 2 – 02/13/2018

QAMS650

0000015

Katahdin Analytical Services 1000290

EXPLOSIVES DATA

QC Summary Section

Katahdin
ANALYTICAL SERVICES

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-20B-EB-031518	SL2133-20	B	97.0	
Method Blank Sample	WG225094-1	B	96.3	
Laboratory Control S	WG225094-2	B	101.	

		QC Limits
DNB	1,2-DINITROBENZENE	83-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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ANALYTICAL SERVICES

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

Client Sample ID	Lab Sample ID	Col. ID	DNB	#
CHAAP-20B-SB01-11	SL2133-1	B	92.6	
CHAAP-20B-SB05-4	SL2133-10	B	85.1	
CHAAP-20B-SB05-8	SL2133-11	B	88.0	
CHAAP-20B-SB06-4	SL2133-12	B	86.1	
CHAAP-20B-SB06-8	SL2133-13	B	86.3	
CHAAP-20B-SS01	SL2133-14	B	85.5	
CHAAP-20B-SS02	SL2133-15	B	83.8	
CHAAP-20B-SS03	SL2133-16	B	86.1	
CHAAP-20B-SS04	SL2133-17	B	83.3	
CHAAP-20B-SS05	SL2133-18	B	83.3	
CHAAP-20B-SS06	SL2133-19	B	86.2	
CHAAP-20B-SB01-4	SL2133-2	B	93.1	
CHAAP-20B-SS102	SL2133-21	B	84.9	
CHAAP-20B-SS102	SL2133-21DL	B	0.00	D
CHAAP-20B-SS104	SL2133-22	B	81.6	
CHAAP-20B-SB01-8	SL2133-3	B	91.3	
CHAAP-20B-SB02-4	SL2133-4	B	93.5	
CHAAP-20B-SB02-8	SL2133-5	B	96.3	
CHAAP-20B-SB02-8	SL2133-5DL	B	90.7	
CHAAP-20B-SB03-4	SL2133-6	B	91.2	
CHAAP-20B-SB03-8	SL2133-7	B	91.5	
CHAAP-20B-SB04-4	SL2133-8RE	B	85.6	
CHAAP-20B-SB04-8	SL2133-9	B	85.8	
Method Blank Sample	WG225027-1	B	90.4	
Laboratory Control S	WG225027-2	B	99.4	
Laboratory Control S	WG225027-5	B	101.	
Method Blank Sample	WG225028-1	B	94.8	
Laboratory Control S	WG225028-2	B	102.	
Matrix Spike	WG225028-3	B	100.	
Matrix Spike Duplica	WG225028-4	B	97.3	
Method Blank Sample	WG225426-1	B	87.4	
Laboratory Control S	WG225426-2	B	96.6	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** SL
Lab Code: KAS **SDG:** SL2133

		QC Limits
DNB	1,2-DINITROBENZENE	78-125

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10039.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225027-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 19:09

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225027-2	HLC10040.	03/20/18	19:40
Laboratory Control S	WG225027-5	HLC10041.	03/20/18	20:12
CHAAP-20B-SB01-11	SL2133-1	HLC10099.	03/22/18	07:06
CHAAP-20B-SB01-4	SL2133-2	HLC10100.	03/22/18	07:38
CHAAP-20B-SB01-8	SL2133-3	HLC10101.	03/22/18	08:10
CHAAP-20B-SB02-4	SL2133-4	HLC10102.	03/22/18	08:41

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10153.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225027-1C
Date Extracted : 19-MAR-18
Date Analyzed : 23-MAR-18
Time Analyzed : 16:52

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-20B-SB01-11	SL2133-1C	HLC10154.	03/23/18	17:41
CHAAP-20B-SB01-4	SL2133-2C	HLC10155.	03/23/18	18:30
CHAAP-20B-SB01-8	SL2133-3C	HLC10156.	03/23/18	19:19
CHAAP-20B-SB02-4	SL2133-4C	HLC10157.	03/23/18	20:08

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10044.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL2133
Lab Sample ID : WG225094-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 21:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225094-2	HLC10045.	03/20/18	22:19
CHAAP-20B-EB-031518	SL2133-20	HLC10047.	03/20/18	23:23

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ANALYTICAL SERVICES

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10082.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225028-1
Date Extracted : 20-MAR-18
Date Analyzed : 21-MAR-18
Time Analyzed : 19:10

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225028-2	HLC10083.	03/21/18	19:41
Matrix Spike	WG225028-3	HLC10104.	03/22/18	09:45
Matrix Spike Duplica	WG225028-4	HLC10105.	03/22/18	10:17
CHAAP-20B-SB02-8	SL2133-5	HLC10106.	03/22/18	10:48
CHAAP-20B-SB03-4	SL2133-6	HLC10107.	03/22/18	11:20
CHAAP-20B-SB03-8	SL2133-7	HLC10108.	03/22/18	11:52
CHAAP-20B-SB04-8	SL2133-9	HLC10110.	03/22/18	12:56
CHAAP-20B-SB05-4	SL2133-10	HLC10111.	03/22/18	13:27
CHAAP-20B-SB05-8	SL2133-11	HLC10112.	03/22/18	13:59
CHAAP-20B-SB06-4	SL2133-12	HLC10113.	03/22/18	14:31
CHAAP-20B-SB06-8	SL2133-13	HLC10115.	03/22/18	16:54
CHAAP-20B-SS01	SL2133-14	HLC10116.	03/22/18	17:25
CHAAP-20B-SS02	SL2133-15	HLC10117.	03/22/18	17:57
CHAAP-20B-SS03	SL2133-16	HLC10118.	03/22/18	18:29
CHAAP-20B-SS04	SL2133-17	HLC10119.	03/22/18	19:01
CHAAP-20B-SS05	SL2133-18	HLC10120.	03/22/18	19:33
CHAAP-20B-SS06	SL2133-19	HLC10121.	03/22/18	20:04
CHAAP-20B-SS102	SL2133-21	HLC10122.	03/22/18	20:36
CHAAP-20B-SS104	SL2133-22	HLC10123.	03/22/18	21:08
CHAAP-20B-SB02-8	SL2133-5DL	HLC10147.	03/23/18	10:09
CHAAP-20B-SS102	SL2133-21DL	HLC10150.	03/23/18	13:04

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10201.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225028-1C
Date Extracted : 20-MAR-18
Date Analyzed : 28-MAR-18
Time Analyzed : 11:28

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-20B-SB02-8	SL2133-5C	HLC10202.	03/28/18	12:15
CHAAP-20B-SB03-4	SL2133-6C	HLC10203.	03/28/18	13:02
CHAAP-20B-SB03-8	SL2133-7C	HLC10204.	03/28/18	13:49
CHAAP-20B-SB04-8	SL2133-9C	HLC10206.	03/28/18	15:24
CHAAP-20B-SB05-4	SL2133-10C	HLC10207.	03/28/18	16:11
CHAAP-20B-SB05-8	SL2133-11C	HLC10208.	03/28/18	16:58
CHAAP-20B-SB06-4	SL2133-12C	HLC10209.	03/28/18	17:45
CHAAP-20B-SB06-8	SL2133-13C	HLC10210.	03/28/18	18:32
CHAAP-20B-SS01	SL2133-14C	HLC10212.	03/28/18	20:07
CHAAP-20B-SS02	SL2133-15C	HLC10213.	03/28/18	20:54
CHAAP-20B-SS03	SL2133-16C	HLC10214.	03/28/18	21:41
CHAAP-20B-SS04	SL2133-17C	HLC10215.	03/28/18	22:28
CHAAP-20B-SS05	SL2133-18C	HLC10216.	03/28/18	23:15
CHAAP-20B-SS06	SL2133-19C	HLC10217.	03/29/18	00:02
CHAAP-20B-SS102	SL2133-21C	HLC10218.	03/29/18	00:50
CHAAP-20B-SS104	SL2133-22C	HLC10219.	03/29/18	01:37

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10176.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225426-1
Date Extracted : 26-MAR-18
Date Analyzed : 27-MAR-18
Time Analyzed : 10:03

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225426-2	HLC10177.	03/27/18	10:35
CHAAP-20B-SB04-4	SL2133-8RE	HLC10181.	03/27/18	13:18

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10220.D
Instrument ID : HPLC02
Matrix : SL

SDG : SL2133
Lab Sample ID : WG225426-1C
Date Extracted : 26-MAR-18
Date Analyzed : 29-MAR-18
Time Analyzed : 02:24

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-20B-SB04-4	SL2133-8REC	HLC10221.	03/29/18	03:11

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL2133
Project : Cornhusker Army Ammunition Plant **Column ID :** B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	DNB
Initial Calibration	WG225143-7	03/20/18	14:54	8.575	
Initial Calibration	WG225143-6	03/20/18	15:26	8.57	
Initial Calibration	WG225143-5	03/20/18	15:58	8.57	
Initial Calibration	WG225143-4	03/20/18	16:30	8.57	
Initial Calibration	WG225143-3	03/20/18	17:01	8.57	
Initial Calibration	WG225143-2	03/20/18	17:33	8.574	
Initial Calibration	WG225143-1	03/20/18	18:05	8.587	
Independent Source	WG225143-8	03/20/18	18:37		
Method Blank Sample	WG225027-1	03/20/18	19:09	8.572	
Laboratory Control S	WG225027-2	03/20/18	19:40	8.562	
Laboratory Control S	WG225027-5	03/20/18	20:12	8.559	
Method Blank Sample	WG225094-1	03/20/18	21:47	8.593	
Laboratory Control S	WG225094-2	03/20/18	22:19	8.594	
CHAAP-20B-EB-031518	SL2133-20	03/20/18	23:23	8.589	
Continuing Calibrati	WG225143-9	03/21/18	00:26	8.567	
Continuing Calibrati	WG225143-13	03/21/18	18:38	8.541	
Method Blank Sample	WG225028-1	03/21/18	19:10	8.544	
Laboratory Control S	WG225028-2	03/21/18	19:41	8.542	
Continuing Calibrati	WG225143-14	03/22/18	00:27	8.553	
CHAAP-20B-SB01-11	SL2133-1	03/22/18	07:06	8.568	
CHAAP-20B-SB01-4	SL2133-2	03/22/18	07:38	8.566	
CHAAP-20B-SB01-8	SL2133-3	03/22/18	08:10	8.549	
CHAAP-20B-SB02-4	SL2133-4	03/22/18	08:41	8.555	
Continuing Calibrati	WG225143-15	03/22/18	09:13	8.547	
Matrix Spike	WG225028-3	03/22/18	09:45	8.564	
Matrix Spike Duplica	WG225028-4	03/22/18	10:17	8.565	
CHAAP-20B-SB02-8	SL2133-5	03/22/18	10:48	8.569	
CHAAP-20B-SB03-4	SL2133-6	03/22/18	11:20	8.579	
CHAAP-20B-SB03-8	SL2133-7	03/22/18	11:52	8.578	
CHAAP-20B-SB04-8	SL2133-9	03/22/18	12:56	8.573	
CHAAP-20B-SB05-4	SL2133-10	03/22/18	13:27	8.569	
CHAAP-20B-SB05-8	SL2133-11	03/22/18	13:59	8.55	
CHAAP-20B-SB06-4	SL2133-12	03/22/18	14:31	8.56	
Continuing Calibrati	WG225143-16	03/22/18	16:22	8.54	
CHAAP-20B-SB06-8	SL2133-13	03/22/18	16:54	8.558	
CHAAP-20B-SS01	SL2133-14	03/22/18	17:25	8.563	

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL2133
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

CHAAP-20B-SS02	SL2133-15	03/22/18	17:57	8.561	
CHAAP-20B-SS03	SL2133-16	03/22/18	18:29	8.564	
CHAAP-20B-SS04	SL2133-17	03/22/18	19:01	8.565	
CHAAP-20B-SS05	SL2133-18	03/22/18	19:33	8.567	
CHAAP-20B-SS06	SL2133-19	03/22/18	20:04	8.563	
CHAAP-20B-SS102	SL2133-21	03/22/18	20:36	8.561	
CHAAP-20B-SS104	SL2133-22	03/22/18	21:08	8.567	
Continuing Calibrati	WG225143-17	03/22/18	21:40	8.553	
Continuing Calibrati	WG225143-19	03/23/18	09:19	8.567	
CHAAP-20B-SB02-8	SL2133-5DL	03/23/18	10:09	8.552	
CHAAP-20B-SS102	SL2133-21DL	03/23/18	13:04		
Continuing Calibrati	WG225143-20	03/23/18	13:44	8.523	
Continuing Calibrati	WG225143-24	03/27/18	08:57	8.621	
Method Blank Sample	WG225426-1	03/27/18	10:03	8.6	
Laboratory Control S	WG225426-2	03/27/18	10:35	8.604	
Continuing Calibrati	WG225143-25	03/27/18	12:10	8.606	
CHAAP-20B-SB04-4	SL2133-8RE	03/27/18	13:18	8.619	
Continuing Calibrati	WG225143-26	03/27/18	18:36	8.608	

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Katahdin
ANALYTICAL SERVICES

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL2133
Project : Cornhusker Army Ammunition Plant **Column ID :** B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG210620-15	08/01/17	09:37	13.49	
Initial Calibration	WG210620-14	08/01/17	10:27	13.48	
Initial Calibration	WG210620-13	08/01/17	11:16	13.48	
Initial Calibration	WG210620-12	08/01/17	12:05	13.47	
Initial Calibration	WG210620-11	08/01/17	12:54	13.47	
Initial Calibration	WG210620-10	08/01/17	13:44	13.47	
Initial Calibration	WG210620-9	08/01/17	14:33	13.46	
Independent Source	WG210620-16	08/01/17	17:01		
Continuing Calibrati	WG225143-21	03/23/18	16:02	13.50	
Method Blank Sample	WG225027-1C	03/23/18	16:52	13.52	
CHAAP-20B-SB01-11	SL2133-1C	03/23/18	17:41	13.53	
CHAAP-20B-SB01-4	SL2133-2C	03/23/18	18:30	13.50	
CHAAP-20B-SB01-8	SL2133-3C	03/23/18	19:19	13.51	
CHAAP-20B-SB02-4	SL2133-4C	03/23/18	20:08	13.52	
Continuing Calibrati	WG225143-22	03/24/18	01:03	13.53	
Continuing Calibrati	WG225143-28	03/28/18	10:07	13.30	
Method Blank Sample	WG225028-1C	03/28/18	11:28	13.27	
CHAAP-20B-SB02-8	SL2133-5C	03/28/18	12:15	13.28	
CHAAP-20B-SB03-4	SL2133-6C	03/28/18	13:02	13.29	
CHAAP-20B-SB03-8	SL2133-7C	03/28/18	13:49	13.28	
CHAAP-20B-SB04-8	SL2133-9C	03/28/18	15:24	13.35	
CHAAP-20B-SB05-4	SL2133-10C	03/28/18	16:11	13.33	
CHAAP-20B-SB05-8	SL2133-11C	03/28/18	16:58	13.34	
CHAAP-20B-SB06-4	SL2133-12C	03/28/18	17:45	13.33	
CHAAP-20B-SB06-8	SL2133-13C	03/28/18	18:32	13.33	
Continuing Calibrati	WG225143-29	03/28/18	19:20	13.31	
CHAAP-20B-SS01	SL2133-14C	03/28/18	20:07	13.32	
CHAAP-20B-SS02	SL2133-15C	03/28/18	20:54	13.32	
CHAAP-20B-SS03	SL2133-16C	03/28/18	21:41	13.31	
CHAAP-20B-SS04	SL2133-17C	03/28/18	22:28	13.33	
CHAAP-20B-SS05	SL2133-18C	03/28/18	23:15	13.33	
CHAAP-20B-SS06	SL2133-19C	03/29/18	00:02	13.32	
CHAAP-20B-SS102	SL2133-21C	03/29/18	00:50	13.32	
CHAAP-20B-SS104	SL2133-22C	03/29/18	01:37	13.33	
Method Blank Sample	WG225426-1C	03/29/18	02:24	13.32	
CHAAP-20B-SB04-4	SL2133-8REC	03/29/18	03:11	13.33	

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ANALYTICAL SERVICES

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL2133
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Continuing Calibrati	WG225143-30	03/29/18	03:58	13.32	

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Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-1
Client ID: CHAAP-20B-SB01-11
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10099.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1000	ug/Kgdrywt	1	100	130	11.	64.
RDX		2700	ug/Kgdrywt	1	100	130	8.6	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	7.9	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	6.9	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
Nitroglycerin	U	510	ug/Kgdrywt	1	800	1000	160	510
PETN	U	510	ug/Kgdrywt	1	800	1000	140	510
1,2-Dinitrobenzene		92.6	%					

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REISSUE

Katahdin Analytical Services 2000020

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-1
Client Sample ID : CHAAP-20B-SB01-11

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 07:06

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 17:41

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	1020	
	B	6.73	1440	34.1
RDX	A	4.99	2720	
	B	10.75	2700	.7

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10099.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10099.D
Lab Smp Id: SL2133-1 Client Smp ID: CHAAP-20B-SB01-11
Inj Date : 22-MAR-2018 07:06
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-1
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 76
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

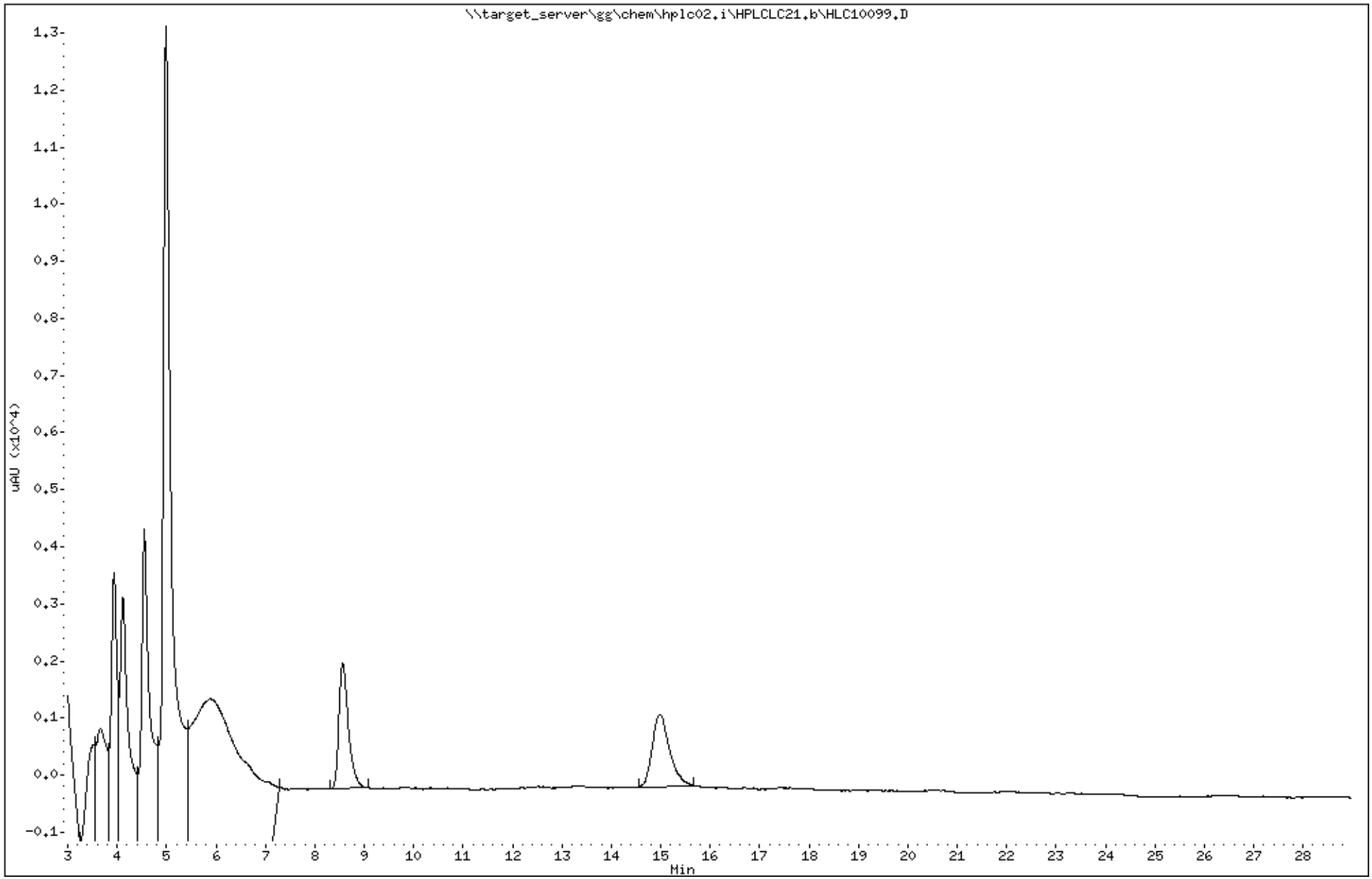
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	23.663	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10099.D
Date : 22-MAR-2018 07:06
Client ID: CHAAP-20B-SB01-11
Sample Info: SL2133-1

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000023
REISSUE

Data File: HLC10099.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10099.D
Lab Smp Id: SL2133-1 Client Smp ID: CHAAP-20B-SB01-11
Inj Date : 22-MAR-2018 07:06
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-1
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 76
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	23.663	% Moisture
Cpnd Variable		Local Compound Variable

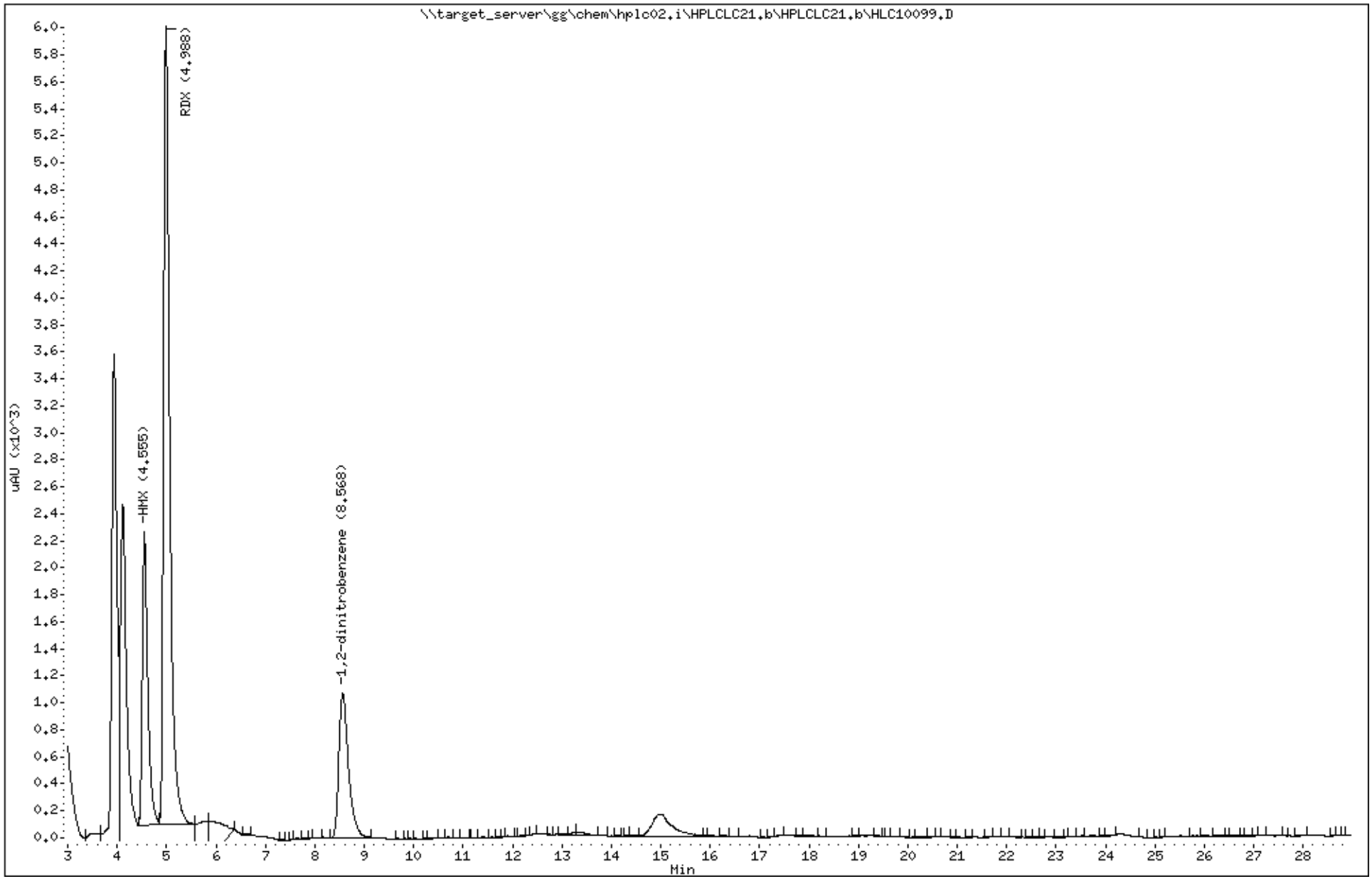
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.554	4.529	0.025	2171	0.40273	1020(M)	M2
4	RDX	4.988	4.975	0.013	5917	1.07165	2720(M)	M2
$ 2	1,2-dinitrobenzene	8.568	8.549	0.019	1072	0.23166	589	

QC Flag Legend

M - Compound response manually integrated.

10:18 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10099.D
Date : 22-MAR-2018 07:06
Client ID: CHAAP-20B-SB01-11
Instrument: hplc02.i
Sample Info: SL2133-1
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000025

REISSUE

Data File: HLC10154.D
Report Date: 30-Mar-2018 12:28

Katahdin Analytical Services

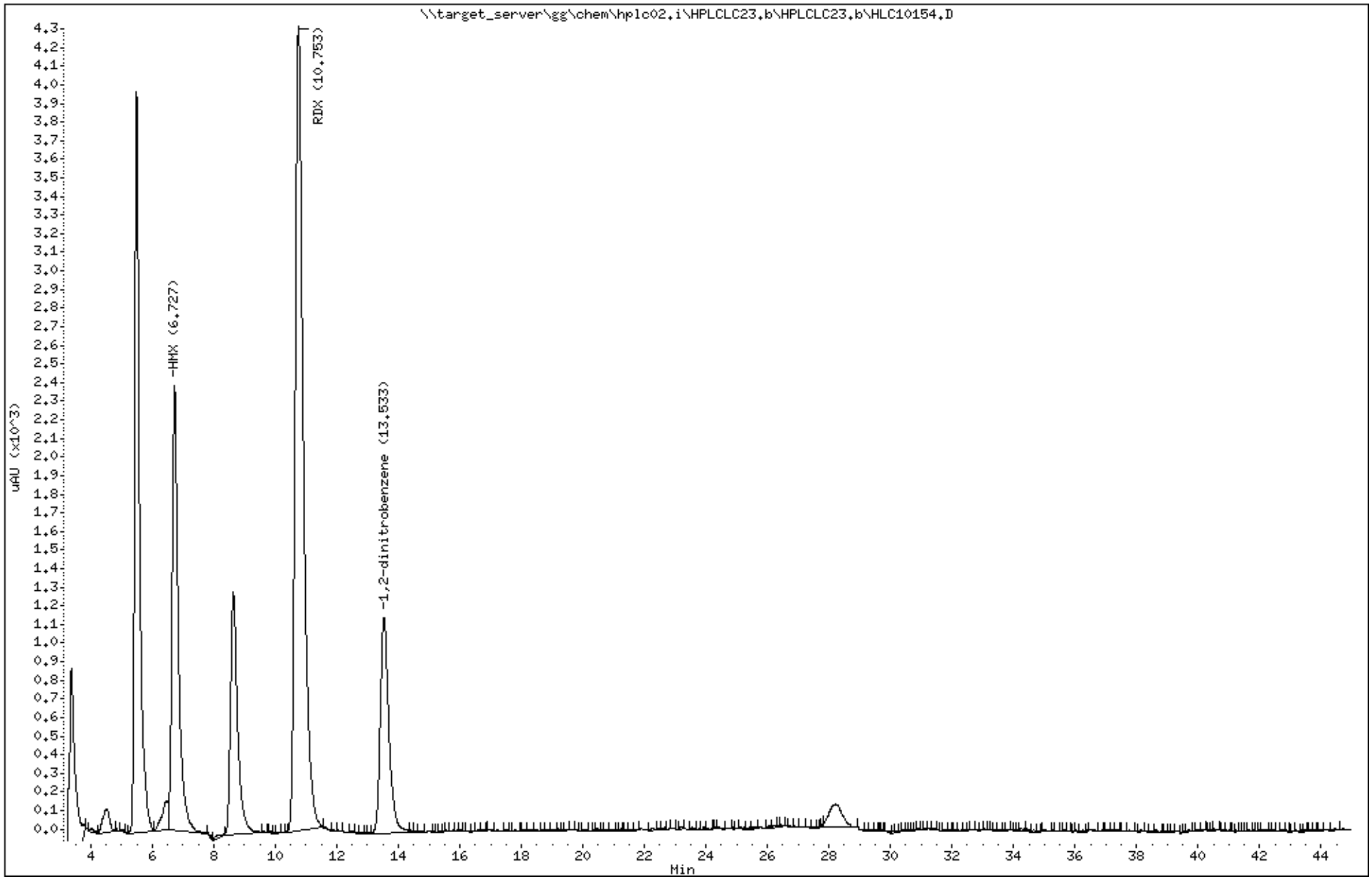
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10154.D
Lab Smp Id: SL2133-1C Client Smp ID: CHAAP-20B-SB01-11
Inj Date : 23-MAR-2018 17:41
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-1C
Misc Info : WG225143,WG225027,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 13:45 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 31
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	23.663	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.726	6.704	0.022	2392	0.56551	1440	
4	RDX	10.753	10.730	0.023	4321	1.06360	2700	
$ 2	1,2-dinitrobenzene	13.533	13.504	0.029	1160	0.21716	552	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10154.D
Date : 23-MAR-2018 17:41
Client ID: CHAAP-20B-SB01-11
Instrument: hplc02.i
Sample Info: SL2133-1C
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000027

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-2
Client ID: CHAAP-20B-SB01-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10100.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 80.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	2300	ug/Kgdrywt	1	100	120	10.	61.
RDX		2200	ug/Kgdrywt	1	100	120	8.3	61.
1,3,5-Trinitrobenzene	U	61	ug/Kgdrywt	1	100	120	8.2	61.
1,3-Dinitrobenzene	U	61	ug/Kgdrywt	1	100	120	7.6	61.
Tetryl	U	61	ug/Kgdrywt	1	100	120	6.6	61.
Nitrobenzene	U	61	ug/Kgdrywt	1	100	120	27.	61.
2,4,6-Trinitrotoluene	U	61	ug/Kgdrywt	1	100	120	8.2	61.
2-Am-DNT	U	61	ug/Kgdrywt	1	100	120	26.	61.
4-Am-DNT	U	61	ug/Kgdrywt	1	100	120	21.	61.
2,6-Dinitrotoluene	U	61	ug/Kgdrywt	1	100	120	33.	61.
2,4-Dinitrotoluene	U	61	ug/Kgdrywt	1	100	120	18.	61.
2-Nitrotoluene	U	61	ug/Kgdrywt	1	100	120	15.	61.
3-Nitrotoluene	U	61	ug/Kgdrywt	1	100	120	9.6	61.
4-Nitrotoluene	U	61	ug/Kgdrywt	1	100	120	33.	61.
Nitroglycerin	U	490	ug/Kgdrywt	1	800	980	150	490
PETN	U	490	ug/Kgdrywt	1	800	980	130	490
1,2-Dinitrobenzene		93.1	%					

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REISSUE

Katahdin Analytical Services 2000028

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-2
Client Sample ID : CHAAP-20B-SB01-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 07:38

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 18:30

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	2280	
	B	6.71	3870	51.7
RDX	A	4.99	2220	
	B	10.73	2260	1.8

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10100.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10100.D
Lab Smp Id: SL2133-2 Client Smp ID: CHAAP-20B-SB01-4
Inj Date : 22-MAR-2018 07:38
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-2
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 77
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	20.498	% Moisture
Cpnd Variable		Local Compound Variable

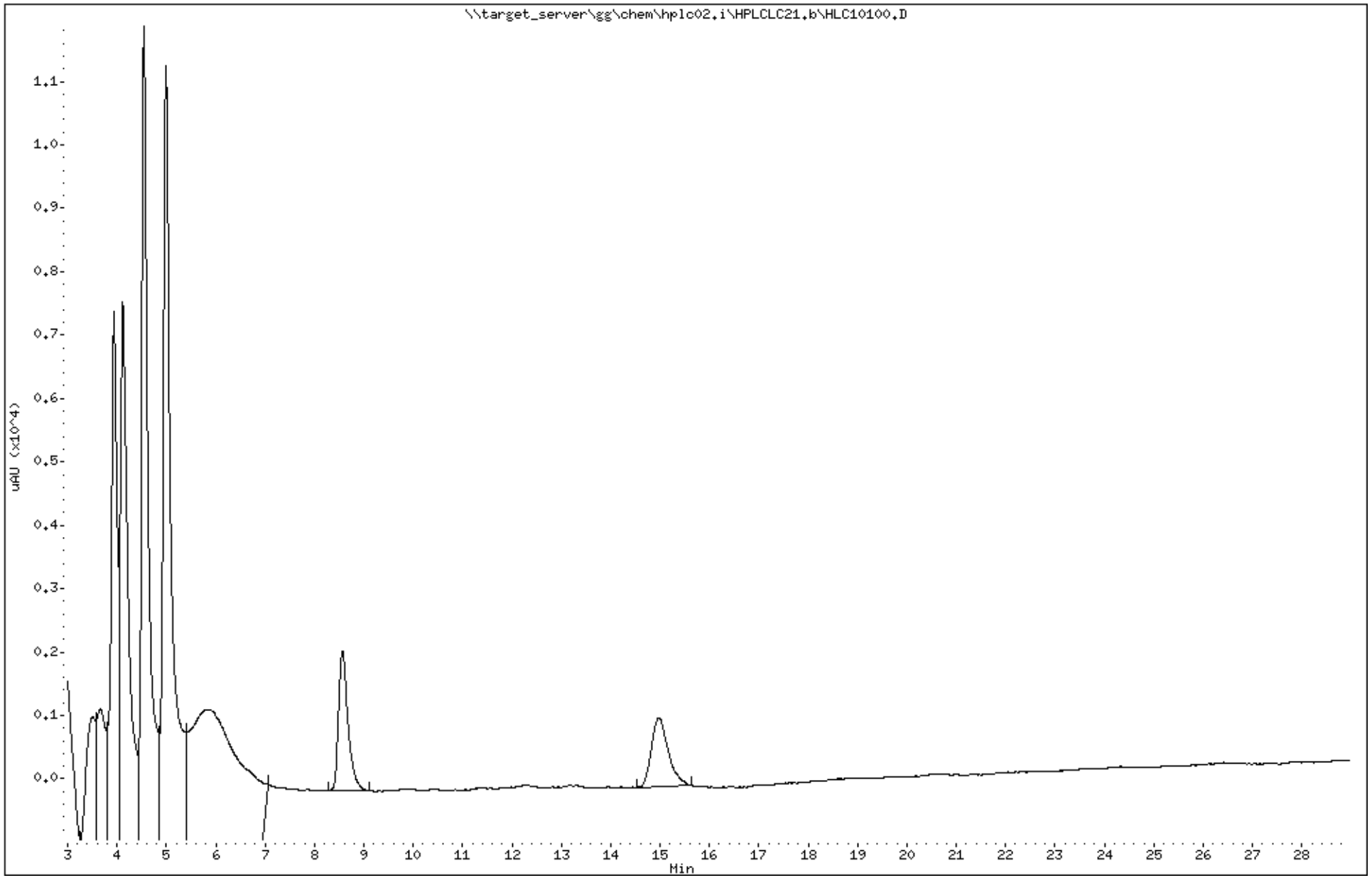
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10100.D
Date : 22-MAR-2018 07:38
Client ID: CHAAP-20B-SB01-4
Sample Info: SL2133-2

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000031

REISSUE

Data File: HLC10100.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10100.D
Lab Smp Id: SL2133-2 Client Smp ID: CHAAP-20B-SB01-4
Inj Date : 22-MAR-2018 07:38
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-2
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 77
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	20.498	% Moisture
Cpnd Variable		Local Compound Variable

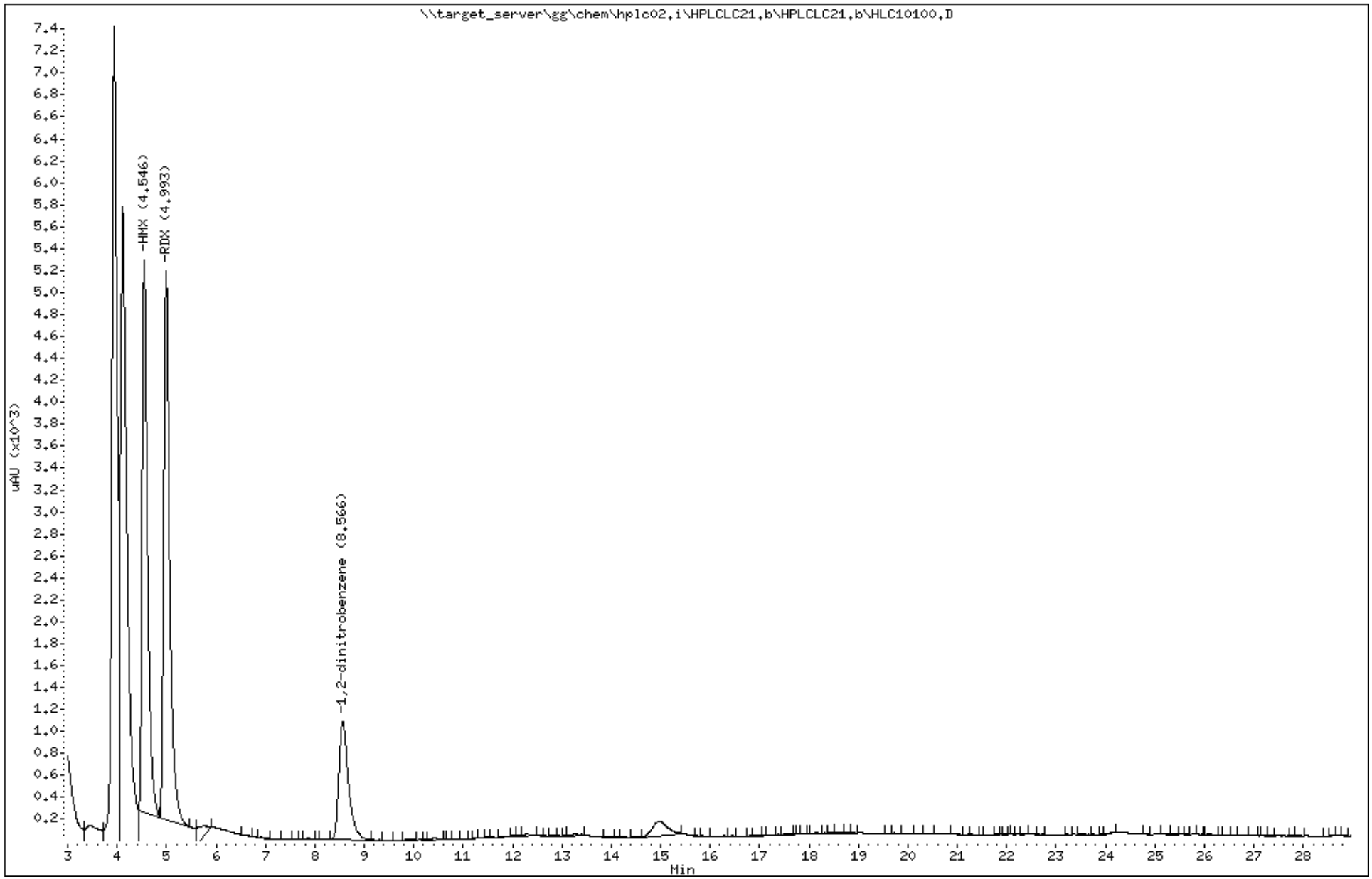
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.546	4.529	0.017	5041	0.93514	2280(M)	M2
4	RDX	4.992	4.975	0.017	5006	0.90756	2220(M)	M2
$ 2	1,2-dinitrobenzene	8.566	8.549	0.017	1077	0.23274	568	

QC Flag Legend

M - Compound response manually integrated.

10:19 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10100.D
Date : 22-MAR-2018 07:38
Client ID: CHAAP-20B-SB01-4
Instrument: hplc02.i
Sample Info: SL2133-2
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000033

REISSUE

Data File: HLC10155.D
Report Date: 30-Mar-2018 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10155.D
Lab Smp Id: SL2133-2C Client Smp ID: CHAAP-20B-SB01-4
Inj Date : 23-MAR-2018 18:30
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-2C
Misc Info : WG225143,WG225027,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 13:45 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 32
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	20.498	% Moisture
Cpnd Variable		Local Compound Variable

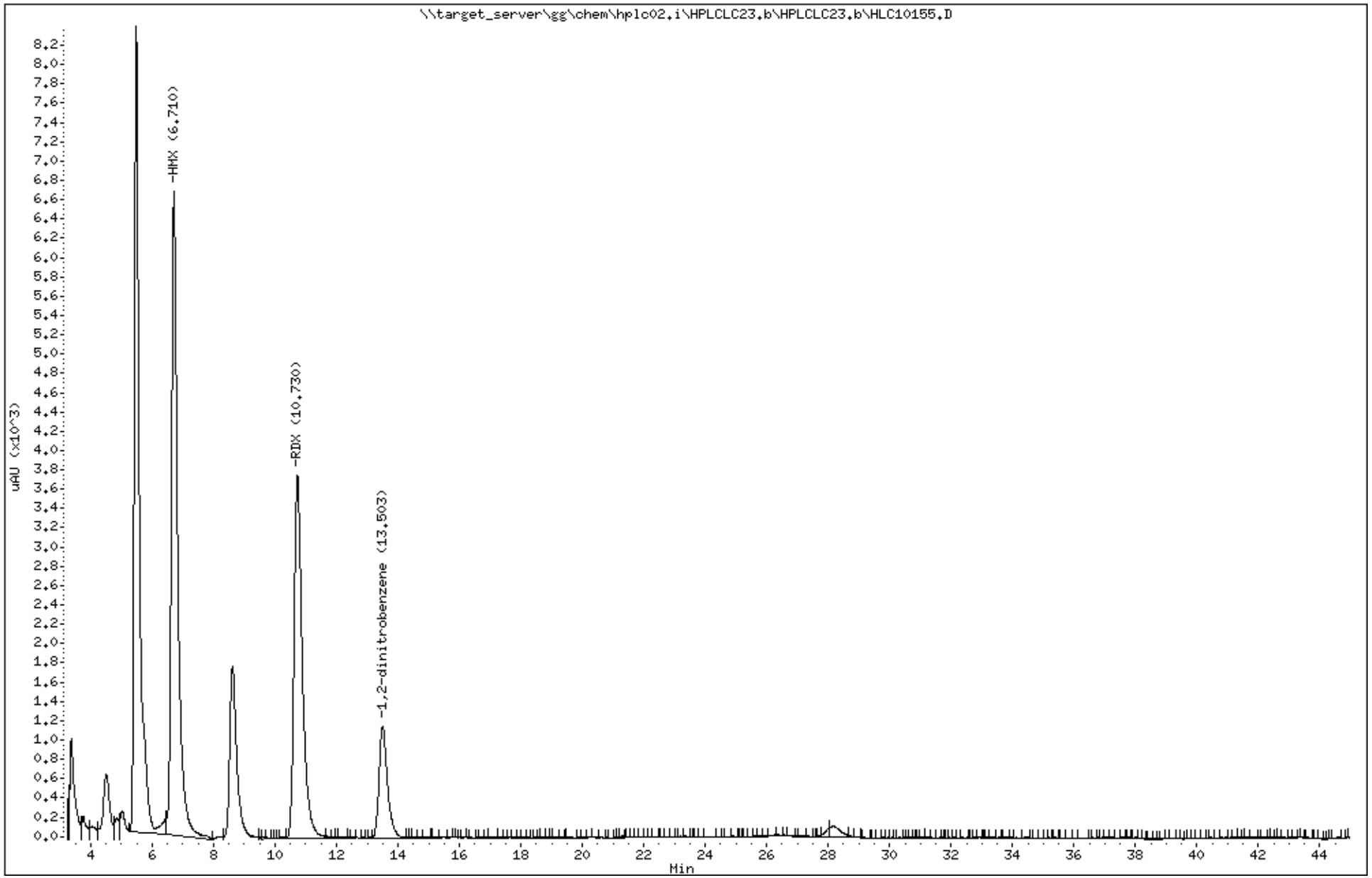
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.709	6.704	0.005	6673	1.58490	3870(M)	M3
4	RDX	10.729	10.730	-0.001	3759	0.92555	2260	
$ 2	1,2-dinitrobenzene	13.503	13.504	-0.001	1157	0.21660	529	

QC Flag Legend

M - Compound response manually integrated.

10:19 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10155.D
Date : 23-MAR-2018 18:30
Client ID: CHAAP-20B-SB01-4
Instrument: hplc02.i
Sample Info: SL2133-2C
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000035

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-3
Client ID: CHAAP-20B-SB01-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10101.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 02-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	1800	ug/Kgdrywt	1	100	120	10.	59.
RDX		3100	ug/Kgdrywt	1	100	120	8.0	59.
1,3,5-Trinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
1,3-Dinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.3	59.
Tetryl	U	59	ug/Kgdrywt	1	100	120	6.4	59.
Nitrobenzene	U	59	ug/Kgdrywt	1	100	120	26.	59.
2,4,6-Trinitrotoluene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
2-Am-DNT	U	59	ug/Kgdrywt	1	100	120	25.	59.
4-Am-DNT	U	59	ug/Kgdrywt	1	100	120	20.	59.
2,6-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
2,4-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	18.	59.
2-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	14.	59.
3-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	9.3	59.
4-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	140	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		91.3	%					

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REISSUE

Katahdin Analytical Services 2000036

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-3
Client Sample ID : CHAAP-20B-SB01-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 08:10

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 19:19

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1840	
	B	6.71	2860	43.4
RDX	A	4.98	3120	
	B	10.73	3140	.6

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10101.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10101.D
Lab Smp Id: SL2133-3 Client Smp ID: CHAAP-20B-SB01-8
Inj Date : 22-MAR-2018 08:10
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-3
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 78
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

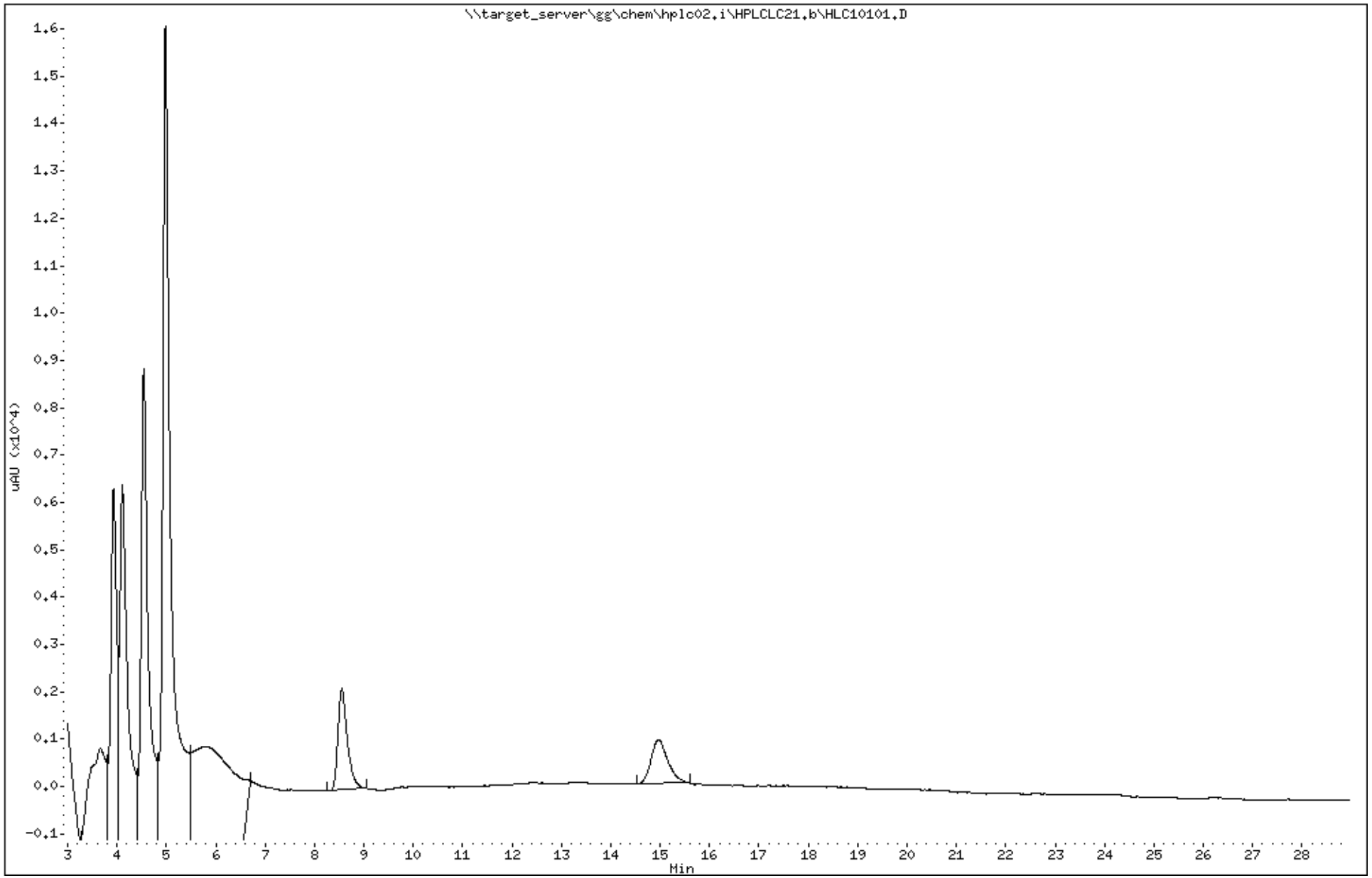
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01090	Weight of Sample (Kg)
M	22.016	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10101.D
Date : 22-MAR-2018 08:10
Client ID: CHAAP-20B-SB01-8
Sample Info: SL2133-3

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000039
REISSUE

Data File: HLC10101.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10101.D
Lab Smp Id: SL2133-3 Client Smp ID: CHAAP-20B-SB01-8
Inj Date : 22-MAR-2018 08:10
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-3
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 78
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01090	Weight of Sample (Kg)
M	22.016	% Moisture
Cpnd Variable		Local Compound Variable

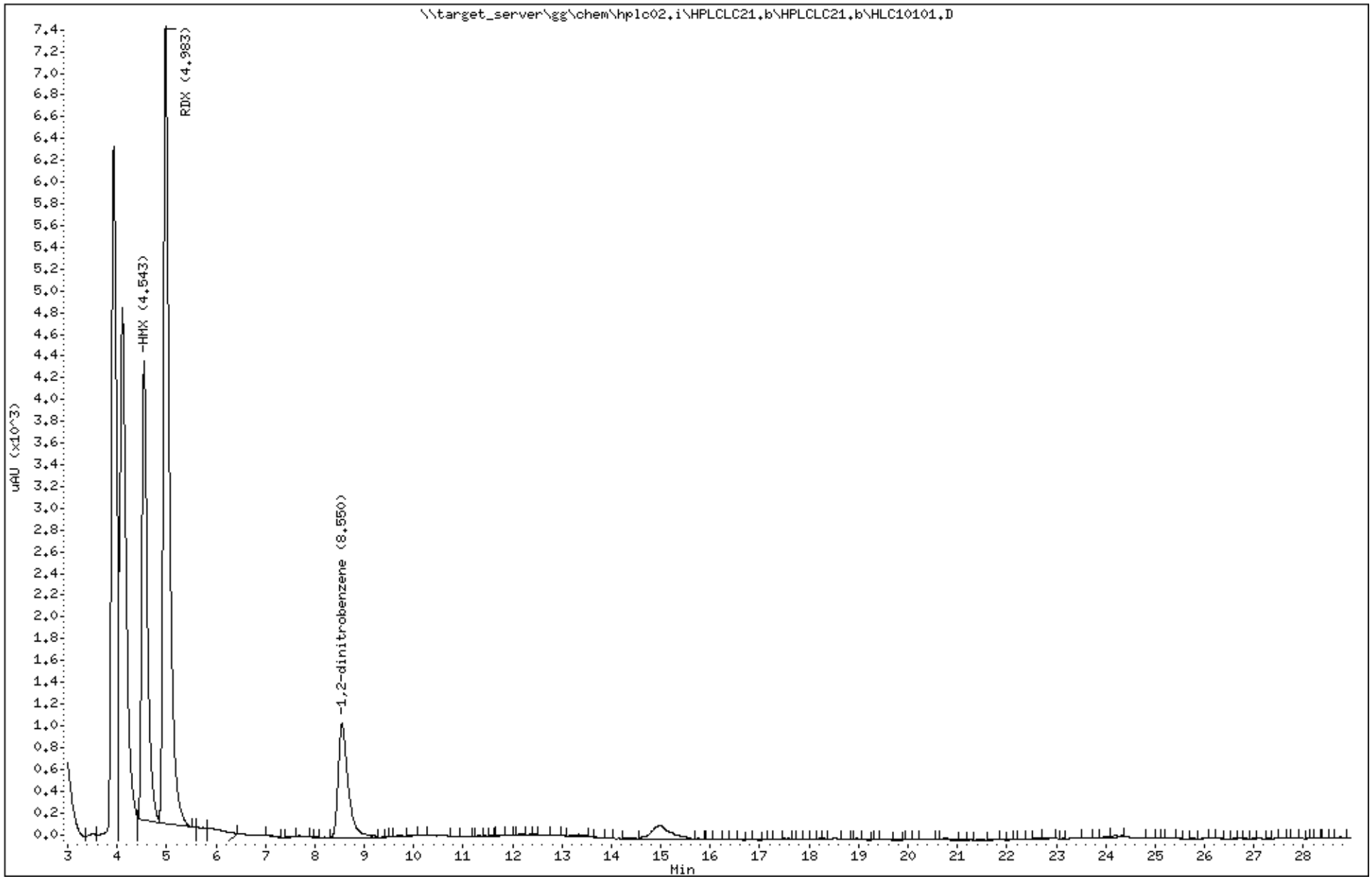
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.543	4.529	0.014	4225	0.78377	1840(M)	M2
4	RDX	4.983	4.975	0.008	7331	1.32634	3120(M)	M2
$ 2	1,2-dinitrobenzene	8.549	8.549	0.000	1057	0.22842	537	

QC Flag Legend

M - Compound response manually integrated.

AAB
10:20 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10101.D
Date : 22-MAR-2018 08:10
Client ID: CHAAP-20B-SB01-8
Instrument: hplc02.i
Sample Info: SL2133-3
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000041

REISSUE

Data File: HLC10156.D
Report Date: 30-Mar-2018 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10156.D
Lab Smp Id: SL2133-3C Client Smp ID: CHAAP-20B-SB01-8
Inj Date : 23-MAR-2018 19:19
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-3C
Misc Info : WG225143,WG225027,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 13:45 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01090	Weight of Sample (Kg)
M	22.016	% Moisture
Cpnd Variable		Local Compound Variable

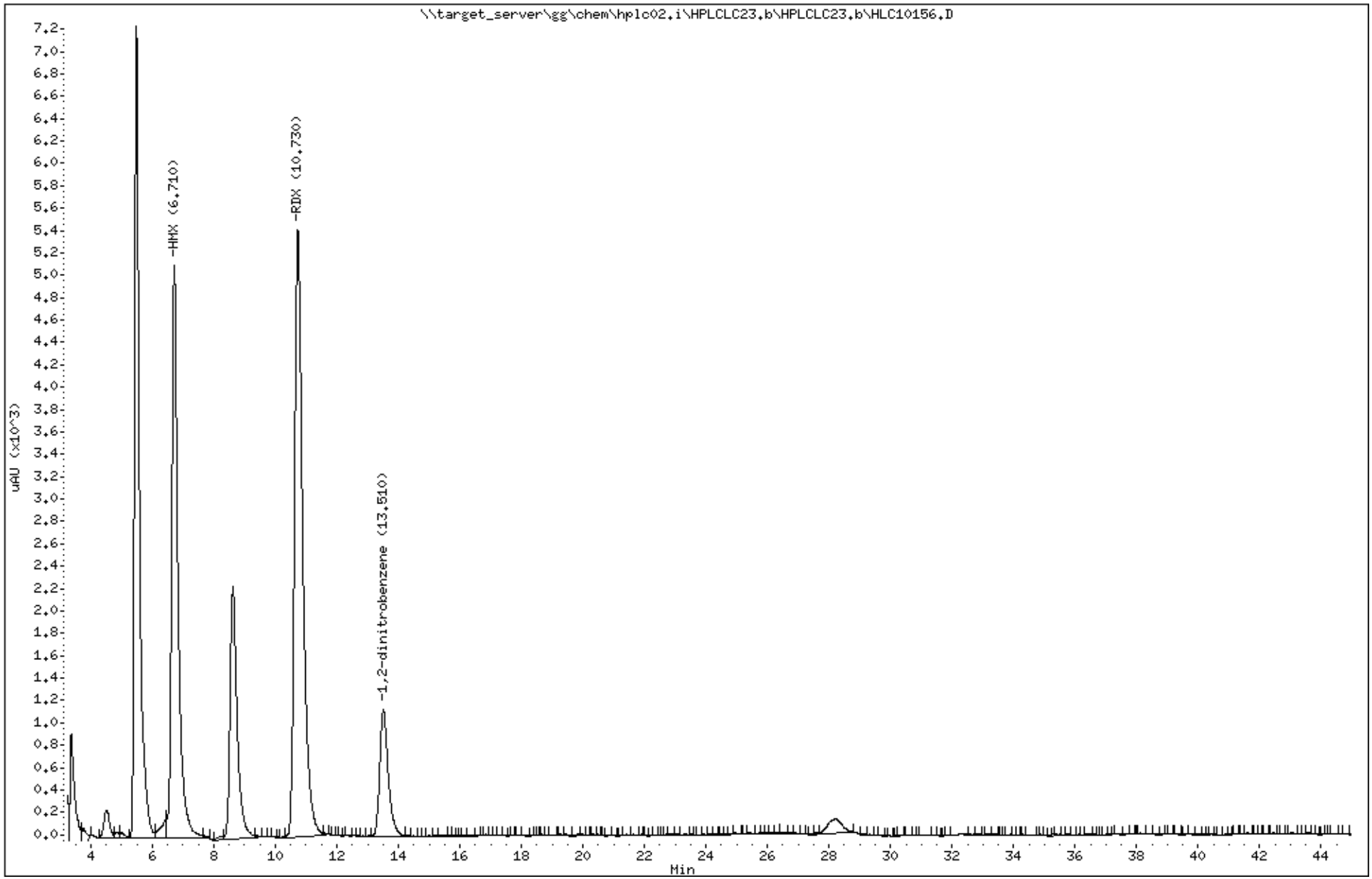
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.710	6.704	0.006	5114	1.21367	2860(M)	M3
4	RDX	10.730	10.730	0.000	5419	1.33332	3140	
$ 2	1,2-dinitrobenzene	13.510	13.504	0.006	1136	0.21262	500	

10:20 am, Apr 02, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10156.D
Date : 23-MAR-2018 19:19
Client ID: CHAAP-20B-SB01-8
Instrument: hplc02.i
Sample Info: SL2133-3C
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000043

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-4
Client ID: CHAAP-20B-SB02-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10102.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 81.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		950	ug/Kgdrywt	1	100	120	10.	60.
RDX		3500	ug/Kgdrywt	1	100	120	8.2	60.
1,3,5-Trinitrobenzene	U	60	ug/Kgdrywt	1	100	120	8.0	60.
1,3-Dinitrobenzene	U	60	ug/Kgdrywt	1	100	120	7.4	60.
Tetryl	U	60	ug/Kgdrywt	1	100	120	6.5	60.
Nitrobenzene	U	60	ug/Kgdrywt	1	100	120	26.	60.
2,4,6-Trinitrotoluene	U	60	ug/Kgdrywt	1	100	120	8.0	60.
2-Am-DNT	U	60	ug/Kgdrywt	1	100	120	25.	60.
4-Am-DNT	U	60	ug/Kgdrywt	1	100	120	20.	60.
2,6-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
2,4-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	18.	60.
2-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	14.	60.
3-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	9.5	60.
4-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
Nitroglycerin	U	480	ug/Kgdrywt	1	800	960	150	480
PETN	U	480	ug/Kgdrywt	1	800	960	130	480
1,2-Dinitrobenzene		93.5	%					

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REISSUE

Katahdin Analytical Services 2000044

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-4
Client Sample ID : CHAAP-20B-SB02-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 08:41

Column B
Instrument ID : HPLC02
Date Analyzed : 03/23/18
Time Analyzed : 20:08

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	951	
	B	6.7	725	27
RDX	A	4.98	3480	
	B	10.73	3440	1.2

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10102.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

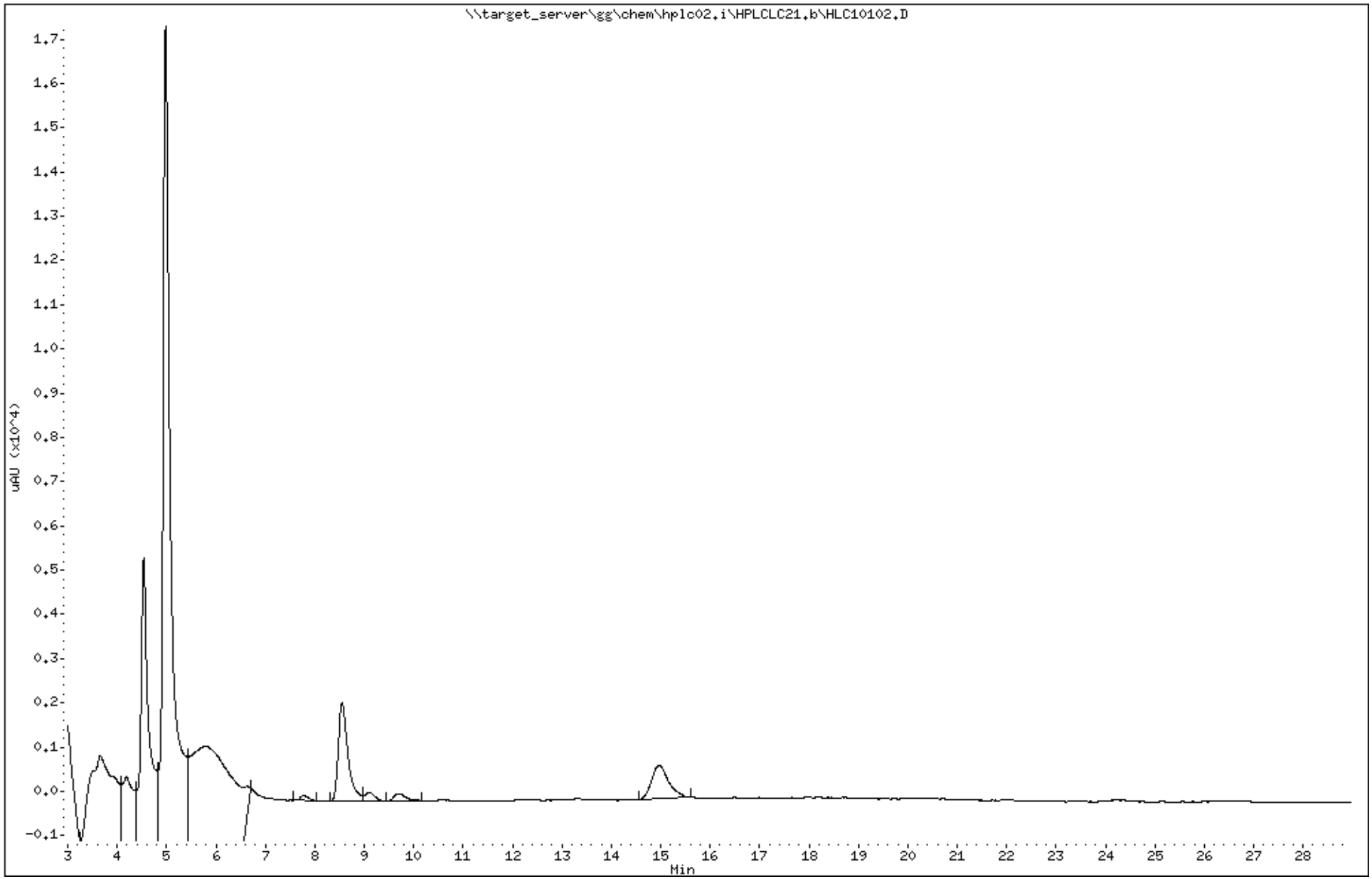
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10102.D
Lab Smp Id: SL2133-4 Client Smp ID: CHAAP-20B-SB02-4
Inj Date : 22-MAR-2018 08:41
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-4
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 79
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	19.291	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10102.D
Date : 22-MAR-2018 08:41
Client ID: CHAAP-20B-SB02-4
Instrument: hplc02.i
Sample Info: SL2133-4
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000047
REISSUE

Data File: HLC10102.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10102.D
Lab Smp Id: SL2133-4 Client Smp ID: CHAAP-20B-SB02-4
Inj Date : 22-MAR-2018 08:41
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-4
Misc Info : WG225143,WG225027,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 79
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	19.291	% Moisture
Cpnd Variable		Local Compound Variable

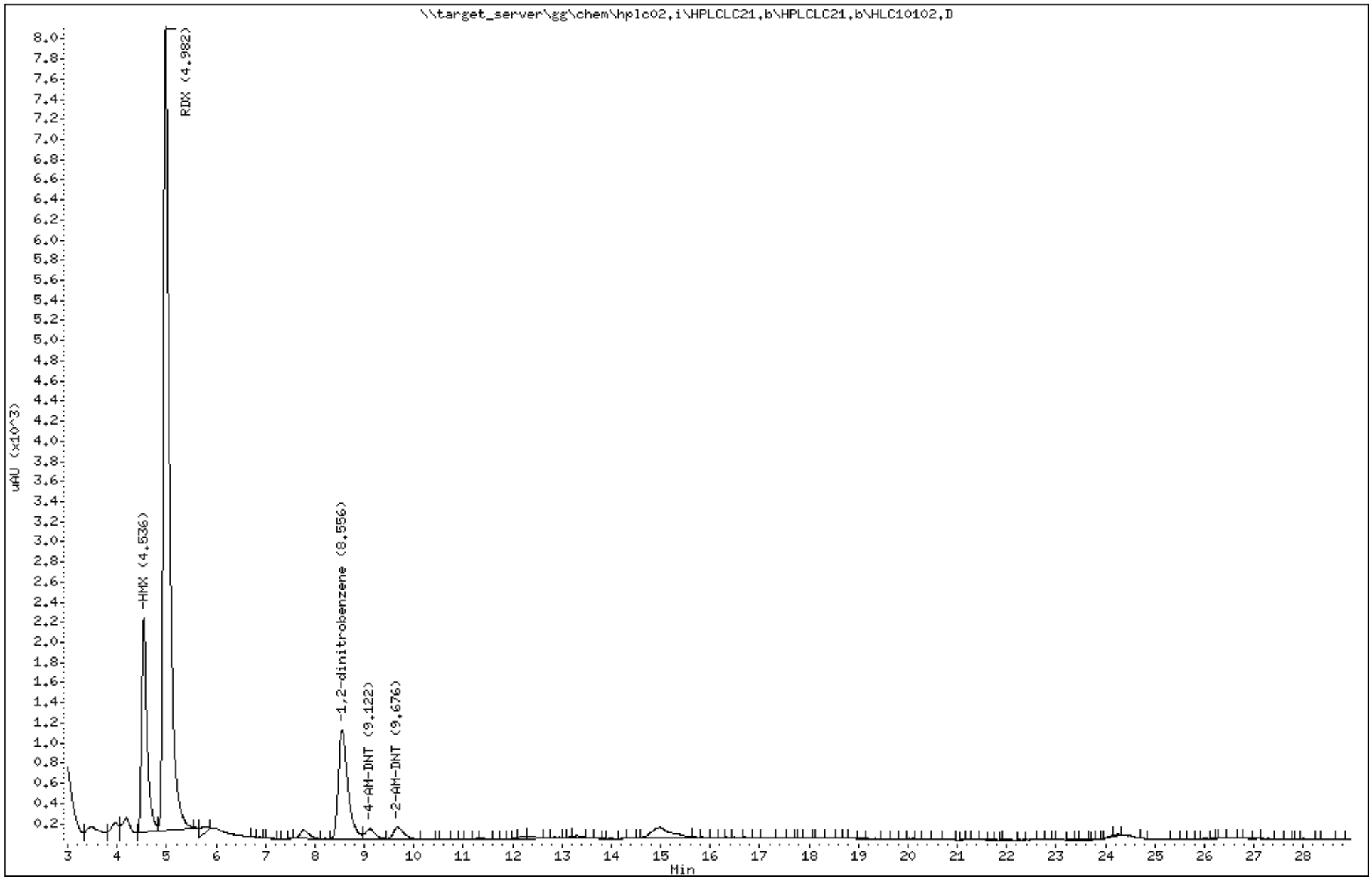
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.535	4.529	0.006	2131	0.39531	951(M)	M2
4	RDX	4.982	4.975	0.007	7995	1.44595	3480(M)	M2
$ 2	1,2-dinitrobenzene	8.555	8.549	0.006	1082	0.23382	562	
~~11~~	~~4-AM-DNT~~	~~9.122~~	~~9.115~~	~~0.007~~	~~101~~	~~0.02347~~	~~56.5(a)~~	NC
~~12~~	~~2-AM-DNT~~	~~9.675~~	~~9.675~~	~~0.000~~	~~120~~	~~0.02083~~	~~50.1(a)~~	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

10:21 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10102.D
Date : 22-MAR-2018 08:41
Client ID: CHAAP-20B-SB02-4
Instrument: hplc02.i
Sample Info: SL2133-4
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000049

REISSUE

Data File: HLC10157.D
Report Date: 30-Mar-2018 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10157.D
Lab Smp Id: SL2133-4C Client Smp ID: CHAAP-20B-SB02-4
Inj Date : 23-MAR-2018 20:08
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-4C
Misc Info : WG225143,WG225027,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 13:45 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 34
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01030	Weight of Sample (Kg)
M	19.291	% Moisture
Cpnd Variable		Local Compound Variable

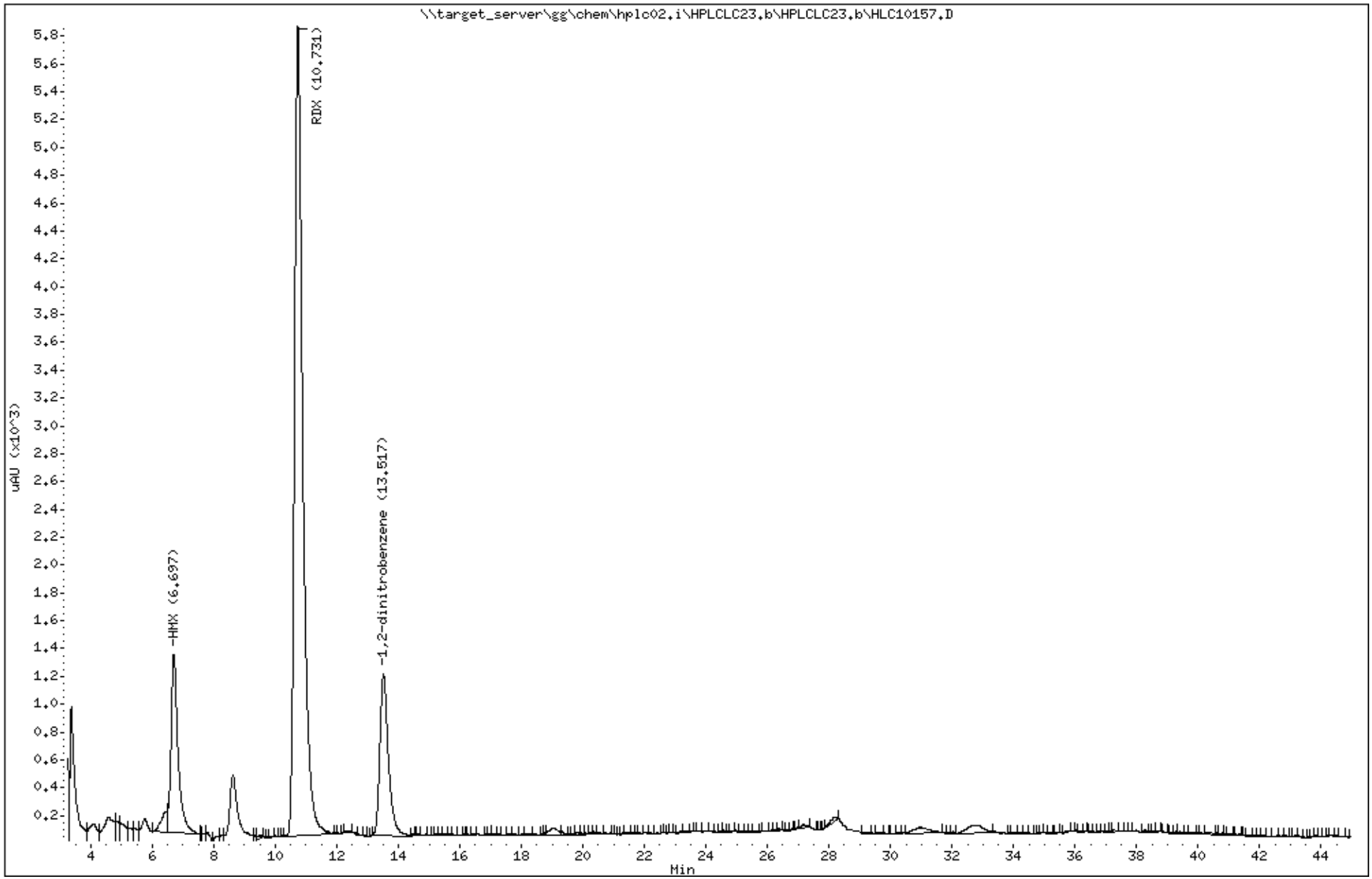
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.697	6.704	-0.007	1283	0.30144	725(M)	M3
4	RDX	10.730	10.730	0.000	5818	1.43134	3440	
$ 2	1,2-dinitrobenzene	13.517	13.504	0.013	1166	0.21830	525	

10:21 am, Apr 02, 2018

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10157.D
Date : 23-MAR-2018 20:08
Client ID: CHAAP-20B-SB02-4
Instrument: hplc02.i
Sample Info: SL2133-4C
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000051

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-5
Client ID: CHAAP-20B-SB02-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10106.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 74.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		3200	ug/Kgdrywt	1	100	130	11.	64.
RDX	E	7600	ug/Kgdrywt	1	100	130	8.8	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.0	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	7.0	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		96.3	%					

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REISSUE

Katahdin Analytical Services 2000052

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-5
Client Sample ID : CHAAP-20B-SB02-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 10:48

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 12:15

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	3220	
	B	6.63	3110	3.5
RDX	A	4.99	7590	
	B	10.57	7850	3.4

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10106.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

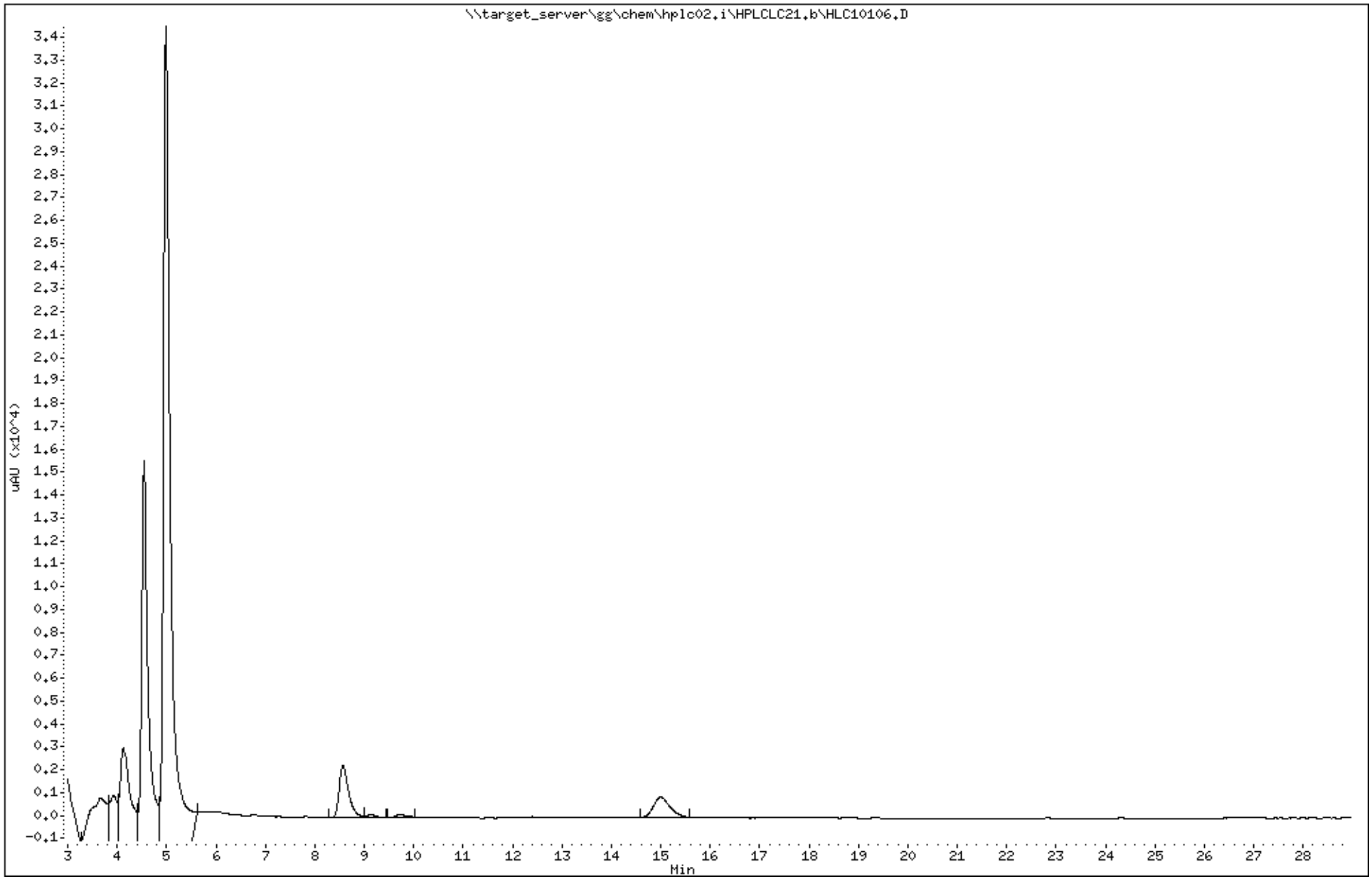
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10106.D
Lab Smp Id: SL2133-5 Client Smp ID: CHAAP-20B-SB02-8
Inj Date : 22-MAR-2018 10:48
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-5
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 83
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	25.421	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10106.D
Date : 22-MAR-2018 10:48
Client ID: CHAAP-20B-SB02-8
Instrument: hplc02.i
Sample Info: SL2133-5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000055

REISSUE

Data File: HLC10106.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10106.D
Lab Smp Id: SL2133-5 Client Smp ID: CHAAP-20B-SB02-8
Inj Date : 22-MAR-2018 10:48
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-5
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 83
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	25.421	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.549	4.529	0.020	6734	1.24920	3220(M)	M2
4	RDX	4.989	4.975	0.014	16302	2.94222	7590(AM)	M2
$ 2	1,2-dinitrobenzene	8.569	8.549	0.020	1115	0.24095	621	
~~11~~	~~4-AM-DNT~~	~~9.155~~	~~9.115~~	~~0.040~~	~~71~~	~~0.01650~~	~~42.5(a)~~	NC
~~12~~	~~2-AM-DNT~~	~~9.715~~	~~9.675~~	~~0.040~~	~~101~~	~~0.01753~~	~~45.2(a)~~	

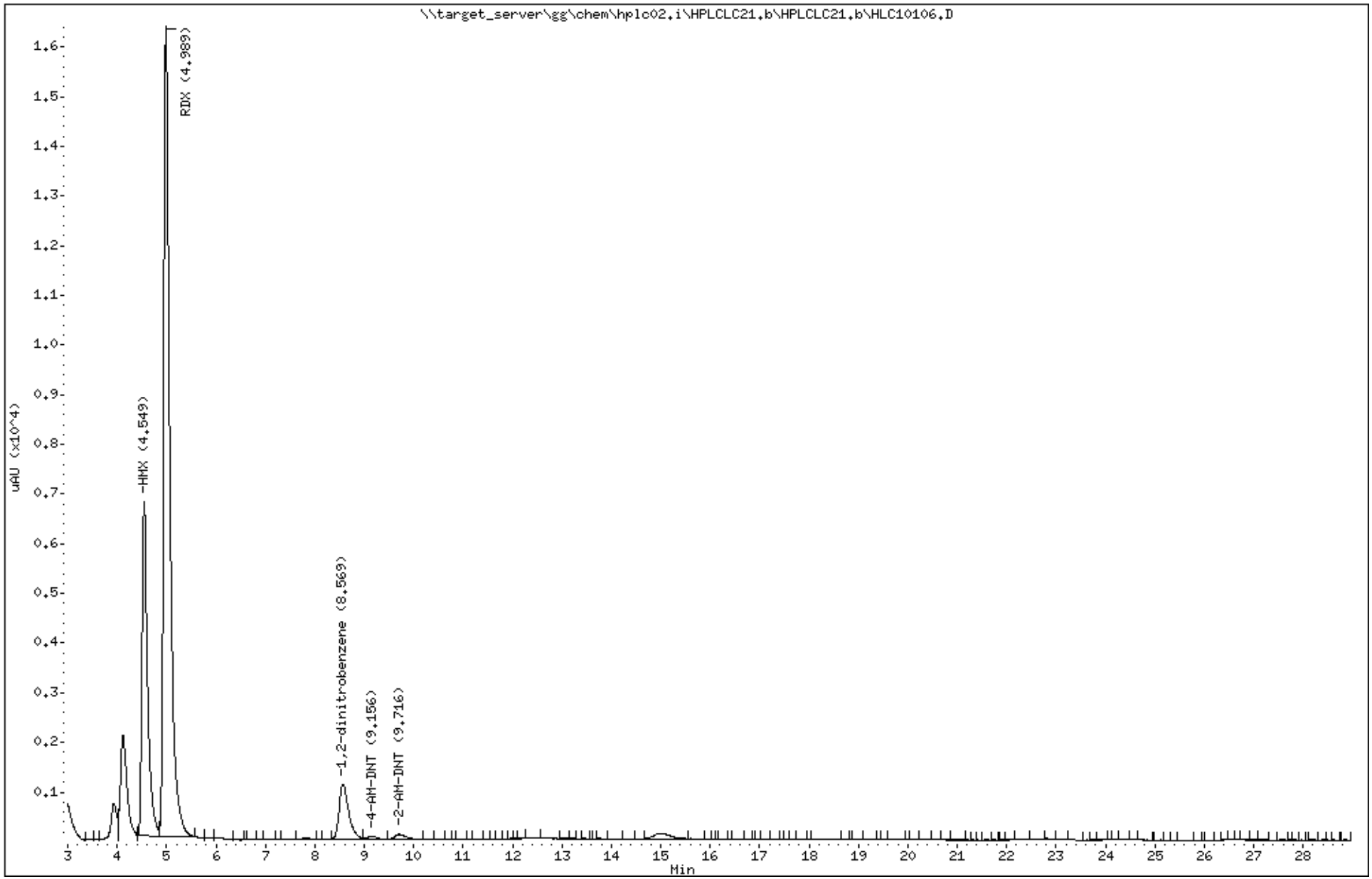
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.



10:22 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10106.D
Date : 22-MAR-2018 10:48
Client ID: CHAAP-20B-SB02-8
Instrument: hplc02.i
Sample Info: SL2133-5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000057

REISSUE

Data File: HLC10202.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10202.D
Lab Smp Id: SL2133-5C Client Smp ID: CHAAP-20B-SB02-8
Inj Date : 28-MAR-2018 12:15
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-5C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 28
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	25.421	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.632	6.639	-0.007	5087	1.20724	3110	
4	RDX	10.572	10.606	-0.034	12386	3.04476	7850(A)	
$ 2	1,2-dinitrobenzene	13.279	13.299	-0.020	1263	0.23665	610	

QC Flag Legend

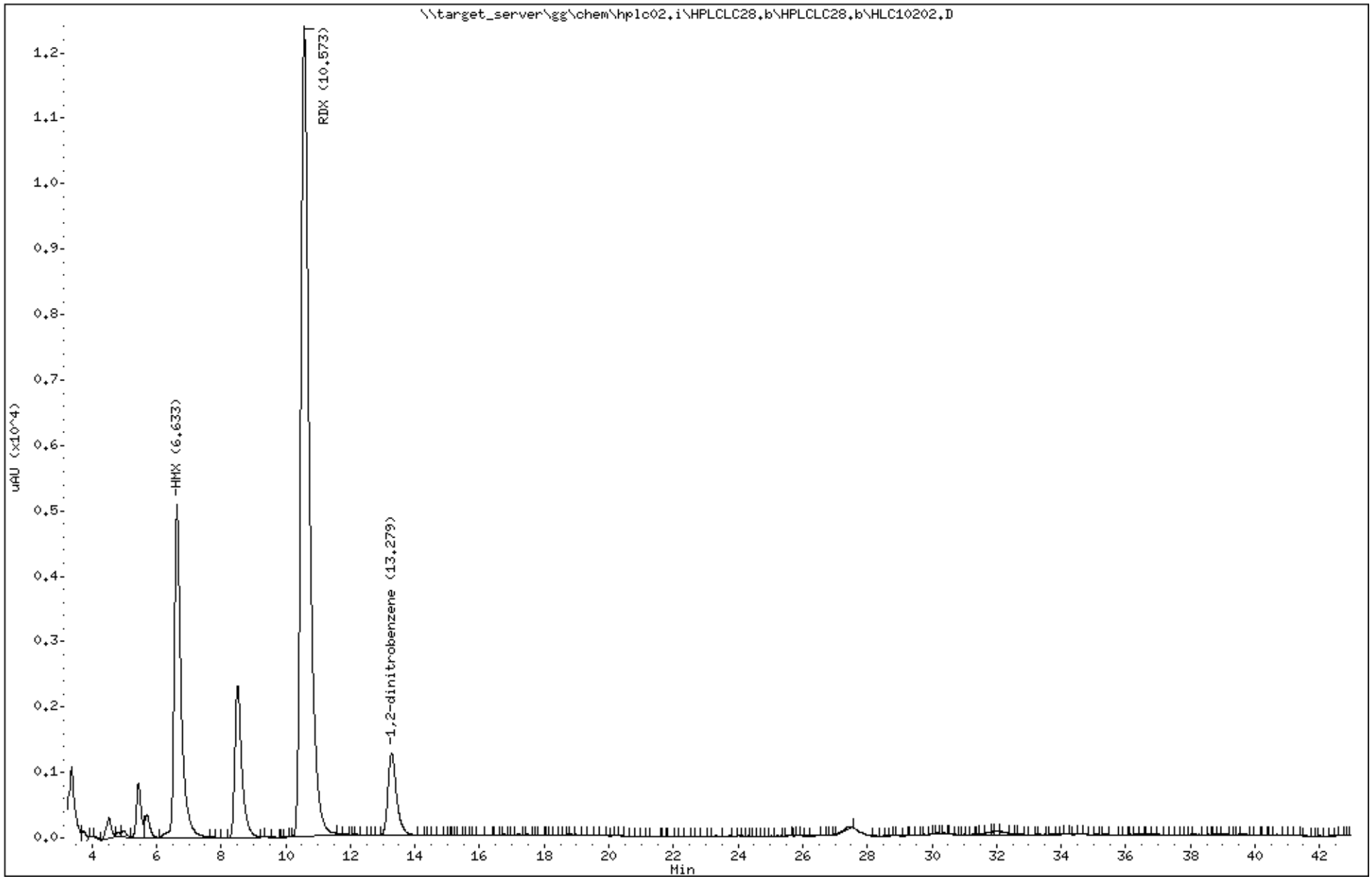
A - Target compound detected but, quantitated amount
exceeded maximum amount.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10202.D
Date : 28-MAR-2018 12:15
Client ID: CHAAP-20B-SB02-8
Sample Info: SL2133-5C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000059

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-5DL
Client ID: CHAAP-20B-SB02-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10147.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 23-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 74.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		3100	ug/Kgdrywt	2	100	260	22.	130
RDX		7200	ug/Kgdrywt	2	100	260	18.	130
1,3,5-Trinitrobenzene	U	130	ug/Kgdrywt	2	100	260	17.	130
1,3-Dinitrobenzene	U	130	ug/Kgdrywt	2	100	260	16.	130
Tetryl	U	130	ug/Kgdrywt	2	100	260	14.	130
Nitrobenzene	U	130	ug/Kgdrywt	2	100	260	57.	130
2,4,6-Trinitrotoluene	U	130	ug/Kgdrywt	2	100	260	17.	130
2-Am-DNT	U	130	ug/Kgdrywt	2	100	260	54.	130
4-Am-DNT	U	130	ug/Kgdrywt	2	100	260	44.	130
2,6-Dinitrotoluene	U	130	ug/Kgdrywt	2	100	260	70.	130
2,4-Dinitrotoluene	U	130	ug/Kgdrywt	2	100	260	39.	130
2-Nitrotoluene	U	130	ug/Kgdrywt	2	100	260	31.	130
3-Nitrotoluene	U	130	ug/Kgdrywt	2	100	260	20.	130
4-Nitrotoluene	U	130	ug/Kgdrywt	2	100	260	70.	130
Nitroglycerin	U	1000	ug/Kgdrywt	2	800	2100	320	1000
PETN	U	1000	ug/Kgdrywt	2	800	2100	280	1000
1,2-Dinitrobenzene		90.7	%					

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REISSUE

Katahdin Analytical Services 2000060

Data File: HLC10147.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10147.D
Lab Smp Id: SL2133-5DL Client Smp ID: CHAAP-20B-SB02-8
Inj Date : 23-MAR-2018 10:09
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-5DL
Misc Info : WG225143,WG225028,WG225143-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 24
Dil Factor: 2.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	2.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	25.421	% Moisture
Cpnd Variable		Local Compound Variable

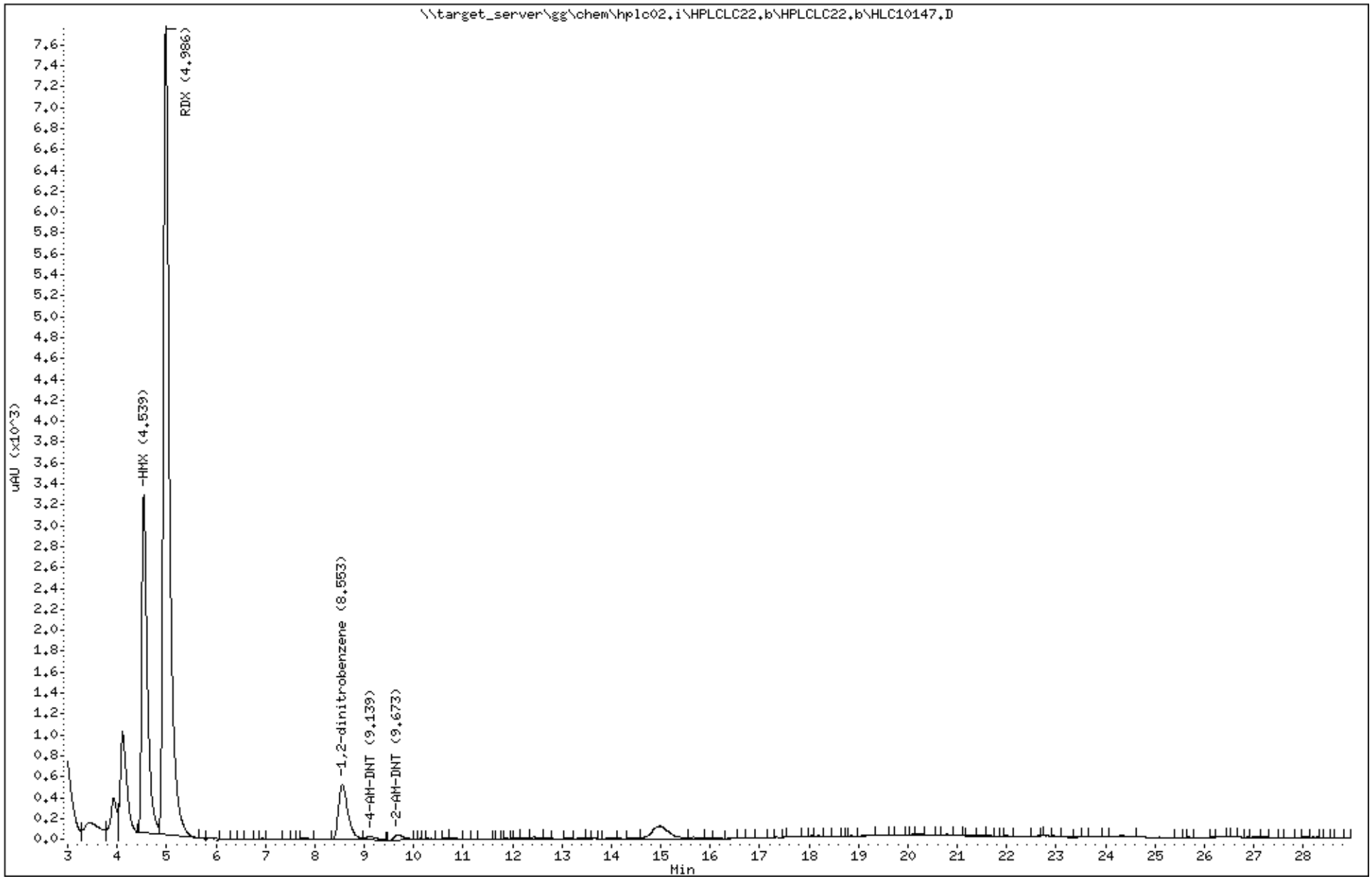
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.539	4.526	0.013	3229	0.59900	3090(M)	M2
4	RDX	4.986	4.973	0.013	7735	1.39911	7220(M)	M2
$ 2	1,2-dinitrobenzene	8.552	8.540	0.012	525	0.11345	585	
11	4-AM-DNT	9.139	9.106	0.033	34	0.00790	40.8(a)	
12	2-AM-DNT	9.672	9.660	0.012	49	0.00851	43.9(a)	

10:22 am, Apr 02, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10147.D
Date : 23-MAR-2018 10:09
Client ID: CHAAP-20B-SB02-8
Instrument: hplc02.i
Sample Info: SL2133-5DL
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000062

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-6
Client ID: CHAAP-20B-SB03-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10107.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1200	ug/Kgdrywt	1	100	130	11.	65.
RDX		240	ug/Kgdrywt	1	100	130	8.8	65.
1,3,5-Trinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
1,3-Dinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.0	65.
Tetryl	U	65	ug/Kgdrywt	1	100	130	7.0	65.
Nitrobenzene	U	65	ug/Kgdrywt	1	100	130	28.	65.
2,4,6-Trinitrotoluene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
2-Am-DNT	U	65	ug/Kgdrywt	1	100	130	27.	65.
4-Am-DNT	U	65	ug/Kgdrywt	1	100	130	22.	65.
2,6-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
2,4-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	19.	65.
2-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	16.	65.
3-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	10.	65.
4-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		91.2	%					

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REISSUE

Katahdin Analytical Services 2000063

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-6
Client Sample ID : CHAAP-20B-SB03-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 11:20

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 13:02

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1220	
	B	6.63	1190	2.5
RDX	A	4.99	242	
	B	10.61	247	2

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10107.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

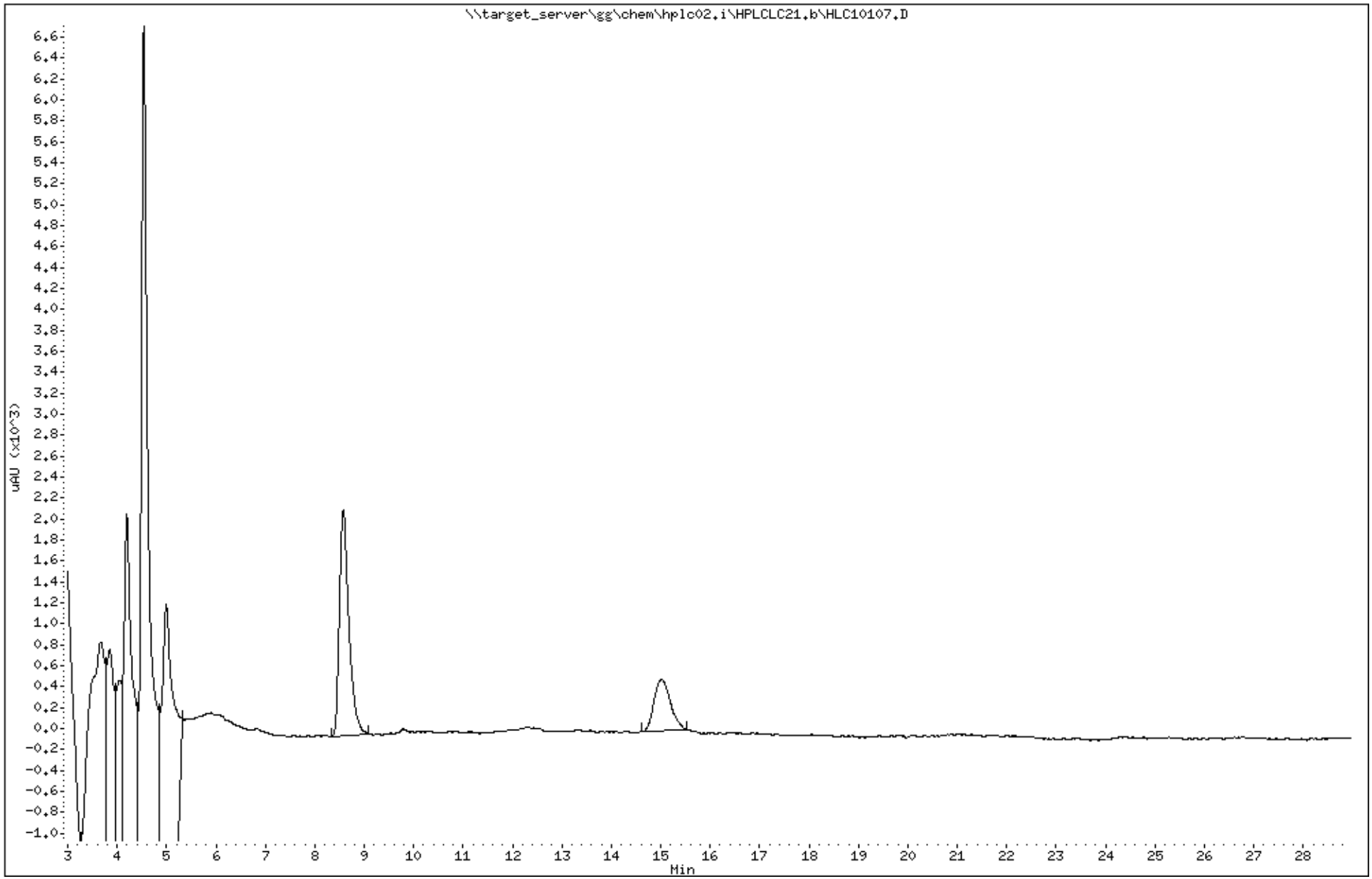
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10107.D
Lab Smp Id: SL2133-6 Client Smp ID: CHAAP-20B-SB03-4
Inj Date : 22-MAR-2018 11:20
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-6
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 84
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	23.018	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10107.D
Date : 22-MAR-2018 11:20
Client ID: CHAAP-20B-SB03-4
Instrument: hplc02.i
Sample Info: SL2133-6
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000066

REISSUE

Data File: HLC10107.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10107.D
Lab Smp Id: SL2133-6 Client Smp ID: CHAAP-20B-SB03-4
Inj Date : 22-MAR-2018 11:20
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-6
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 84
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	23.018	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.539	4.529	0.010	2540	0.47119	1220	
4	RDX	4.992	4.975	0.017	485	0.09323	242(a)	
$ 2	1,2-dinitrobenzene	8.579	8.549	0.030	1057	0.22842	593	

QC Flag Legend

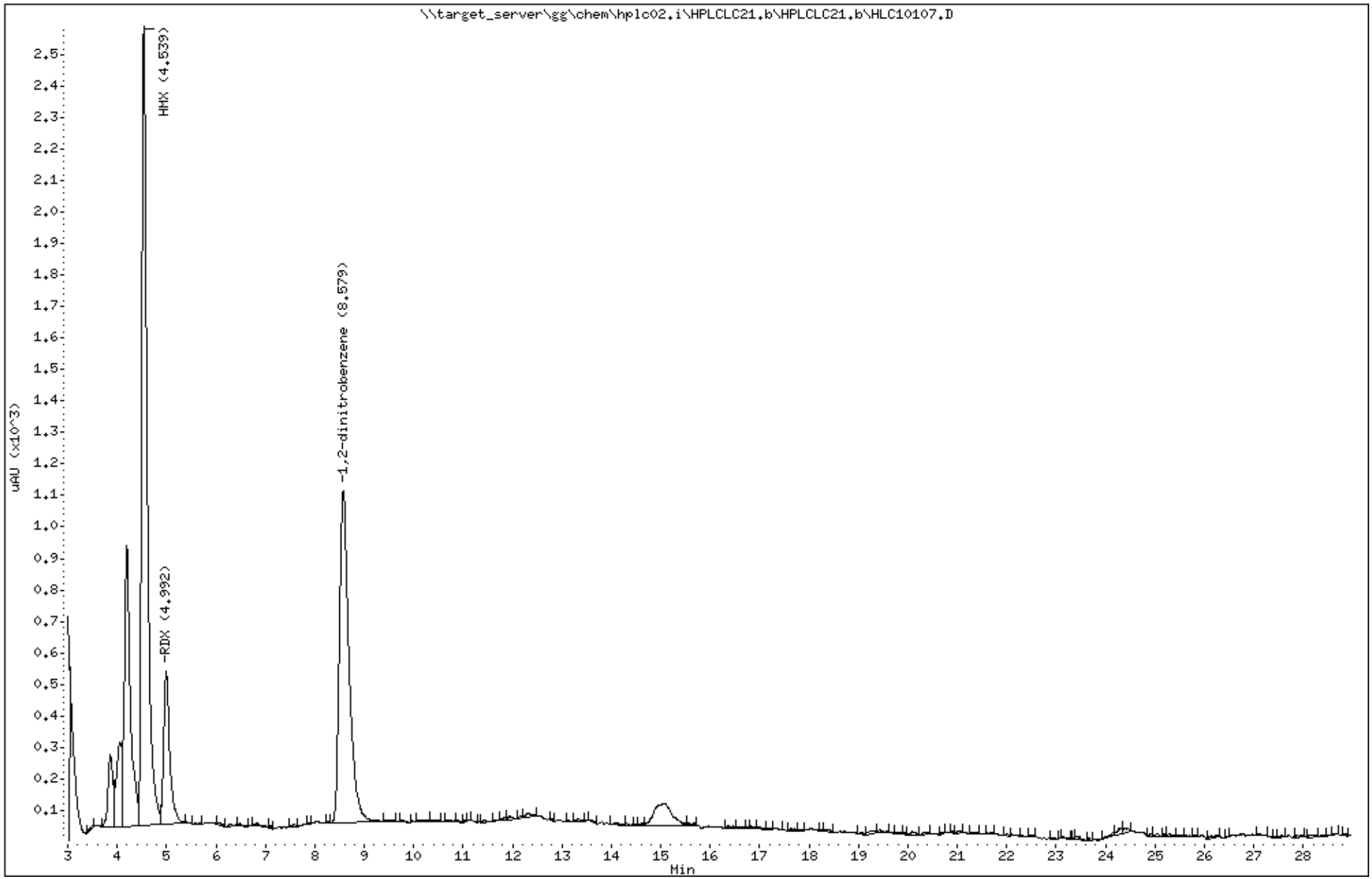
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10107.D
Date : 22-MAR-2018 11:20
Client ID: CHAAP-20B-SB03-4
Sample Info: SL2133-6

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000068
REISSUE

Data File: HLC10203.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10203.D
Lab Smp Id: SL2133-6C Client Smp ID: CHAAP-20B-SB03-4
Inj Date : 28-MAR-2018 13:02
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-6C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 29
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

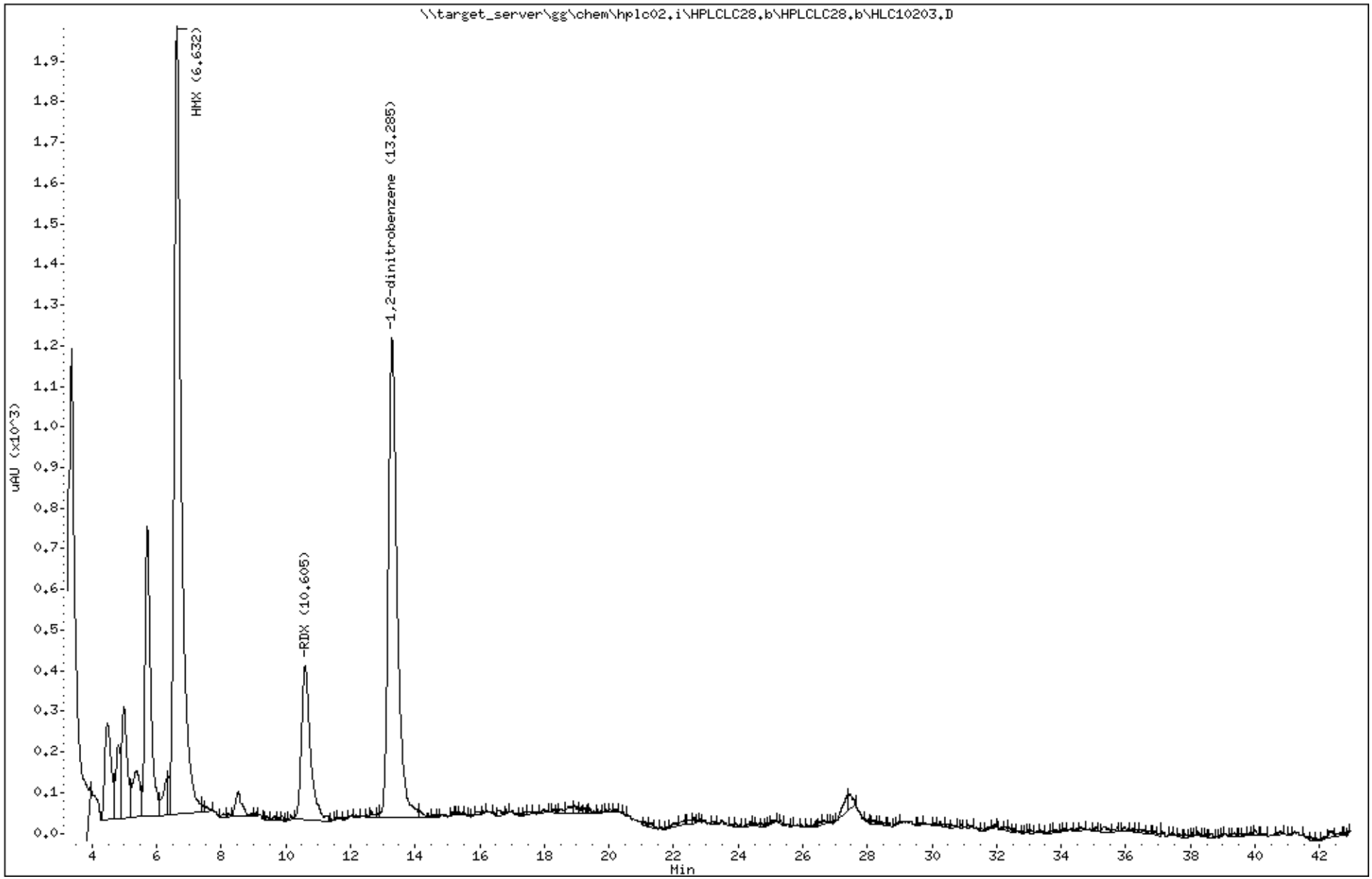
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	23.018	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.631	6.639	-0.008	1939	0.45765	1190	
4	RDX	10.605	10.606	-0.001	378	0.09501	247	
$ 2	1,2-dinitrobenzene	13.285	13.299	-0.014	1179	0.22076	574	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10203.D
Date : 28-MAR-2018 13:02
Client ID: CHAAP-20B-SB03-4
Sample Info: SL2133-6C

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000070

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-7
Client ID: CHAAP-20B-SB03-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10108.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1400	ug/Kgdrywt	1	100	120	10.	60.
RDX		630	ug/Kgdrywt	1	100	120	8.2	60.
1,3,5-Trinitrobenzene	U	60	ug/Kgdrywt	1	100	120	8.1	60.
1,3-Dinitrobenzene	U	60	ug/Kgdrywt	1	100	120	7.5	60.
Tetryl	U	60	ug/Kgdrywt	1	100	120	6.5	60.
Nitrobenzene	U	60	ug/Kgdrywt	1	100	120	26.	60.
2,4,6-Trinitrotoluene	U	60	ug/Kgdrywt	1	100	120	8.1	60.
2-Am-DNT	U	60	ug/Kgdrywt	1	100	120	25.	60.
4-Am-DNT	U	60	ug/Kgdrywt	1	100	120	20.	60.
2,6-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
2,4-Dinitrotoluene	U	60	ug/Kgdrywt	1	100	120	18.	60.
2-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	14.	60.
3-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	9.5	60.
4-Nitrotoluene	U	60	ug/Kgdrywt	1	100	120	32.	60.
Nitroglycerin	U	480	ug/Kgdrywt	1	800	960	150	480
PETN	U	480	ug/Kgdrywt	1	800	960	130	480
1,2-Dinitrobenzene		91.5	%					

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REISSUE

Katahdin Analytical Services 2000071

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-7
Client Sample ID : CHAAP-20B-SB03-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 11:52

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 13:49

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1430	
	B	6.63	1390	2.8
RDX	A	4.99	634	
	B	10.58	659	3.9

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10108.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10108.D
Lab Smp Id: SL2133-7 Client Smp ID: CHAAP-20B-SB03-8
Inj Date : 22-MAR-2018 11:52
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-7
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 85
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

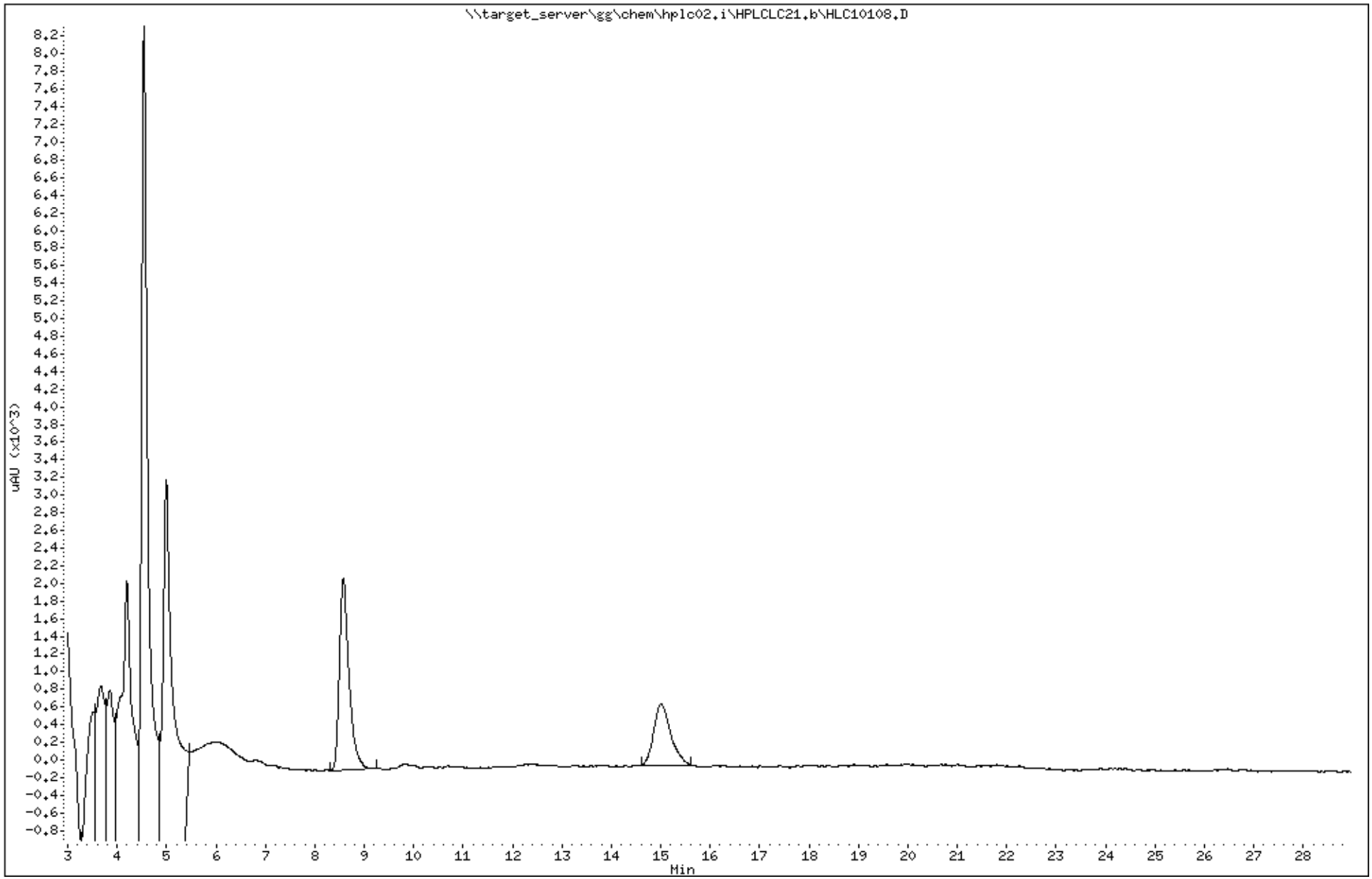
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01090	Weight of Sample (Kg)
M	23.876	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10108.D
Date : 22-MAR-2018 11:52
Client ID: CHAAP-20B-SB03-8
Sample Info: SL2133-7

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000074

REISSUE

Data File: HLC10108.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

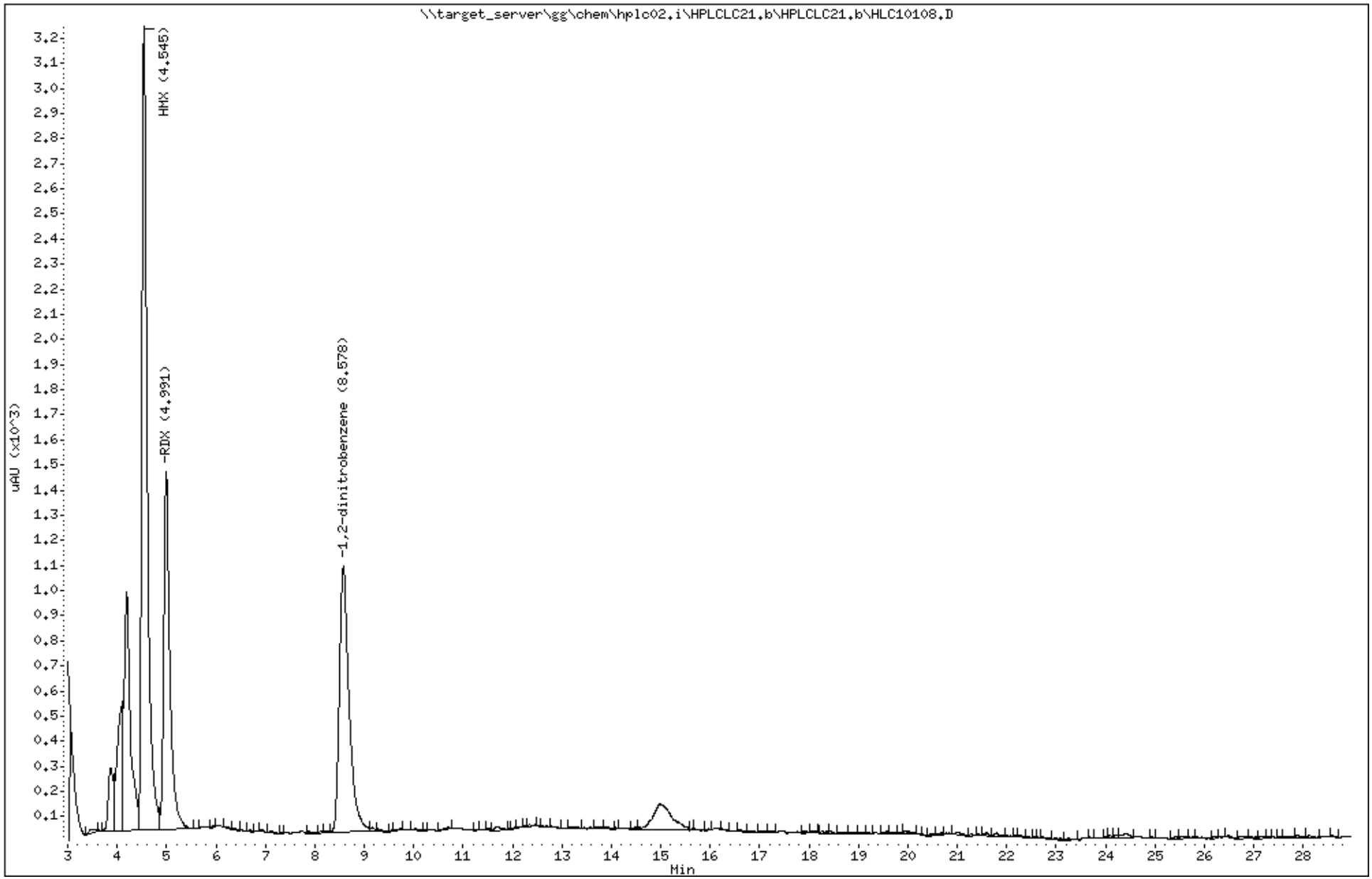
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10108.D
Lab Smp Id: SL2133-7 Client Smp ID: CHAAP-20B-SB03-8
Inj Date : 22-MAR-2018 11:52
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-7
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 85
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01090	Weight of Sample (Kg)
M	23.876	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.544	4.529	0.015	3203	0.59418	1430	
4	RDX	4.991	4.975	0.016	1427	0.26291	634	
$ 2	1,2-dinitrobenzene	8.578	8.549	0.029	1058	0.22864	551	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10108.D
Date : 22-MAR-2018 11:52
Client ID: CHAAP-20B-SB03-8
Instrument: hplc02.i
Sample Info: SL2133-7
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000076

REISSUE

Data File: HLC10204.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10204.D
Lab Smp Id: SL2133-7C Client Smp ID: CHAAP-20B-SB03-8
Inj Date : 28-MAR-2018 13:49
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-7C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 30
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01090	Weight of Sample (Kg)
M	23.876	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.628	6.639	-0.011	2433	0.57528	1390(M)	M2
4	RDX	10.581	10.606	-0.025	1105	0.27359	659	
$ 2	1,2-dinitrobenzene	13.281	13.299	-0.018	1194	0.22360	539	

10:22 am, Apr 02, 2018

QC Flag Legend

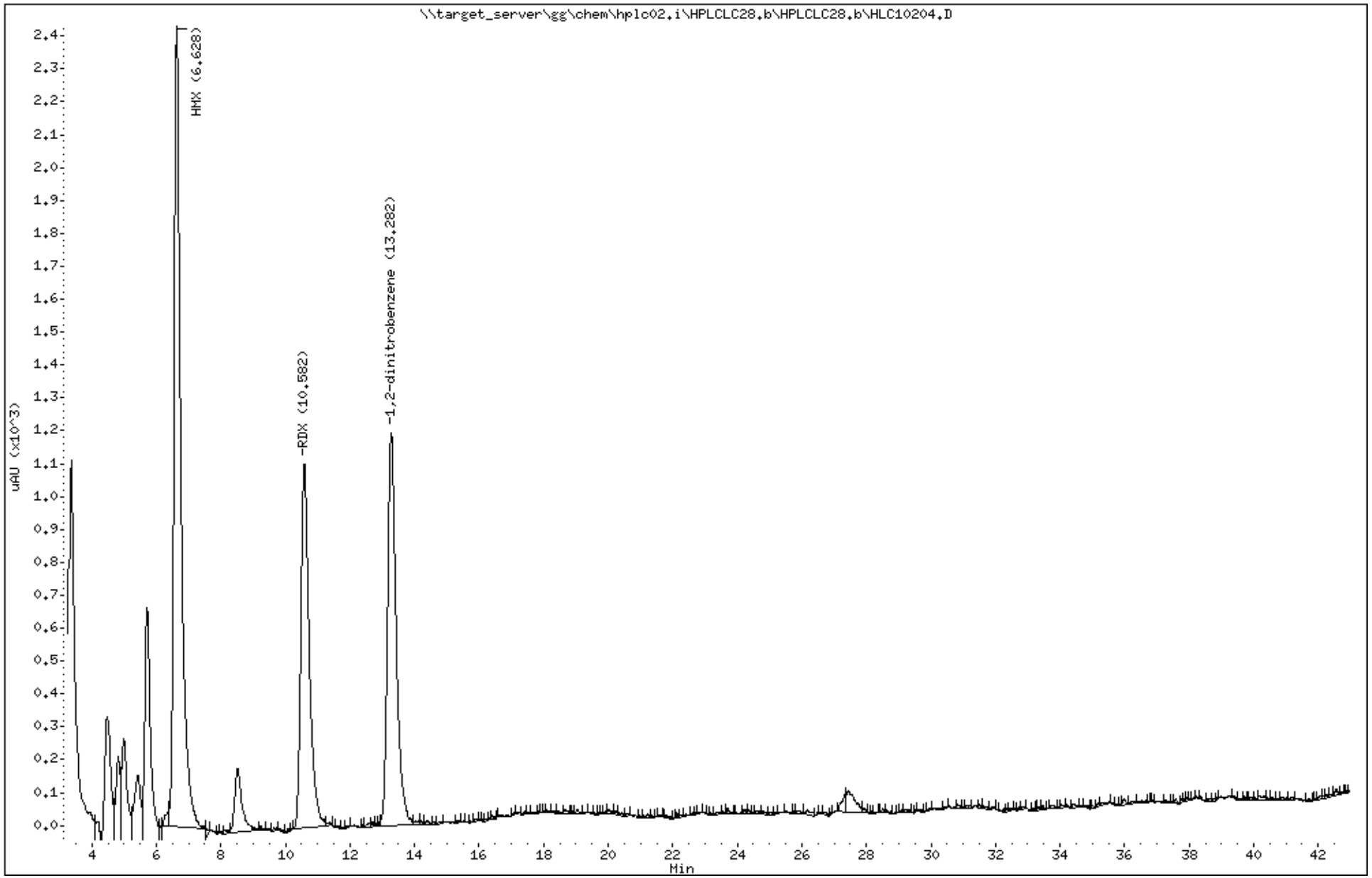
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10204.D
Date : 28-MAR-2018 13:49
Client ID: CHAAP-20B-SB03-8
Sample Info: SL2133-7C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000078

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-8RE
Client ID: CHAAP-20B-SB04-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10181.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 26-MAR-18
Extracted By: DP/AC
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225426

Analysis Date: 27-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 79.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		390	ug/Kgdrywt	1	100	120	11.	62.
RDX	J	67	ug/Kgdrywt	1	100	120	8.5	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.7	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.7	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.8	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	1000	150	500
PETN	U	500	ug/Kgdrywt	1	800	1000	130	500
1,2-Dinitrobenzene		85.6	%					

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REISSUE

Katahdin Analytical Services 2000079

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-8
Client Sample ID : CHAAP-20B-SB04-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/27/18
Time Analyzed : 13:18

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 03:11

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	392	
	B	6.64	379	3.4
RDX	A	5	67.2	
	B	10.61	86.2	24.8

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10181.D
Report Date: 30-Mar-2018 12:33

Katahdin Analytical Services

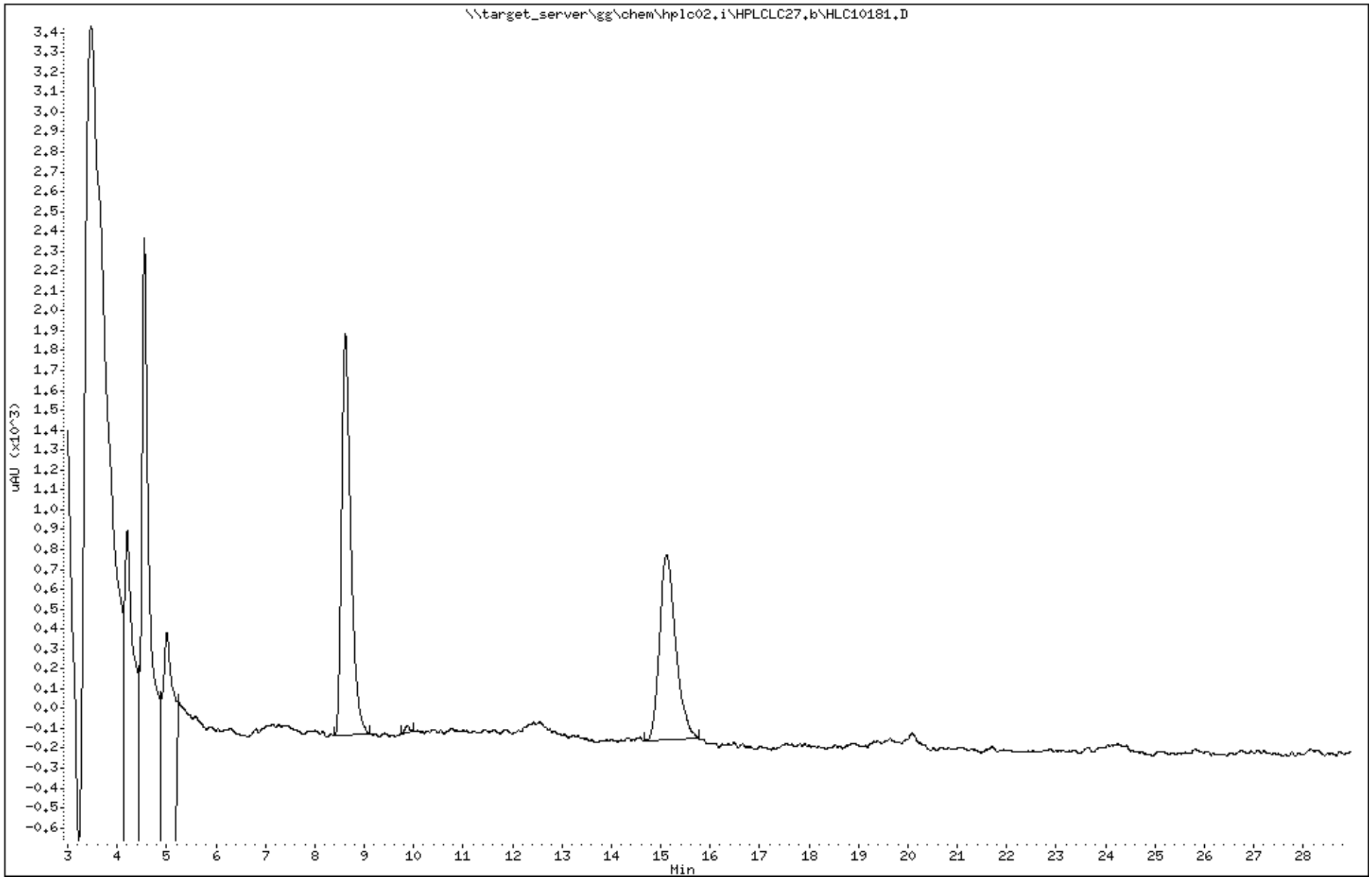
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10181.D
Lab Smp Id: SL2133-8RE Client Smp ID: CHAAP-20B-SB04-4
Inj Date : 27-MAR-2018 13:18
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-8RE
Misc Info : WG225143,WG225426,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m
Meth Date : 29-Mar-2018 00:32 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	20.593	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10181.D
Date : 27-MAR-2018 13:18
Client ID: CHAAP-20B-SB04-4
Instrument: hplc02.i
Sample Info: SL2133-8RE
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000082
REISSUE

Data File: HLC10181.D
Report Date: 30-Mar-2018 12:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10181.D
Lab Smp Id: SL2133-8RE Client Smp ID: CHAAP-20B-SB04-4
Inj Date : 27-MAR-2018 13:18
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-8RE
Misc Info : WG225143,WG225426,WG225143-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m\EXPB05A.m
Meth Date : 28-Mar-2018 10:48 acronin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	20.593	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.552	4.548	0.004	848	0.15731	392(M)	M2
4	RDX	4.999	5.001	-0.002	117	0.02695	67.2(aM)	M2
$ 2	1,2-dinitrobenzene	8.619	8.621	-0.002	989	0.21373	533	



10:23 am, Apr 02, 2018

QC Flag Legend

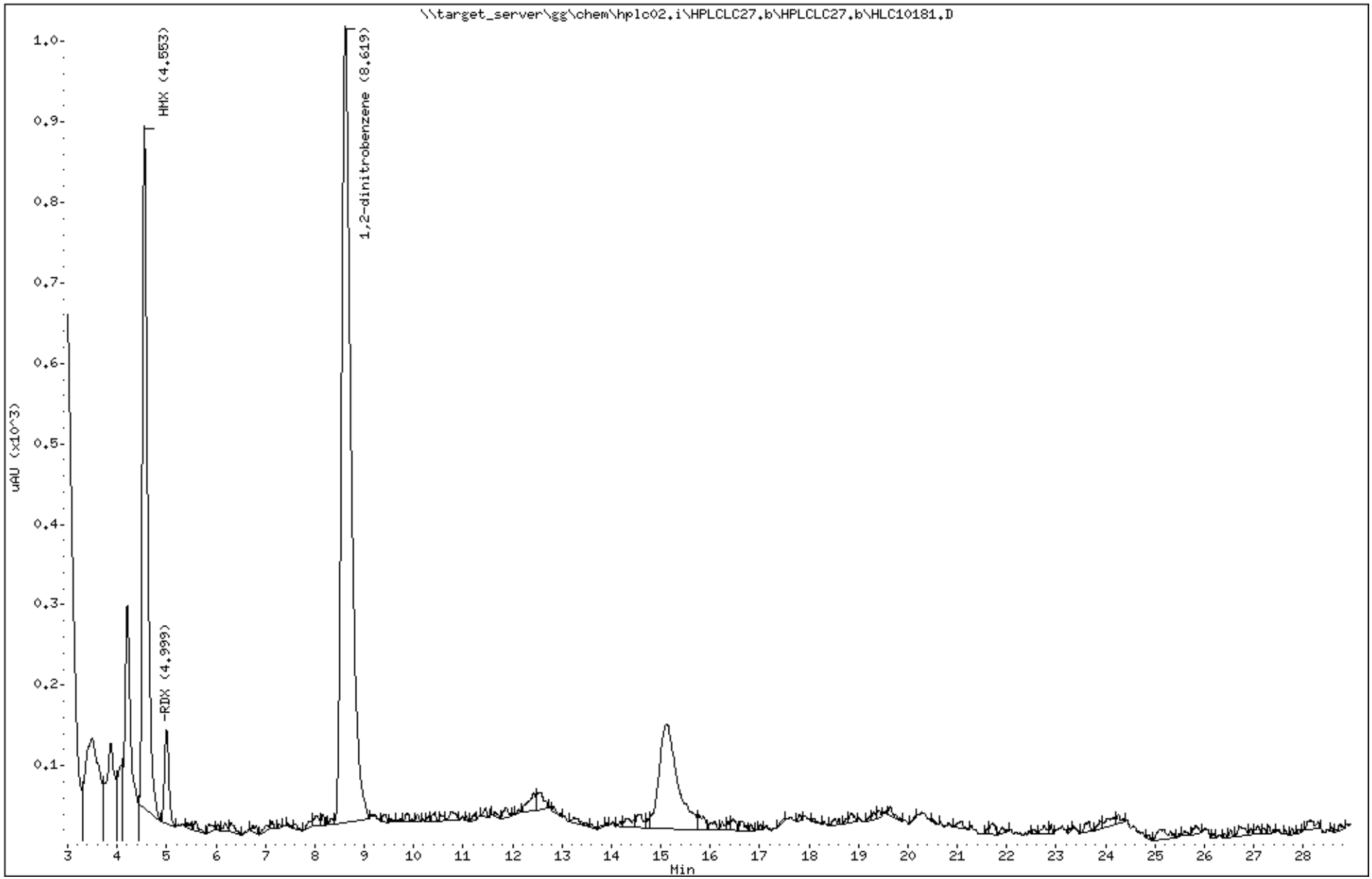
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10181.D
Date : 27-MAR-2018 13:18
Client ID: CHAAP-20B-SB04-4
Sample Info: SL2133-8RE

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000084
REISSUE

Data File: HLC10221.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10221.D
Lab Smp Id: SL2133-8REC Client Smp ID: CHAAP-20B-SB04-4
Inj Date : 29-MAR-2018 03:11
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-8REC
Misc Info : WG225143,WG225426,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 47
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	20.593	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.640	6.639	0.001	656	0.15214	379	
4	RDX	10.607	10.606	0.001	132	0.03458	86.2(a)	
$ 2	1,2-dinitrobenzene	13.327	13.299	0.028	1096	0.20506	511	

QC Flag Legend

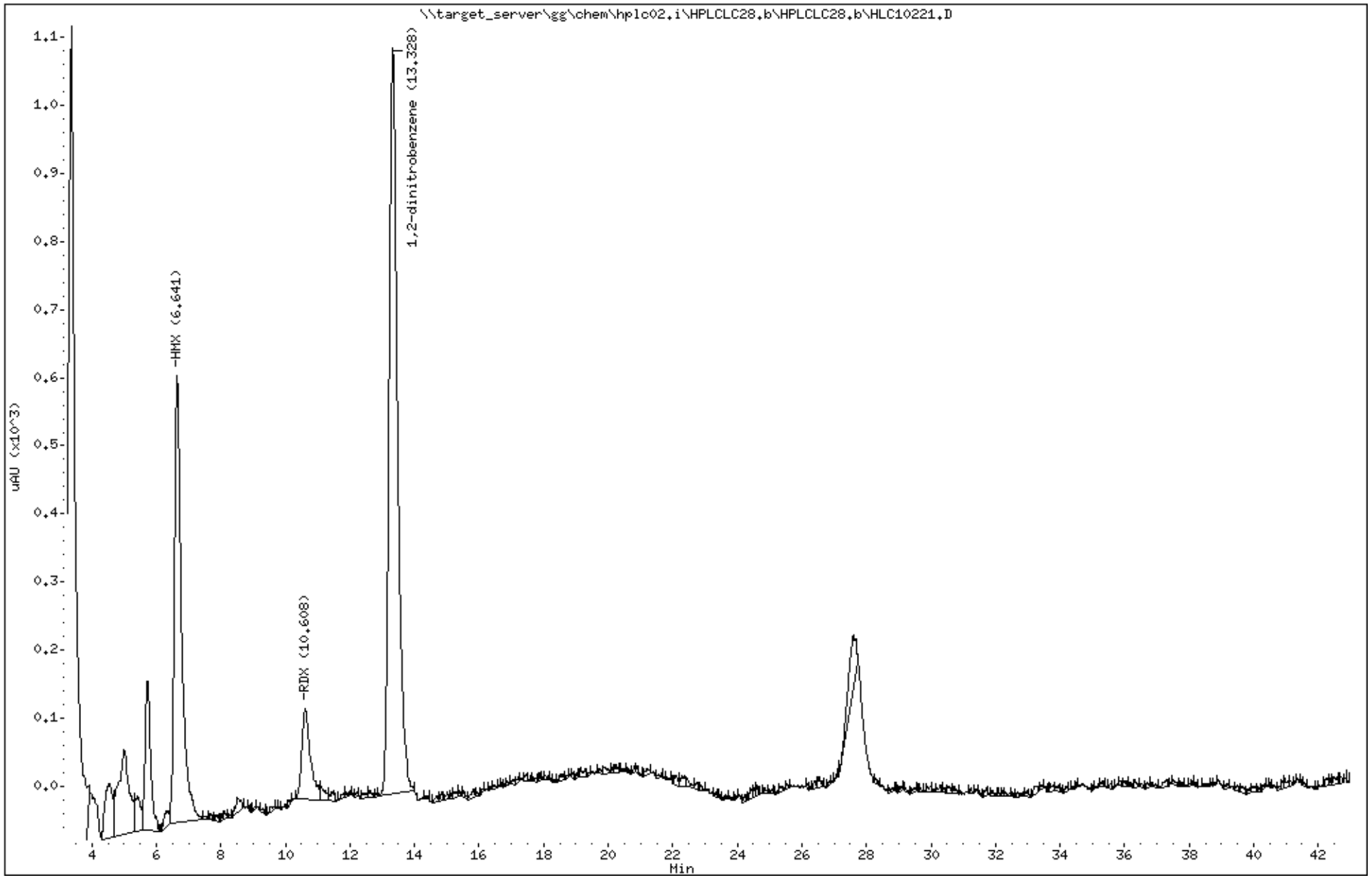
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10221.D
Date : 29-MAR-2018 03:11
Client ID: CHAAP-20B-SB04-4
Sample Info: SL2133-8REC

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000086

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-9
Client ID: CHAAP-20B-SB04-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10110.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		320	ug/Kgdrywt	1	100	120	10.	62.
RDX		550	ug/Kgdrywt	1	100	120	8.4	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.2	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.6	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.6	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.2	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	18.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.7	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
Nitroglycerin	U	490	ug/Kgdrywt	1	800	980	150	490
PETN	U	490	ug/Kgdrywt	1	800	980	130	490
1,2-Dinitrobenzene		85.8	%					

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REISSUE **Katahdin Analytical Services 2000087**

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-9
Client Sample ID : CHAAP-20B-SB04-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 12:56

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 15:24

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	316	
	B	6.65	300	5.2
RDX	A	4.99	553	
	B	10.63	589	6.3

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10110.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10110.D
Lab Smp Id: SL2133-9 Client Smp ID: CHAAP-20B-SB04-8
Inj Date : 22-MAR-2018 12:56
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-9
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 87
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

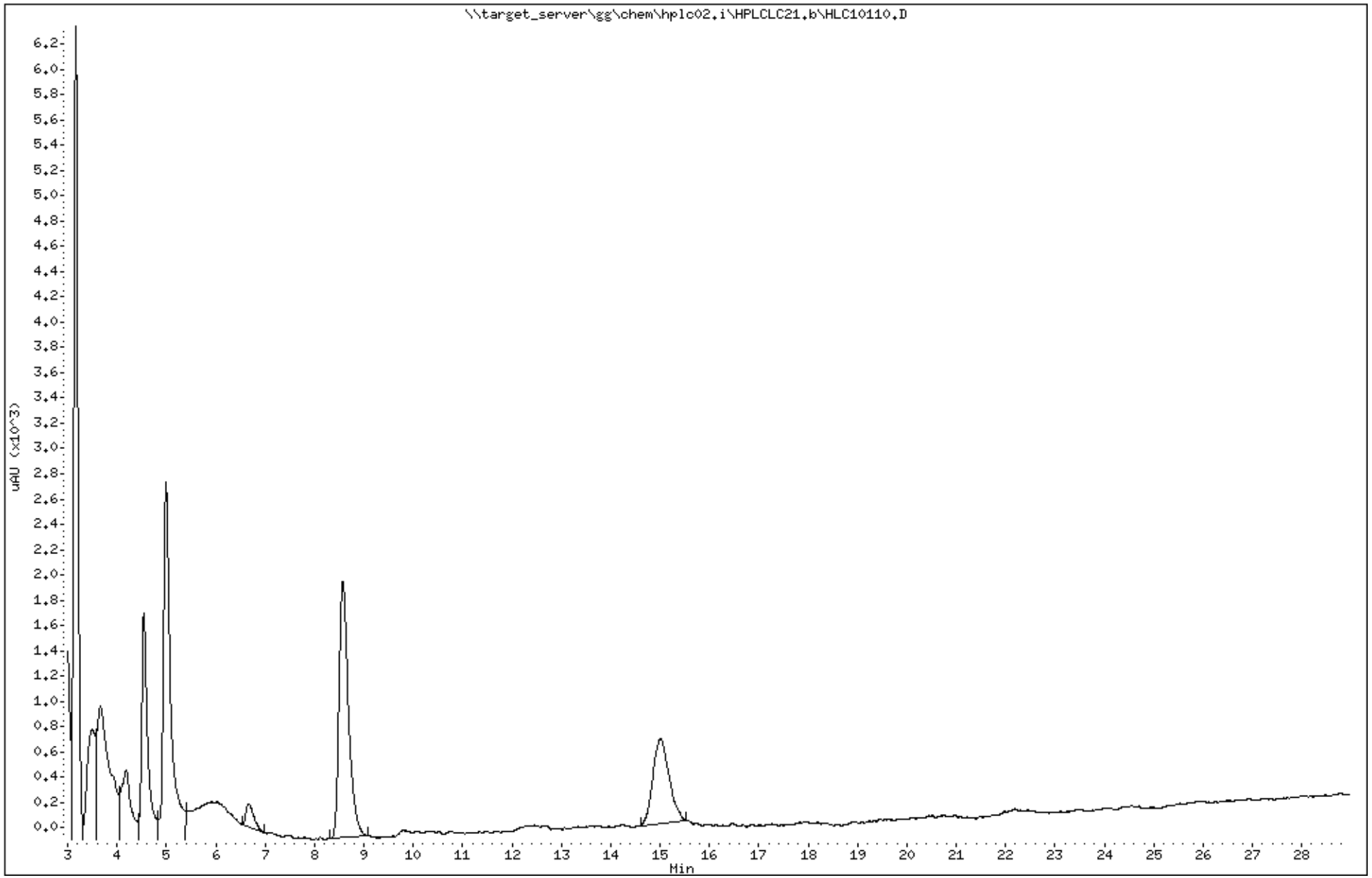
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01060	Weight of Sample (Kg)
M	23.338	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10110.D
Date : 22-MAR-2018 12:56
Client ID: CHAAP-20B-SB04-8
Sample Info: SL2133-9

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000090

REISSUE

Data File: HLC10110.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10110.D
Lab Smp Id: SL2133-9 Client Smp ID: CHAAP-20B-SB04-8
Inj Date : 22-MAR-2018 12:56
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-9
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 87
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01060	Weight of Sample (Kg)
M	23.338	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.547	4.529	0.018	693	0.12856	316	
4	RDX	4.993	4.975	0.018	1215	0.22472	553	
$ 2	1,2-dinitrobenzene	8.573	8.549	0.024	993	0.21459	528(M)	M2

QC Flag Legend

M - Compound response manually integrated.

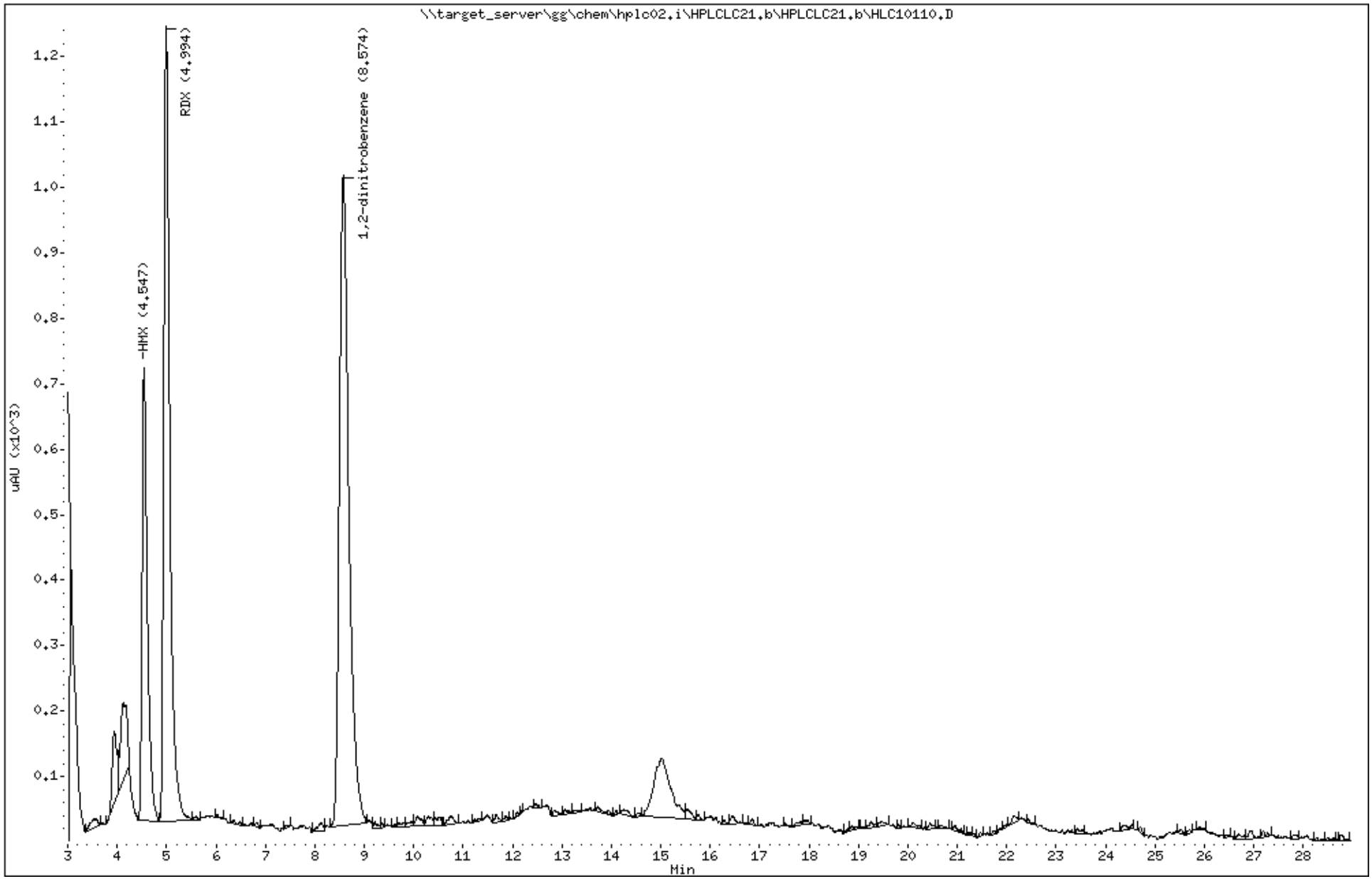
10:23 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10110.D
Date : 22-MAR-2018 12:56
Client ID: CHAAP-20B-SB04-8
Sample Info: SL2133-9

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000092

REISSUE

Data File: HLC10206.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10206.D
Lab Smp Id: SL2133-9C Client Smp ID: CHAAP-20B-SB04-8
Inj Date : 28-MAR-2018 15:24
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-9C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 32
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01060	Weight of Sample (Kg)
M	23.338	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.654	6.639	0.015	529	0.12190	300(M)	M3
4	RDX	10.634	10.606	0.028	965	0.23920	589	
$ 2	1,2-dinitrobenzene	13.347	13.299	0.048	1130	0.21149	520	

QC Flag Legend

M - Compound response manually integrated.

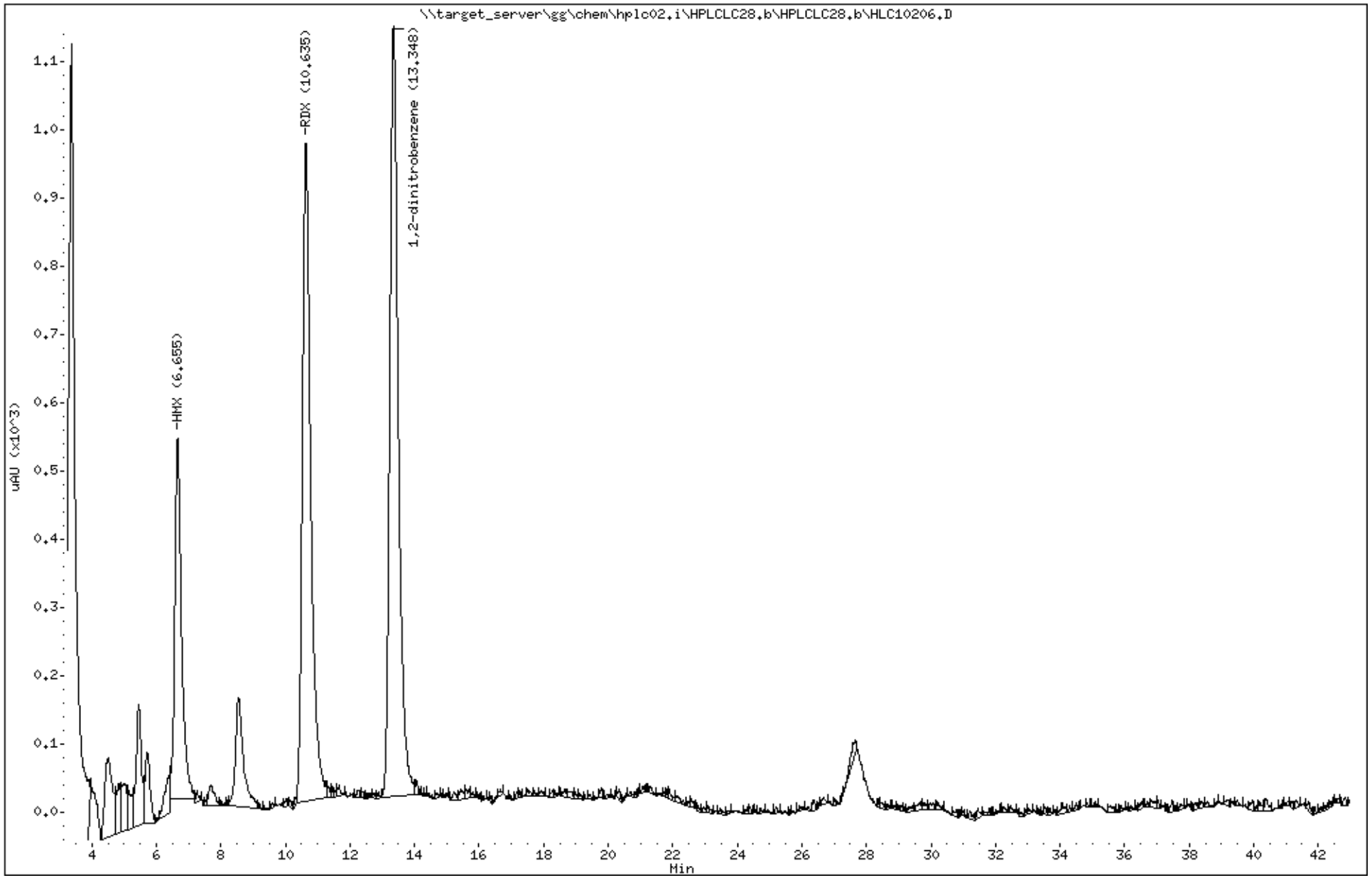
10:23 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10206.D
Date : 28-MAR-2018 15:24
Client ID: CHAAP-20B-SB04-8
Sample Info: SL2133-9C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000094

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-10
Client ID: CHAAP-20B-SB05-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10111.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	64	ug/Kgdrywt	1	100	130	11.	64.
RDX	U	64	ug/Kgdrywt	1	100	130	8.8	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.0	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	7.0	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.6	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	35.	64.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		85.1	%					

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REISSUE

Katahdin Analytical Services 2000095

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10111.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10111.D
Lab Smp Id: SL2133-10 Client Smp ID: CHAAP-20B-SB05-4
Inj Date : 22-MAR-2018 13:27
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-10
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 88
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

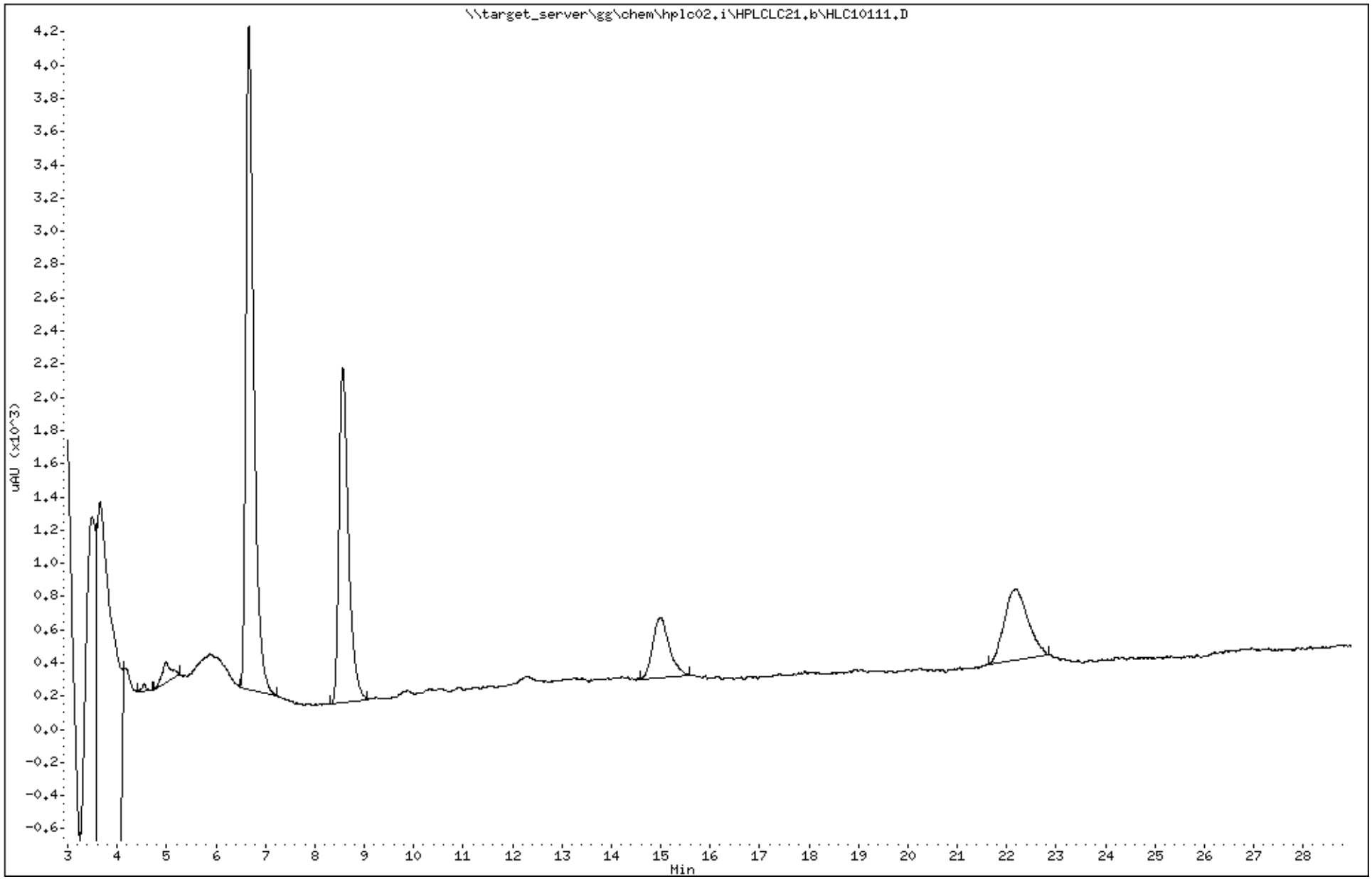
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	22.477	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10111.D
Date : 22-MAR-2018 13:27
Client ID: CHAAP-20B-SB05-4
Sample Info: SL2133-10

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000097
REISSUE

Data File: HLC10111.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10111.D
Lab Smp Id: SL2133-10 Client Smp ID: CHAAP-20B-SB05-4
Inj Date : 22-MAR-2018 13:27
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-10
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 88
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	22.477	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
~~1 HMX~~	~~4.542~~	~~4.529~~	~~0.013~~	~~26~~	~~0.00482~~	~~12.4(aM)~~	~~M2~~
$ 2 1,2-dinitrobenzene	8.569	8.549	0.020	985	0.21286	549	

NC

10:24 am, Apr 02, 2018

QC Flag Legend

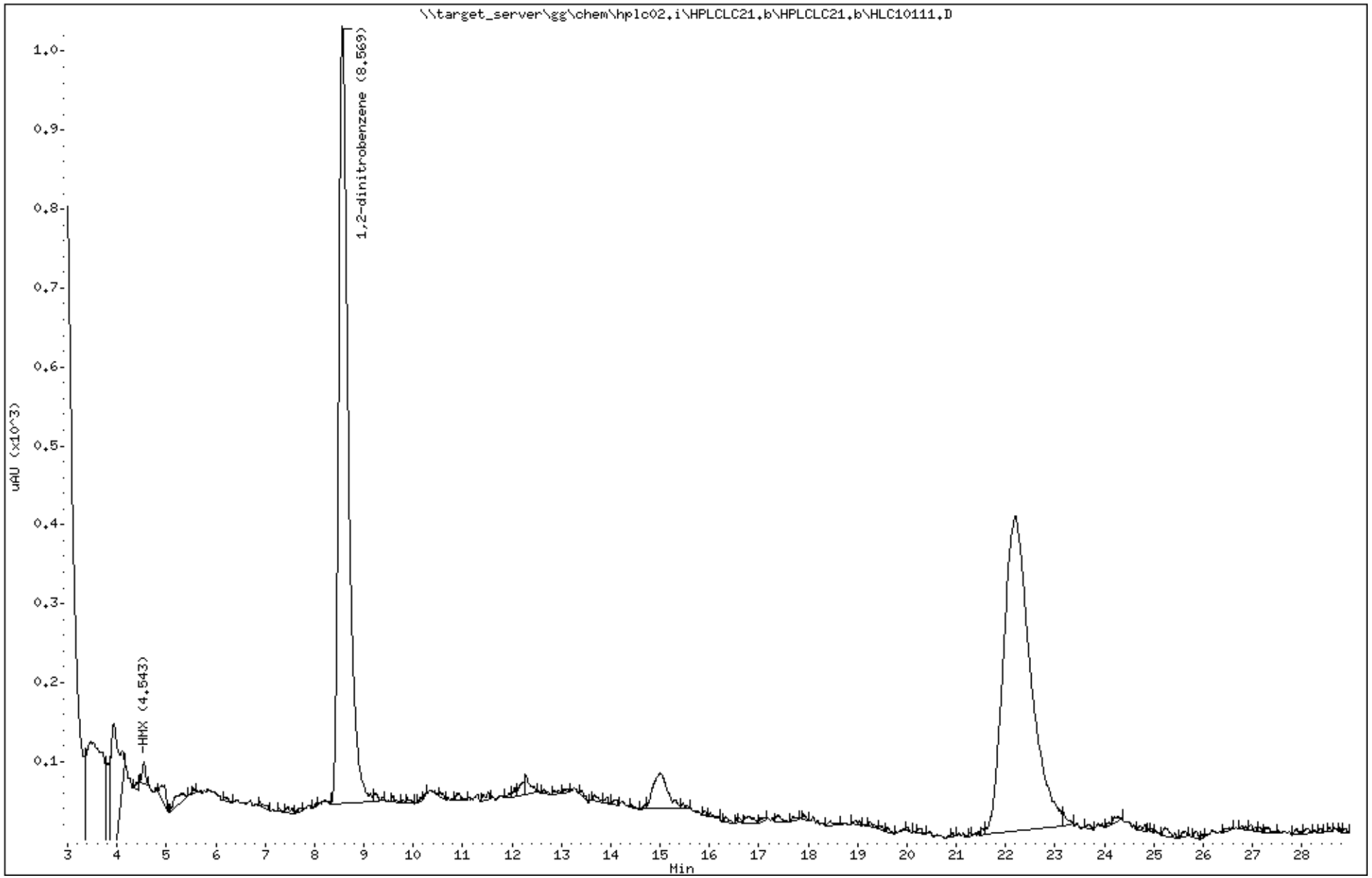
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10111.D
Date : 22-MAR-2018 13:27
Client ID: CHAAP-20B-SB05-4
Sample Info: SL2133-10

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000099
REISSUE

Data File: HLC10207.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10207.D
Lab Smp Id: SL2133-10C Client Smp ID: CHAAP-20B-SB05-4
Inj Date : 28-MAR-2018 16:11
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-10C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	22.477	% Moisture
Cpnd Variable		Local Compound Variable

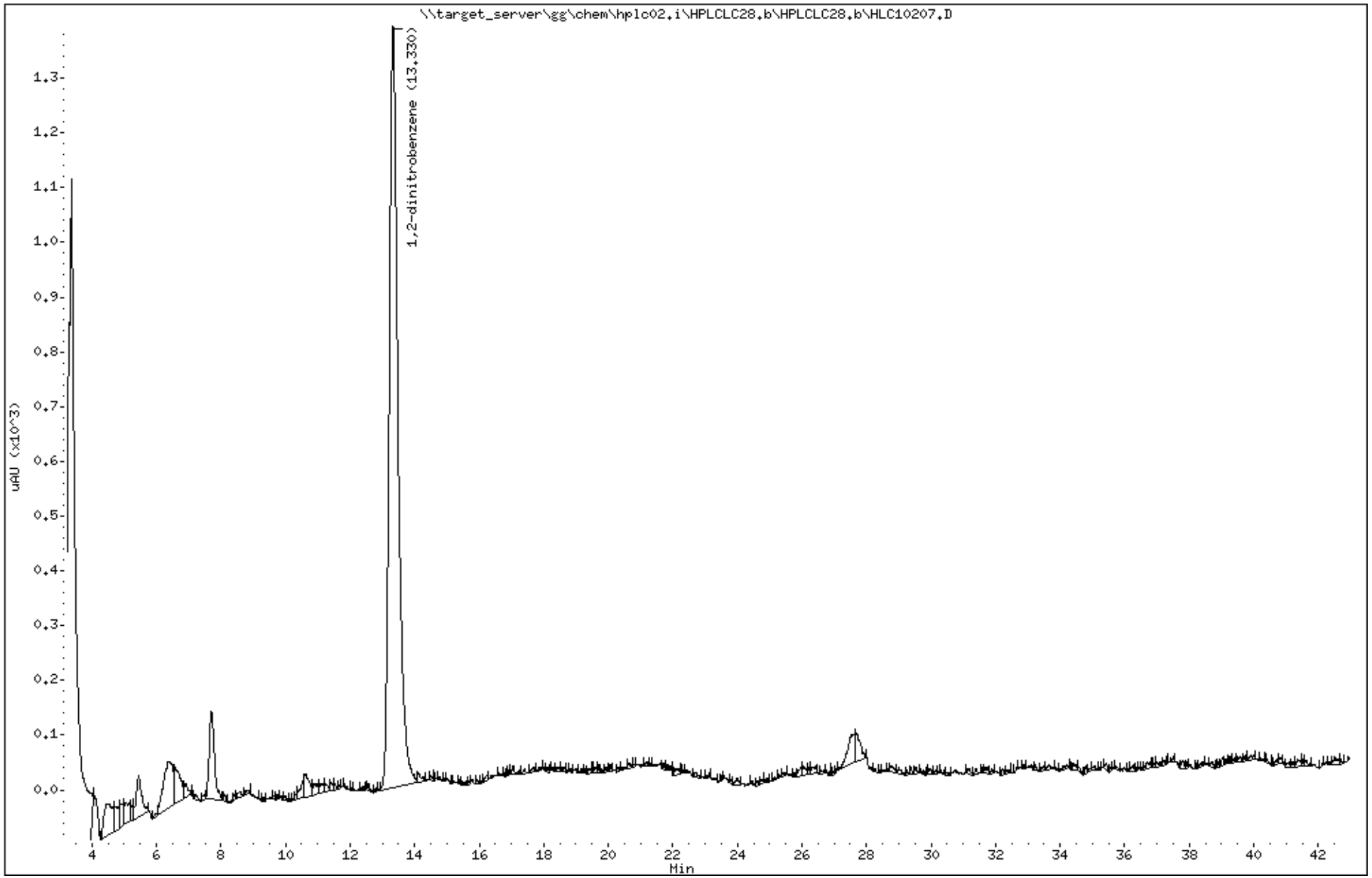
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.330	13.299	0.031	1392	0.26105	673	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10207.D
Date : 28-MAR-2018 16:11
Client ID: CHAAP-20B-SB05-4
Sample Info: SL2133-10C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000101

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-11
Client ID: CHAAP-20B-SB05-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10112.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 76.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	19	ug/Kgdrywt	1	100	120	10.	59.
RDX	J	94	ug/Kgdrywt	1	100	120	8.0	59.
1,3,5-Trinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
1,3-Dinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.3	59.
Tetryl	U	59	ug/Kgdrywt	1	100	120	6.4	59.
Nitrobenzene	U	59	ug/Kgdrywt	1	100	120	26.	59.
2,4,6-Trinitrotoluene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
2-Am-DNT	U	59	ug/Kgdrywt	1	100	120	25.	59.
4-Am-DNT	U	59	ug/Kgdrywt	1	100	120	20.	59.
2,6-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
2,4-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	18.	59.
2-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	14.	59.
3-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	9.3	59.
4-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	150	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		88.0	%					

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REISSUE

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-11
Client Sample ID : CHAAP-20B-SB05-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 13:59

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 16:58

Analyte	Column	RT	Concentration	RPD
HMX	A	4.55	19.3	
	B	6.65	28.1	37.1
RDX	A	4.98	94.3	
	B	10.63	105	10.7

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Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10112.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10112.D
Lab Smp Id: SL2133-11 Client Smp ID: CHAAP-20B-SB05-8
Inj Date : 22-MAR-2018 13:59
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-11
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 89
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01110	Weight of Sample (Kg)
M	23.764	% Moisture
Cpnd Variable		Local Compound Variable

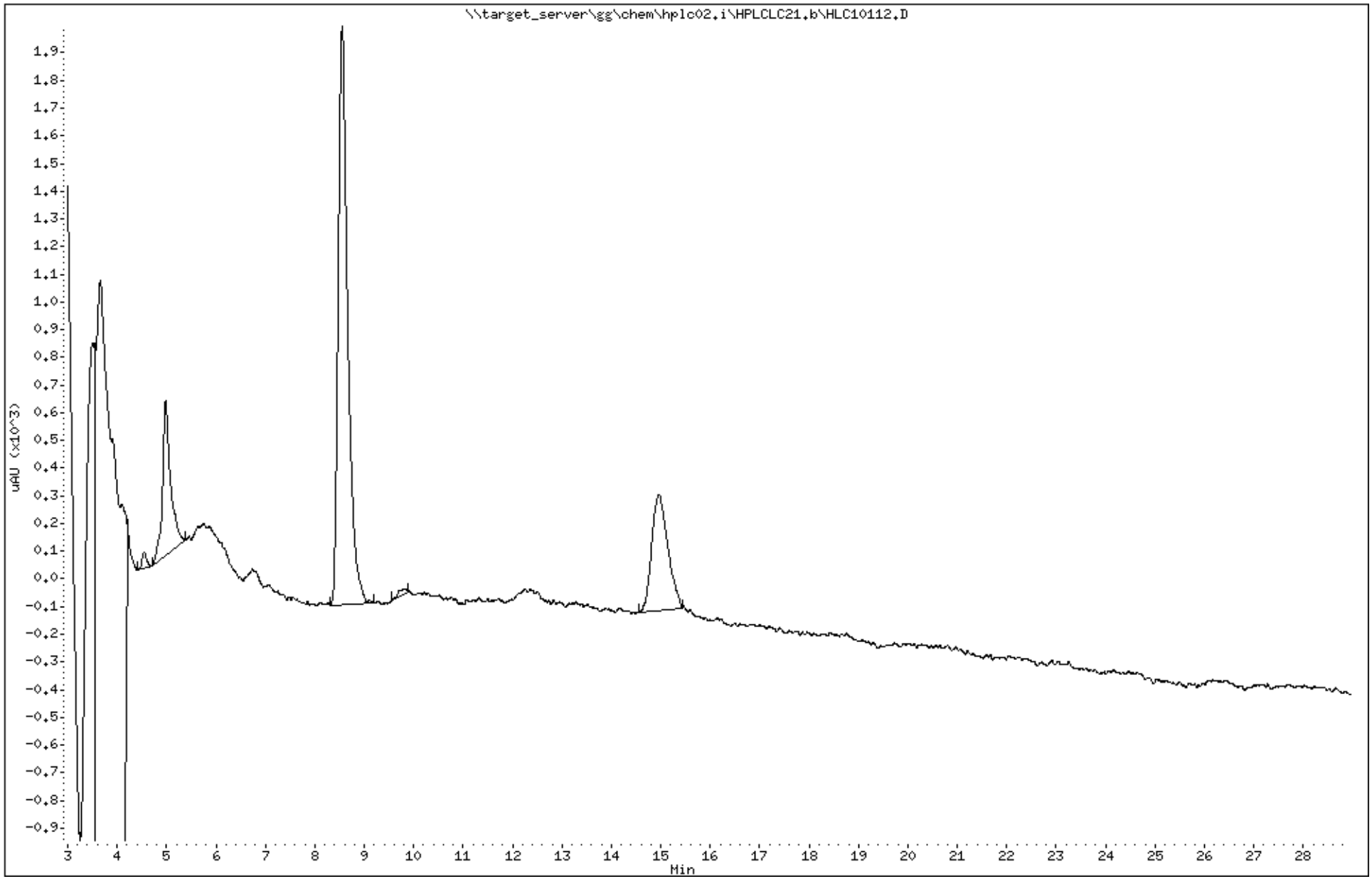
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10112.D
Date : 22-MAR-2018 13:59
Client ID: CHAAP-20B-SB05-8
Sample Info: SL2133-11

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000105

REISSUE

Data File: HLC10112.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10112.D
Lab Smp Id: SL2133-11 Client Smp ID: CHAAP-20B-SB05-8
Inj Date : 22-MAR-2018 13:59
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-11
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 89
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01110	Weight of Sample (Kg)
M	23.764	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.550	4.529	0.021	44	0.00816	19.3(aM)	M3
4	RDX	4.977	4.975	0.002	189	0.03992	94.3(a)	
$ 2	1,2-dinitrobenzene	8.550	8.549	0.001	1019	0.22021	520	

10:24 am, Apr 02, 2018

QC Flag Legend

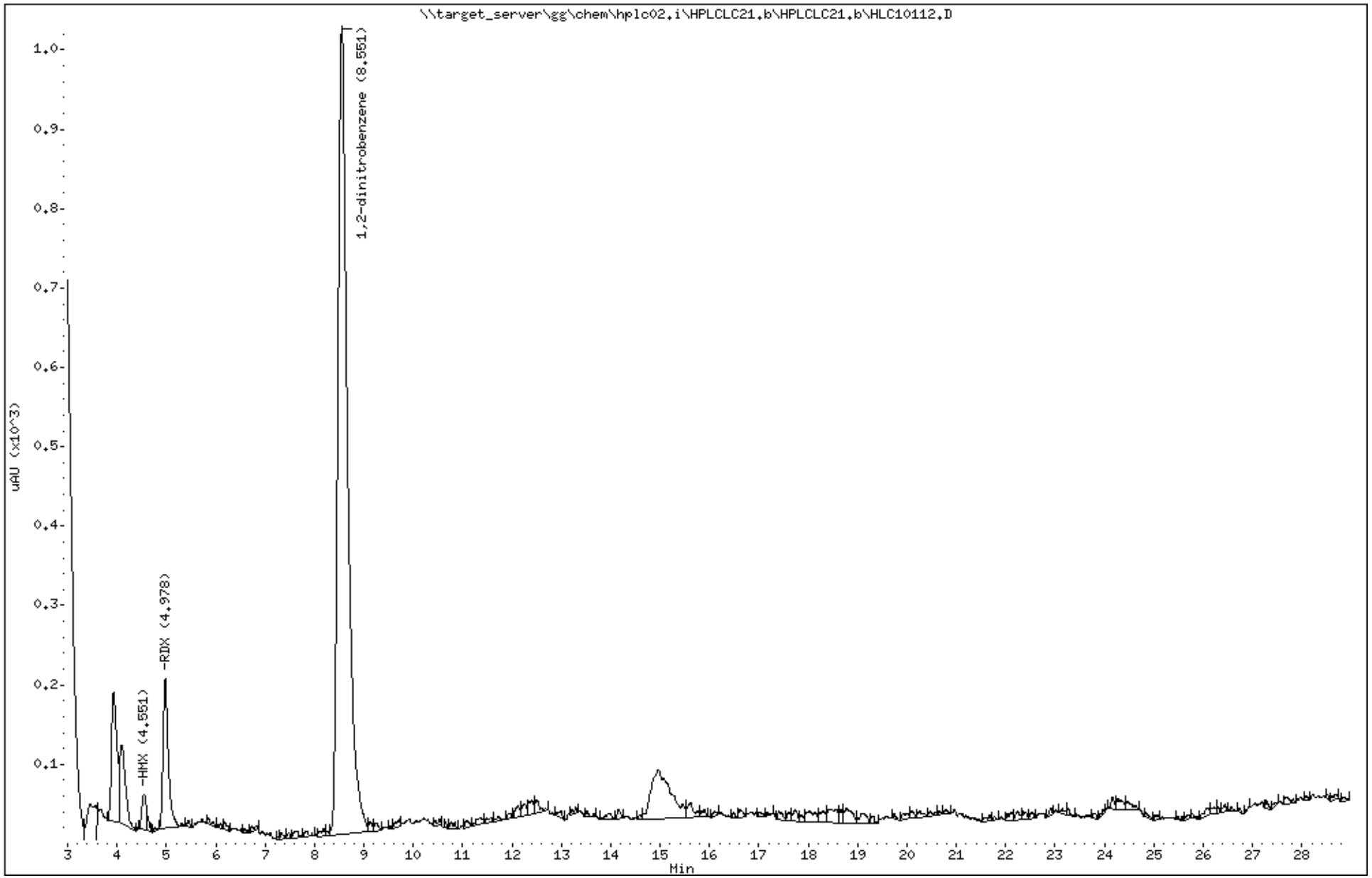
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10112.D
Date : 22-MAR-2018 13:59
Client ID: CHAAP-20B-SB05-8
Sample Info: SL2133-11

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000107
REISSUE

Data File: HLC10208.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10208.D
Lab Smp Id: SL2133-11C Client Smp ID: CHAAP-20B-SB05-8
Inj Date : 28-MAR-2018 16:58
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-11C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 34
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01110	Weight of Sample (Kg)
M	23.764	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.647	6.639	0.008	67	0.01189	28.1(aM)	M2
4	RDX	10.634	10.606	0.028	172	0.04440	105(a)	
$ 2	1,2-dinitrobenzene	13.341	13.299	0.042	1143	0.21395	506	

10:24 am, Apr 02, 2018

QC Flag Legend

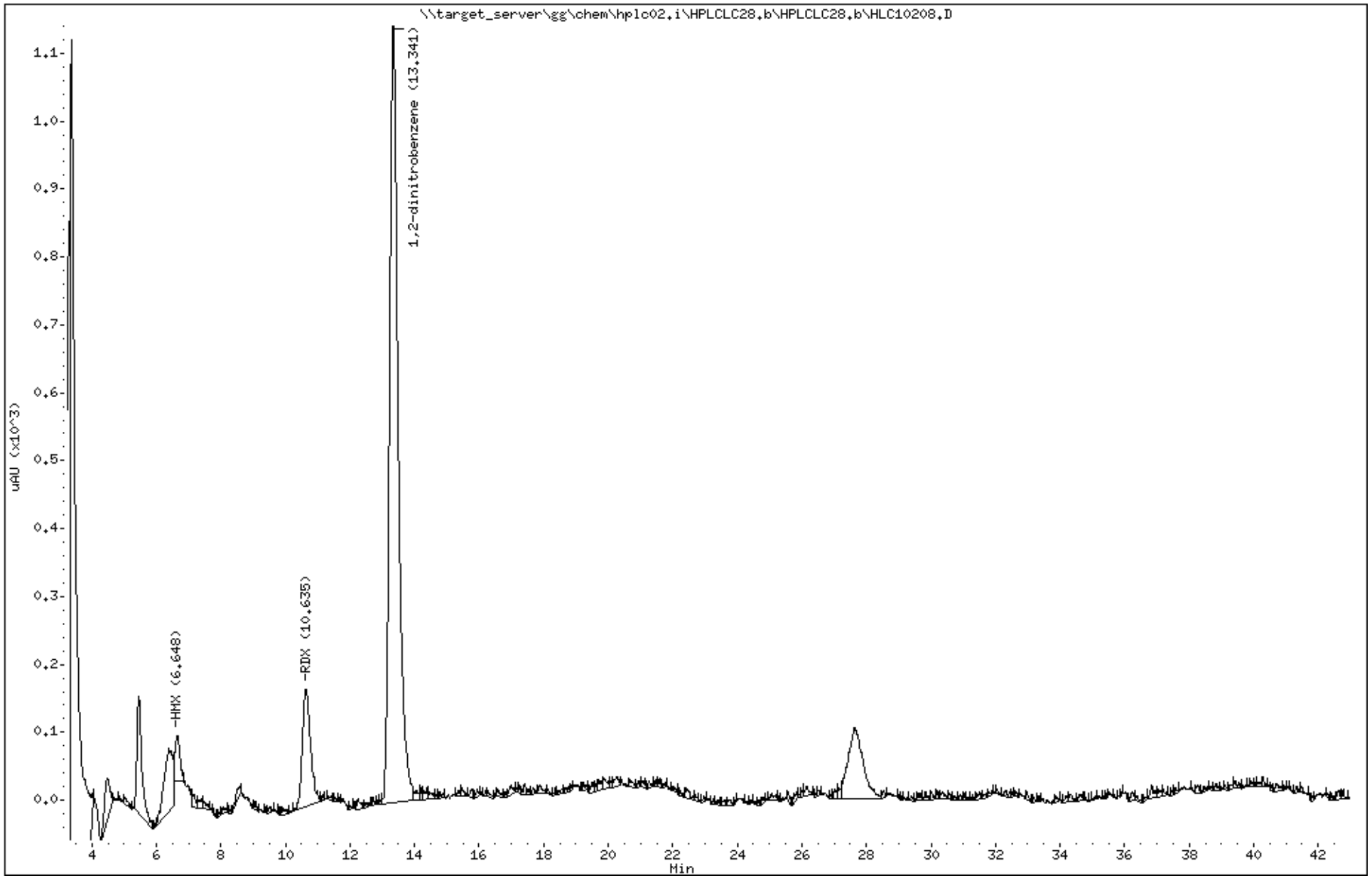
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10208.D
Date : 28-MAR-2018 16:58
Client ID: CHAAP-20B-SB05-8
Sample Info: SL2133-11C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000109

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-12
Client ID: CHAAP-20B-SB06-4
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10113.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 79.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1200	ug/Kgdrywt	1	100	120	11.	62.
RDX	J	96	ug/Kgdrywt	1	100	120	8.5	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.8	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.8	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	28.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.9	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	1000	160	500
PETN	U	500	ug/Kgdrywt	1	800	1000	140	500
1,2-Dinitrobenzene		86.1	%					

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REISSUE

Katahdin Analytical Services 2000110

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-12
Client Sample ID : CHAAP-20B-SB06-4

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 14:31

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 17:45

Analyte	Column	RT	Concentration	RPD
HMX	A	4.53	1200	
	B	6.64	1180	1.7
RDX	A	4.98	96.3	
	B	10.62	108	11.5

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sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10113.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10113.D
Lab Smp Id: SL2133-12 Client Smp ID: CHAAP-20B-SB06-4
Inj Date : 22-MAR-2018 14:31
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-12
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 90
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	20.854	% Moisture
Cpnd Variable		Local Compound Variable

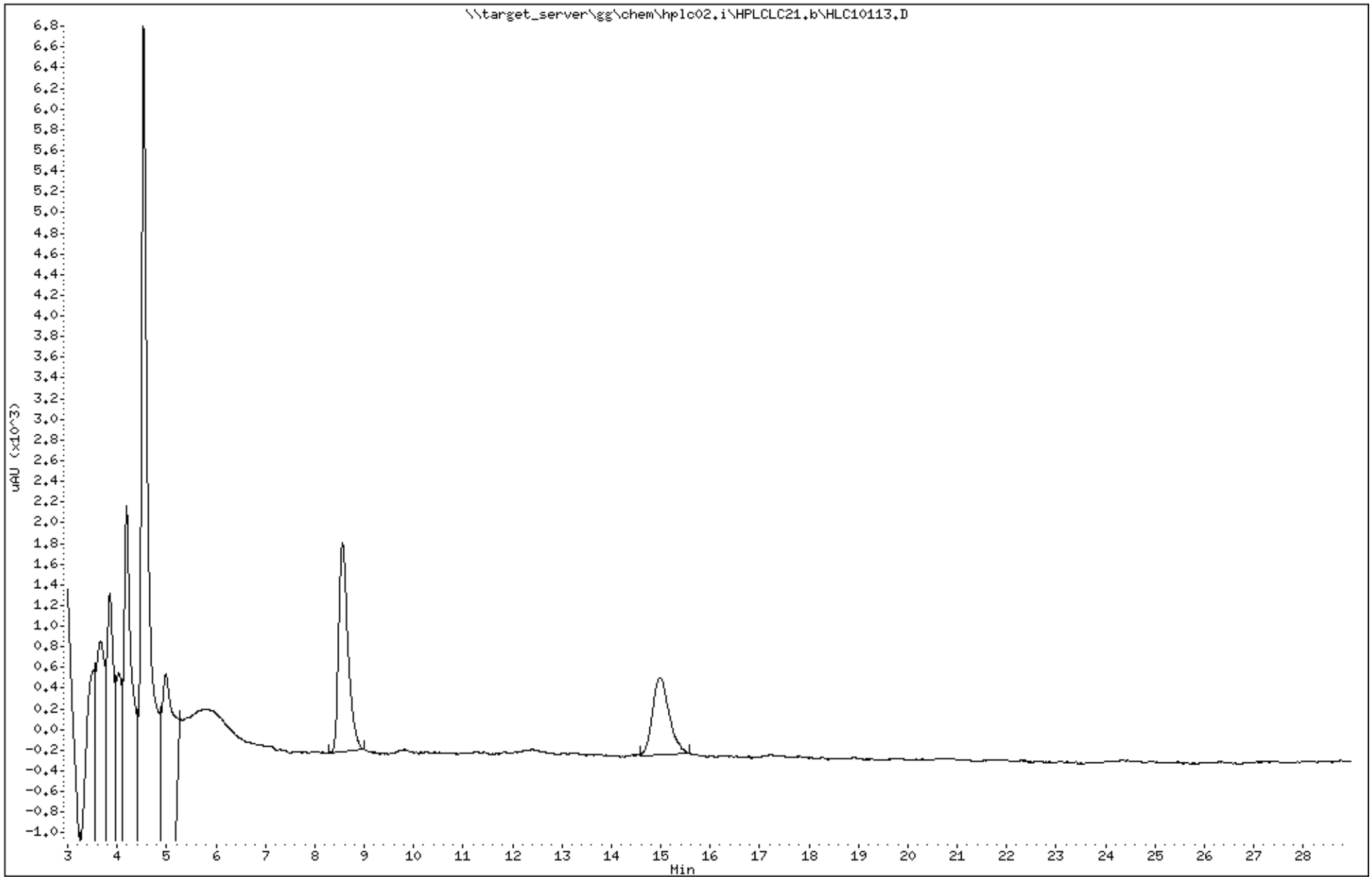
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10113.D
Date : 22-MAR-2018 14:31
Client ID: CHAAP-20B-SB06-4
Sample Info: SL2133-12

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000113

REISSUE

Data File: HLC10113.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10113.D
Lab Smp Id: SL2133-12 Client Smp ID: CHAAP-20B-SB06-4
Inj Date : 22-MAR-2018 14:31
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-12
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 90
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

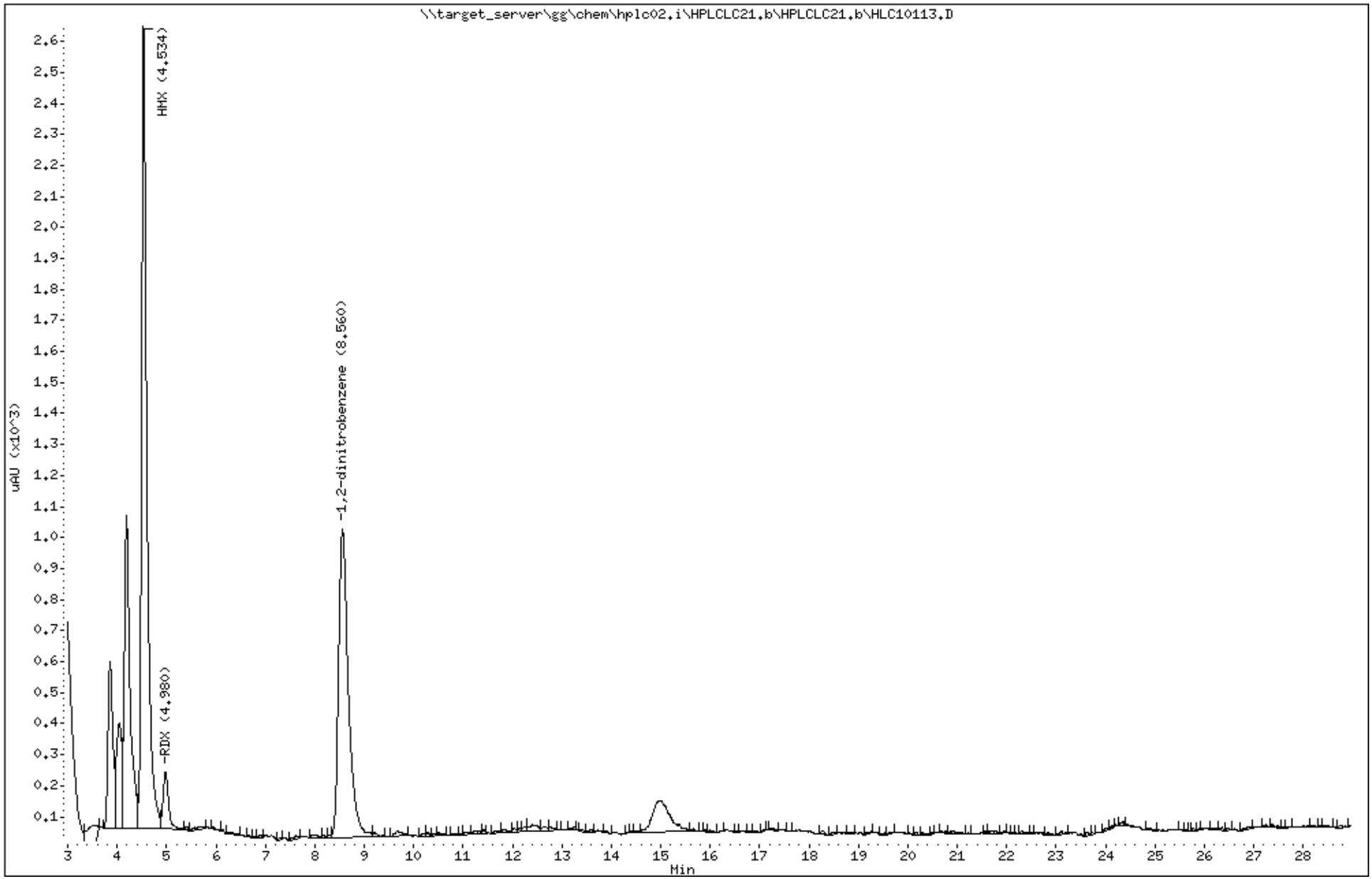
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	20.854	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.533	4.529	0.004	2585	0.47953	1200	
4	RDX	4.980	4.975	0.005	181	0.03847	96.3(a)	
$ 2	1,2-dinitrobenzene	8.560	8.549	0.011	995	0.21502	538	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10113.D
Date : 22-MAR-2018 14:31
Client ID: CHAAP-20B-SB06-4
Instrument: hplc02.i
Sample Info: SL2133-12
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000115

REISSUE

Data File: HLC10209.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10209.D
Lab Smp Id: SL2133-12C Client Smp ID: CHAAP-20B-SB06-4
Inj Date : 28-MAR-2018 17:45
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-12C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 35
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	20.854	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.640	6.639	0.001	2002	0.47265	1180	
4	RDX	10.620	10.606	0.014	167	0.04318	108(aM)	M2
$ 2	1,2-dinitrobenzene	13.333	13.299	0.034	1116	0.20884	522	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

10:25 am, Apr 02, 2018

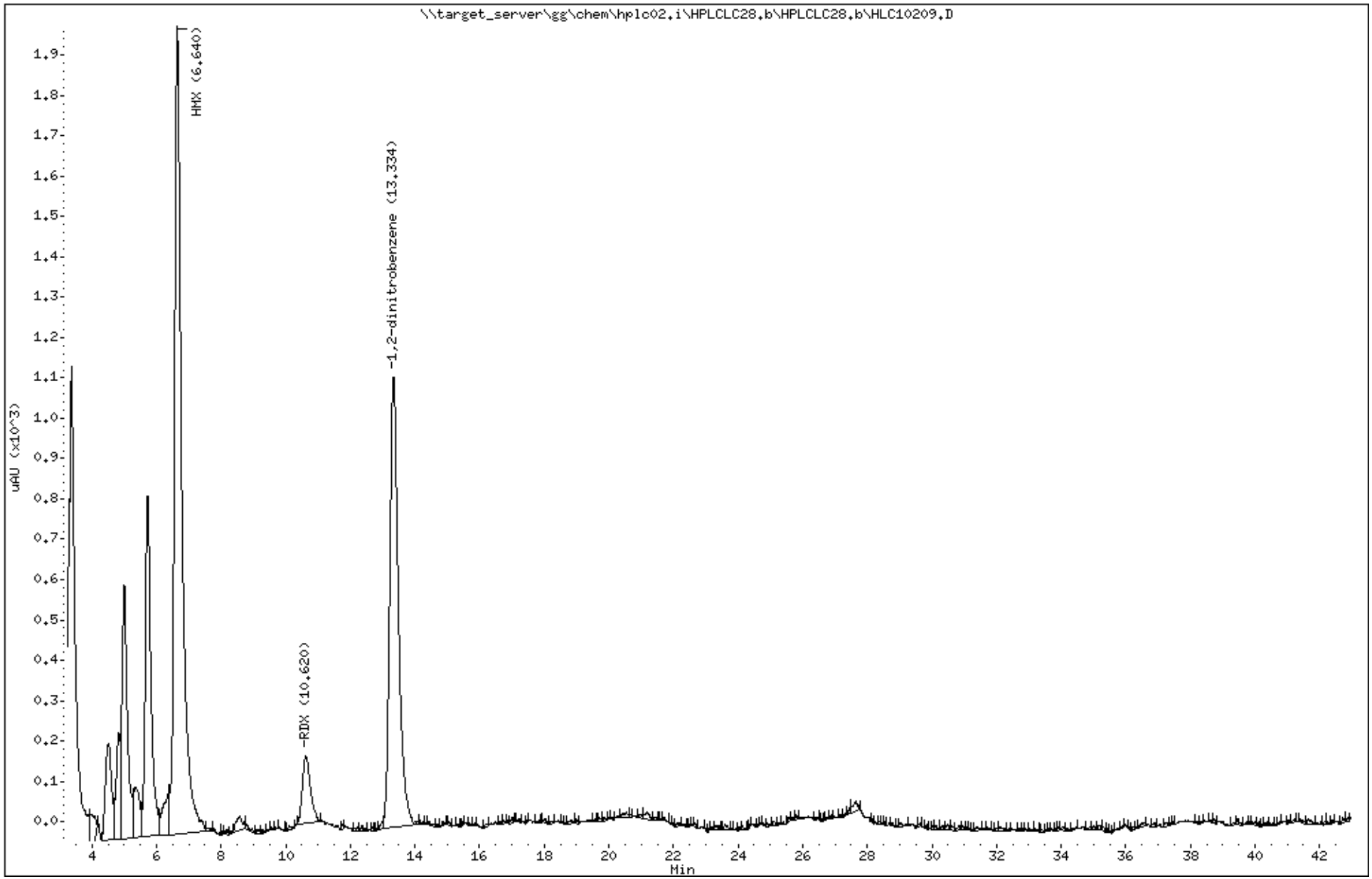
Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10209.D
Date : 28-MAR-2018 17:45
Client ID: CHAAP-20B-SB06-4
Sample Info: SL2133-12C

Instrument: hplc02.i

Operator: AC

Column phase: Acclaim Exp E2

Column diameter: 4.60



Katahdin Analytical Services 2000117

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-13
Client ID: CHAAP-20B-SB06-8
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10115.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 75.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		2200	ug/Kgdrywt	1	100	130	11.	65.
RDX		1500	ug/Kgdrywt	1	100	130	8.9	65.
1,3,5-Trinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
1,3-Dinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.1	65.
Tetryl	U	65	ug/Kgdrywt	1	100	130	7.0	65.
Nitrobenzene	U	65	ug/Kgdrywt	1	100	130	29.	65.
2,4,6-Trinitrotoluene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
2-Am-DNT	U	65	ug/Kgdrywt	1	100	130	27.	65.
4-Am-DNT	U	65	ug/Kgdrywt	1	100	130	22.	65.
2,6-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
2,4-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	20.	65.
2-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	16.	65.
3-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	10.	65.
4-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		86.3	%					

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REISSUE

Katahdin Analytical Services 2000118

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-13
Client Sample ID : CHAAP-20B-SB06-8

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 16:54

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 18:32

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	2240	
	B	6.64	2230	.4
RDX	A	4.98	1470	
	B	10.61	1540	4.7

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10115.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10115.D
Lab Smp Id: SL2133-13 Client Smp ID: CHAAP-20B-SB06-8
Inj Date : 22-MAR-2018 16:54
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-13
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 92
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

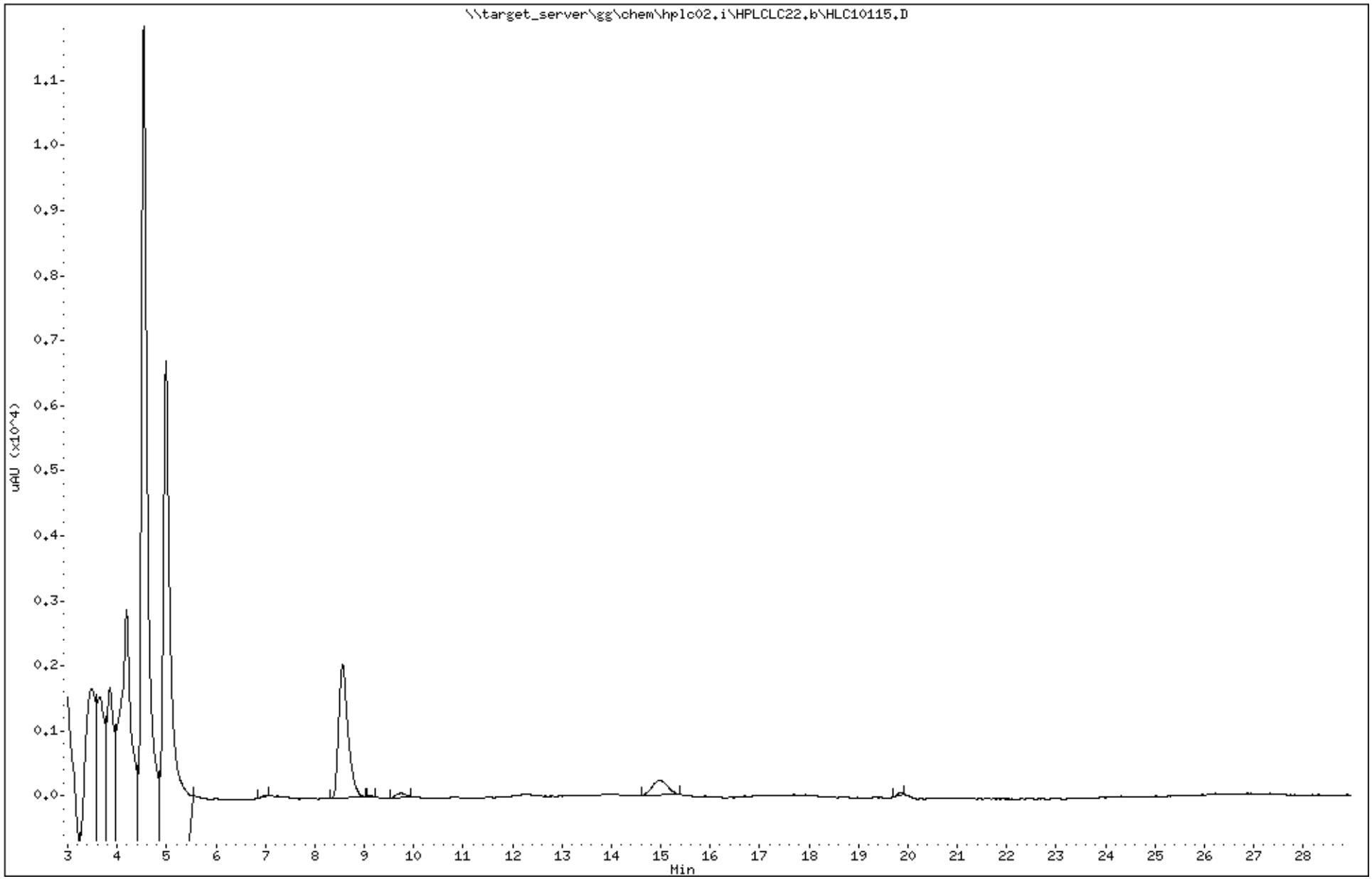
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	24.763	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10115.D
Date : 22-MAR-2018 16:54
Client ID: CHAAP-20B-SB06-8
Sample Info: SL2133-13

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000121
REISSUE

Data File: HLC10115.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10115.D
Lab Smp Id: SL2133-13 Client Smp ID: CHAAP-20B-SB06-8
Inj Date : 22-MAR-2018 16:54
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-13
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 92
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	24.763	% Moisture
Cpnd Variable		Local Compound Variable

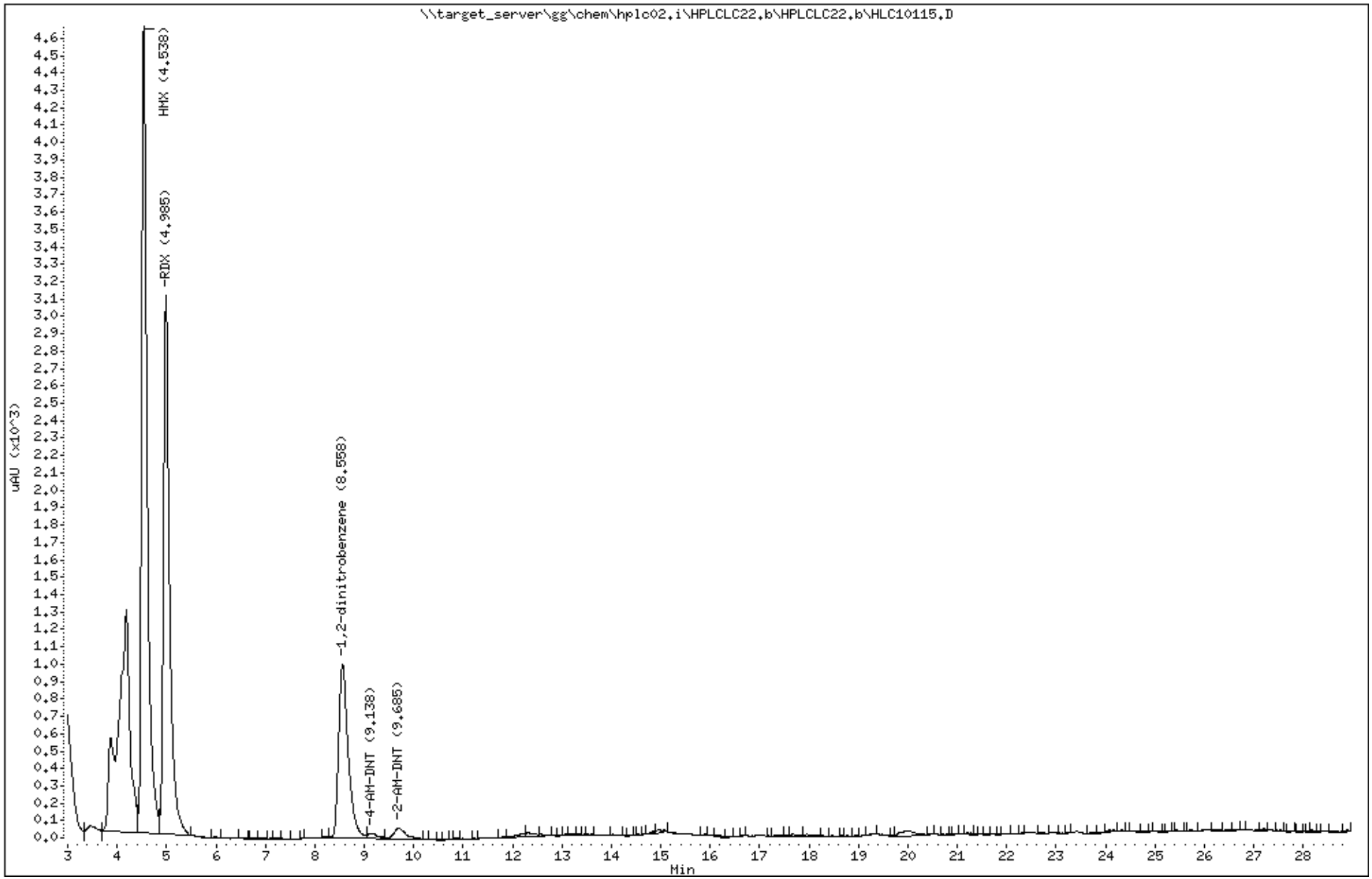
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.538	4.526	0.012	4640	0.86075	2240(M)	M2
4	RDX	4.984	4.973	0.011	3099	0.56407	1470(M)	M2
$ 2	1,2-dinitrobenzene	8.558	8.540	0.018	999	0.21589	563	
~~11~~	~~4-AM-DNT~~	~~9.138~~	~~9.106~~	~~0.032~~	~~28~~	~~0.00651~~	~~17.0(a)~~	NC
~~12~~	~~2-AM-DNT~~	~~9.684~~	~~9.660~~	~~0.024~~	~~60~~	~~0.01042~~	~~27.1(a)~~	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

10:26 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10115.D
Date : 22-MAR-2018 16:54
Client ID: CHAAP-20B-SB06-8
Instrument: hplc02.i
Sample Info: SL2133-13
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000123

REISSUE

Data File: HLC10210.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

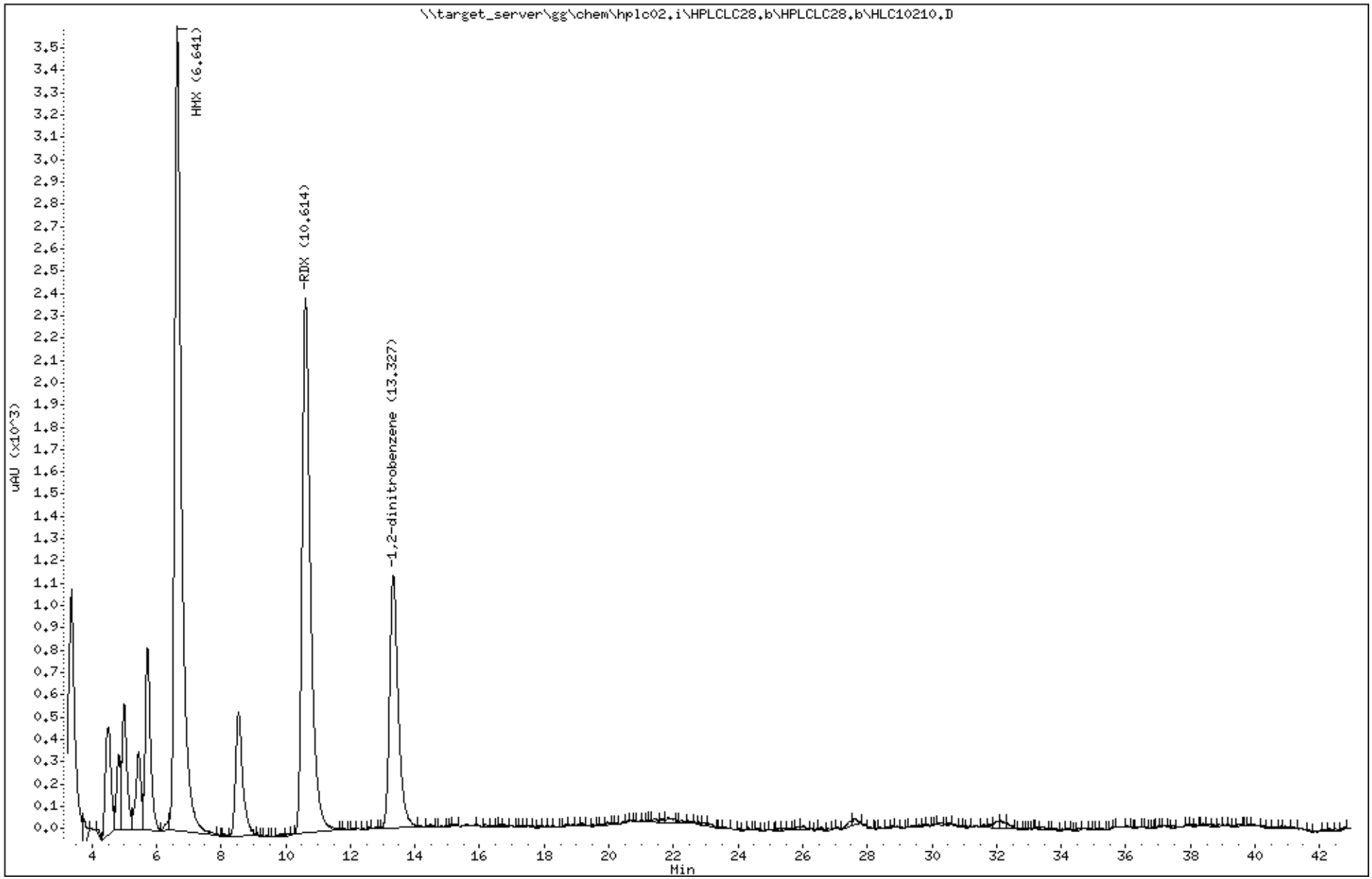
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10210.D
Lab Smp Id: SL2133-13C Client Smp ID: CHAAP-20B-SB06-8
Inj Date : 28-MAR-2018 18:32
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-13C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 36
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	24.763	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.640	6.639	0.001	3609	0.85530	2230	
4	RDX	10.613	10.606	0.007	2399	0.59146	1540	
$ 2	1,2-dinitrobenzene	13.327	13.299	0.028	1134	0.21225	553	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10210.D
Date : 28-MAR-2018 18:32
Client ID: CHAAP-20B-SB06-8
Instrument: hplc02.i
Sample Info: SL2133-13C
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000125

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-14
Client ID: CHAAP-20B-SS01
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10116.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 85.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		140	ug/Kgdrywt	1	100	120	10.	58.
RDX	J	28	ug/Kgdrywt	1	100	120	7.9	58.
1,3,5-Trinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.8	58.
1,3-Dinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.2	58.
Tetryl	U	58	ug/Kgdrywt	1	100	120	6.2	58.
Nitrobenzene	U	58	ug/Kgdrywt	1	100	120	25.	58.
2,4,6-Trinitrotoluene	U	58	ug/Kgdrywt	1	100	120	7.8	58.
2-Am-DNT	U	58	ug/Kgdrywt	1	100	120	24.	58.
4-Am-DNT	U	58	ug/Kgdrywt	1	100	120	20.	58.
2,6-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	31.	58.
2,4-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	17.	58.
2-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	14.	58.
3-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	9.1	58.
4-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	31.	58.
Nitroglycerin	U	460	ug/Kgdrywt	1	800	930	140	460
PETN	U	460	ug/Kgdrywt	1	800	930	120	460
1,2-Dinitrobenzene		85.5	%					

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http://www.katahdinlab.com

REISSUE

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-14
Client Sample ID : CHAAP-20B-SS01

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 17:25

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 20:07

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	139	
	B	6.64	112	21.5
RDX	A	4.98	27.8	
	B	10.57	28.9	3.9

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10116.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10116.D
Lab Smp Id: SL2133-14 Client Smp ID: CHAAP-20B-SS01
Inj Date : 22-MAR-2018 17:25
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-14
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 93
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	15.341	% Moisture
Cpnd Variable		Local Compound Variable

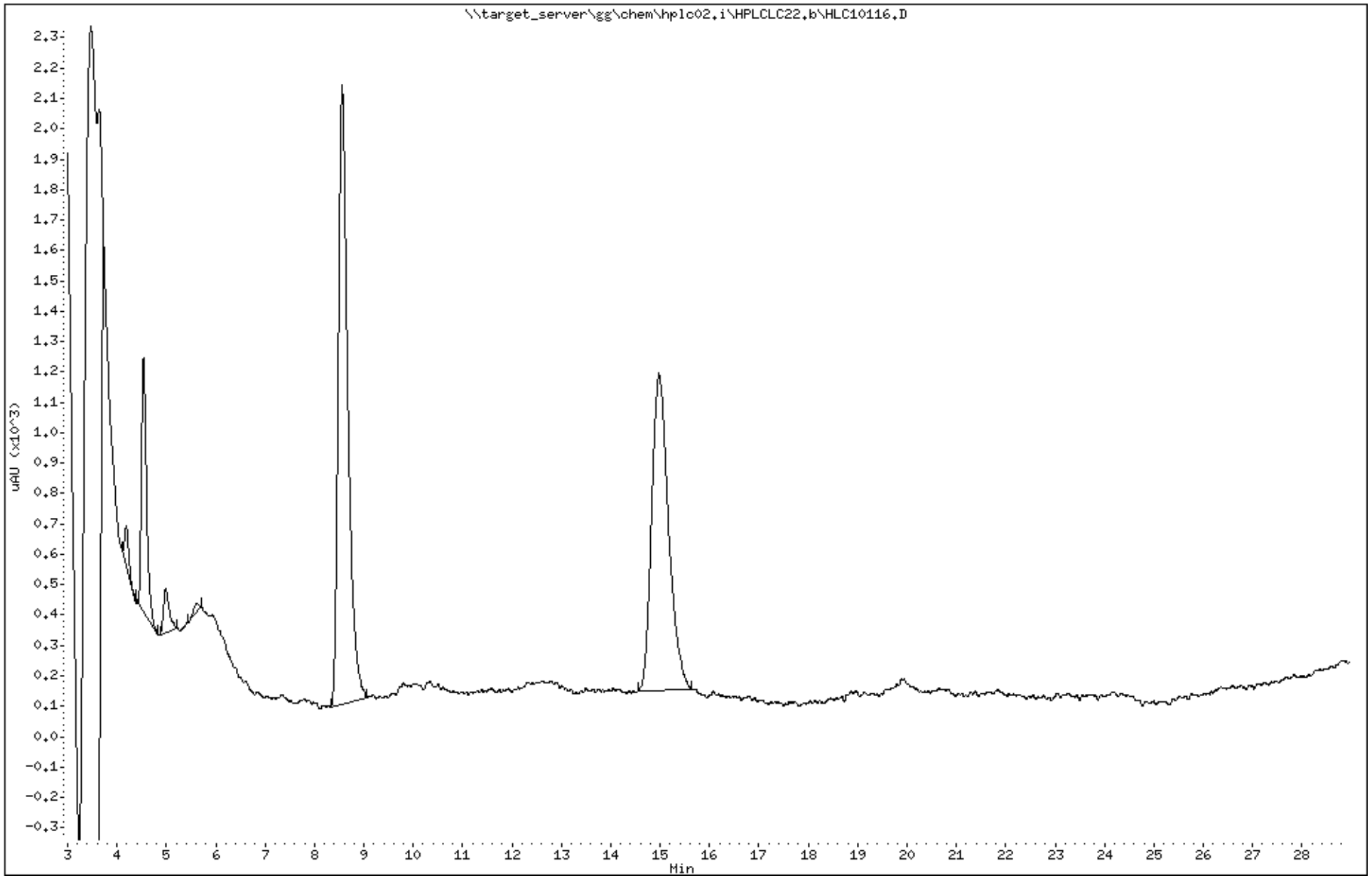
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10116.D
Date : 22-MAR-2018 17:25
Client ID: CHAAP-20B-SS01
Sample Info: SL2133-14

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000129
REISSUE

Data File: HLC10116.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10116.D
Lab Smp Id: SL2133-14 Client Smp ID: CHAAP-20B-SS01
Inj Date : 22-MAR-2018 17:25
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-14
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 93
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	15.341	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.536	4.526	0.010	323	0.05992	139	
4	RDX	4.976	4.973	0.003	34	0.01200	27.8(a)	
$ 2	1,2-dinitrobenzene	8.563	8.540	0.023	989	0.21373	495	

QC Flag Legend

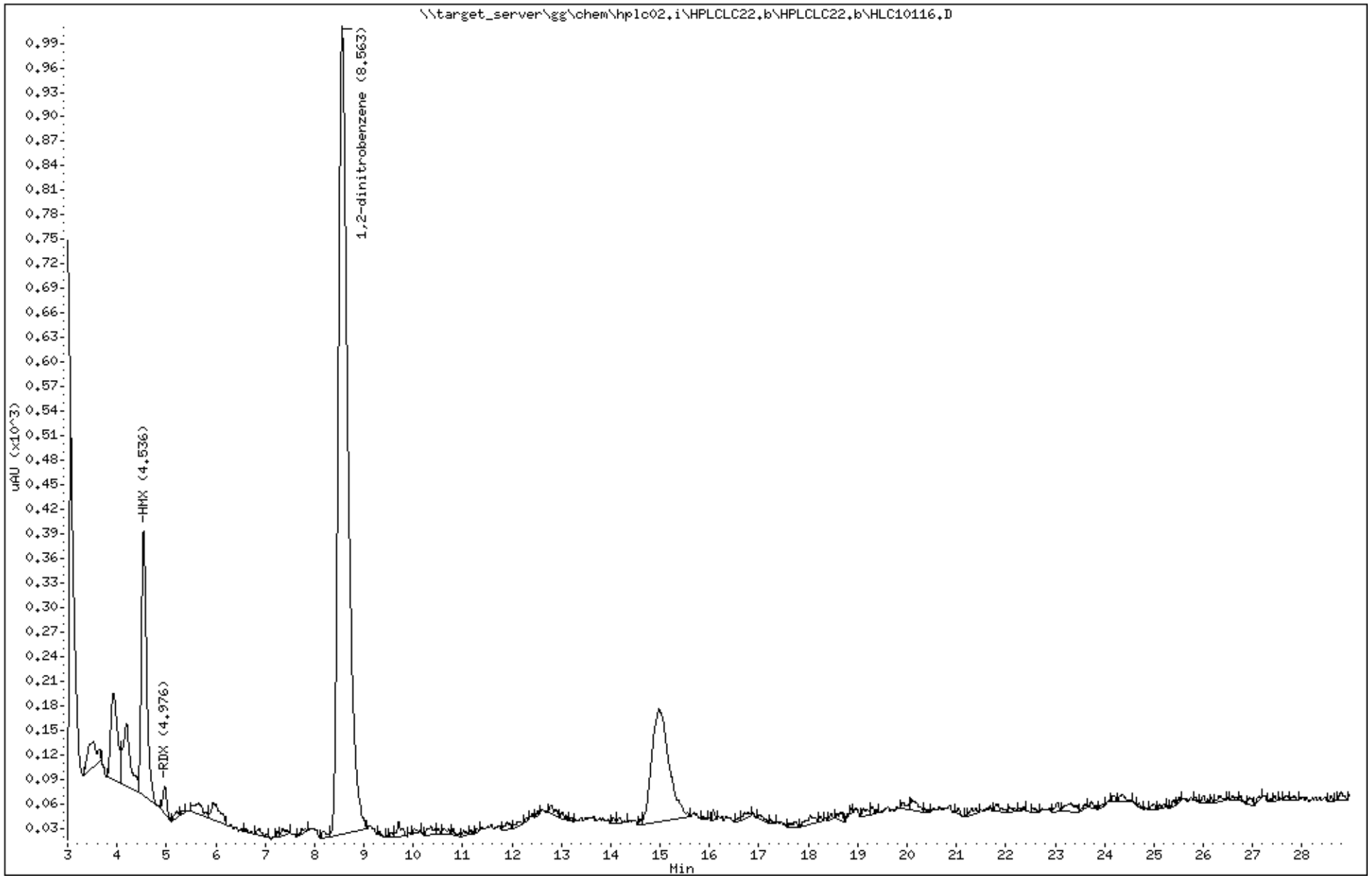
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10116.D
Date : 22-MAR-2018 17:25
Client ID: CHAAP-20B-SS01
Sample Info: SL2133-14

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000131

REISSUE

Data File: HLC10212.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10212.D
Lab Smp Id: SL2133-14C Client Smp ID: CHAAP-20B-SS01
Inj Date : 28-MAR-2018 20:07
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-14C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 38
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	15.341	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.640	6.639	0.001	221	0.04856	112(aM)	M2
4	RDX	10.567	10.606	-0.039	42	0.01247	28.9(aM)	M9
$ 2	1,2-dinitrobenzene	13.320	13.299	0.021	1120	0.20960	485	

AAB
10:27 am, Apr 02, 2018

QC Flag Legend

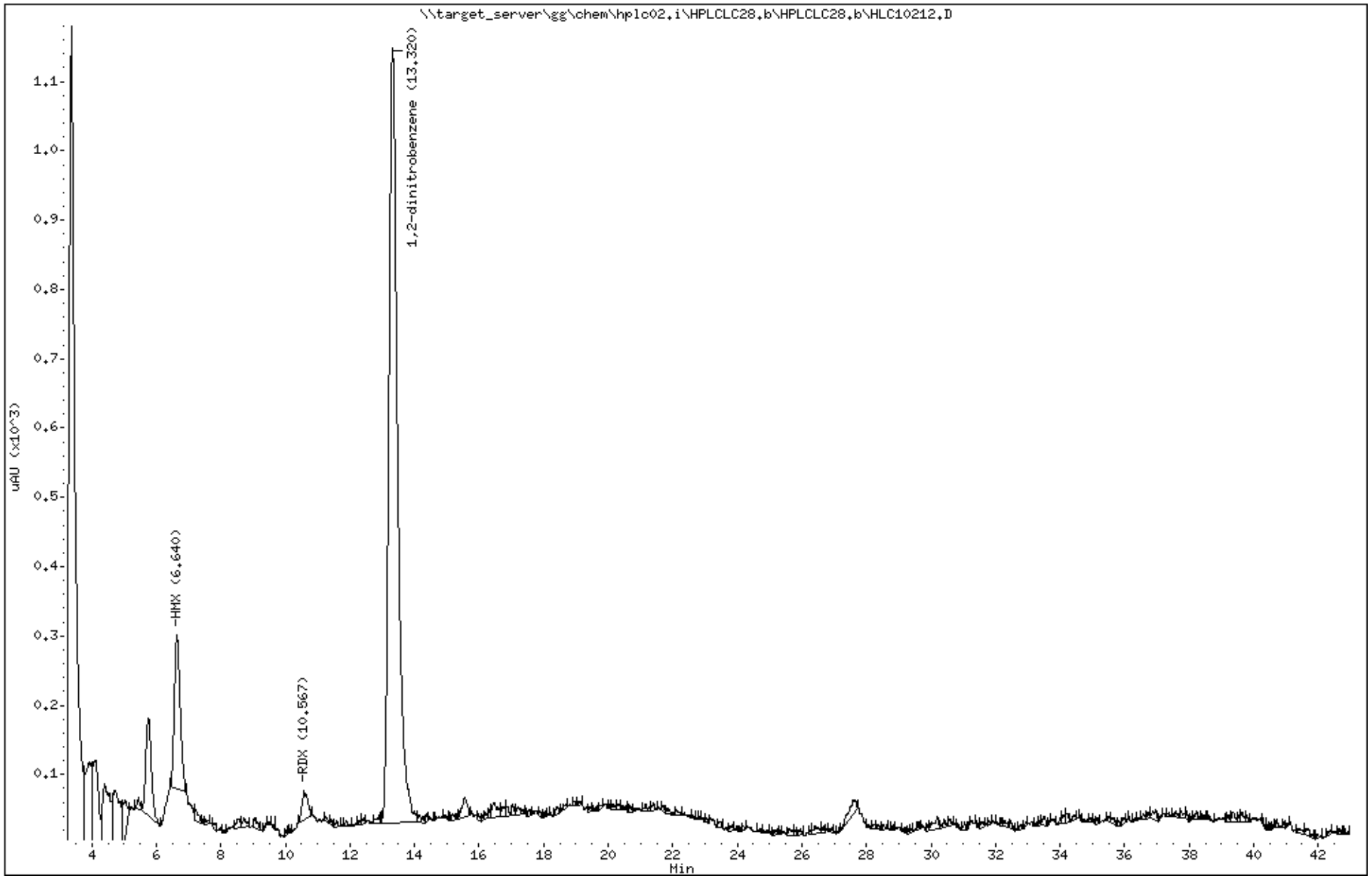
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10212.D
Date : 28-MAR-2018 20:07
Client ID: CHAAP-20B-SS01
Sample Info: SL2133-14C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000133

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-15
Client ID: CHAAP-20B-SS02
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10117.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 80.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		420	ug/Kgdrywt	1	100	120	10.	58.
RDX		700	ug/Kgdrywt	1	100	120	8.0	58.
1,3,5-Trinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.8	58.
1,3-Dinitrobenzene	U	58	ug/Kgdrywt	1	100	120	7.3	58.
Tetryl	U	58	ug/Kgdrywt	1	100	120	6.3	58.
Nitrobenzene	U	58	ug/Kgdrywt	1	100	120	26.	58.
2,4,6-Trinitrotoluene	J	45	ug/Kgdrywt	1	100	120	7.8	58.
2-Am-DNT	J	72	ug/Kgdrywt	1	100	120	25.	58.
4-Am-DNT	JJ	110	ug/Kgdrywt	1	100	120	20.	58.
2,6-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	32.	58.
2,4-Dinitrotoluene	U	58	ug/Kgdrywt	1	100	120	18.	58.
2-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	14.	58.
3-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	9.2	58.
4-Nitrotoluene	U	58	ug/Kgdrywt	1	100	120	32.	58.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	140	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		83.8	%					

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REISSUE **Katahdin Analytical Services 2000134**

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-15
Client Sample ID : CHAAP-20B-SS02

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 17:57

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 20:54

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	415	
	B	6.63	340	19.9
RDX	A	4.99	704	
	B	10.61	736	4.4
2,4,6-Trinitrotoluene	A	26.42	45.4	
	B	18.79	38.9	15.4
2-Am-DNT	A	9.7	71.6	
	B	32.11	52.5	30.8
4-Am-DNT	A	9.14	113	
	B	30.31	74.2	41.5

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10117.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10117.D
Lab Smp Id: SL2133-15 Client Smp ID: CHAAP-20B-SS02
Inj Date : 22-MAR-2018 17:57
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-15
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 94
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01060	Weight of Sample (Kg)
M	19.483	% Moisture
Cpnd Variable		Local Compound Variable

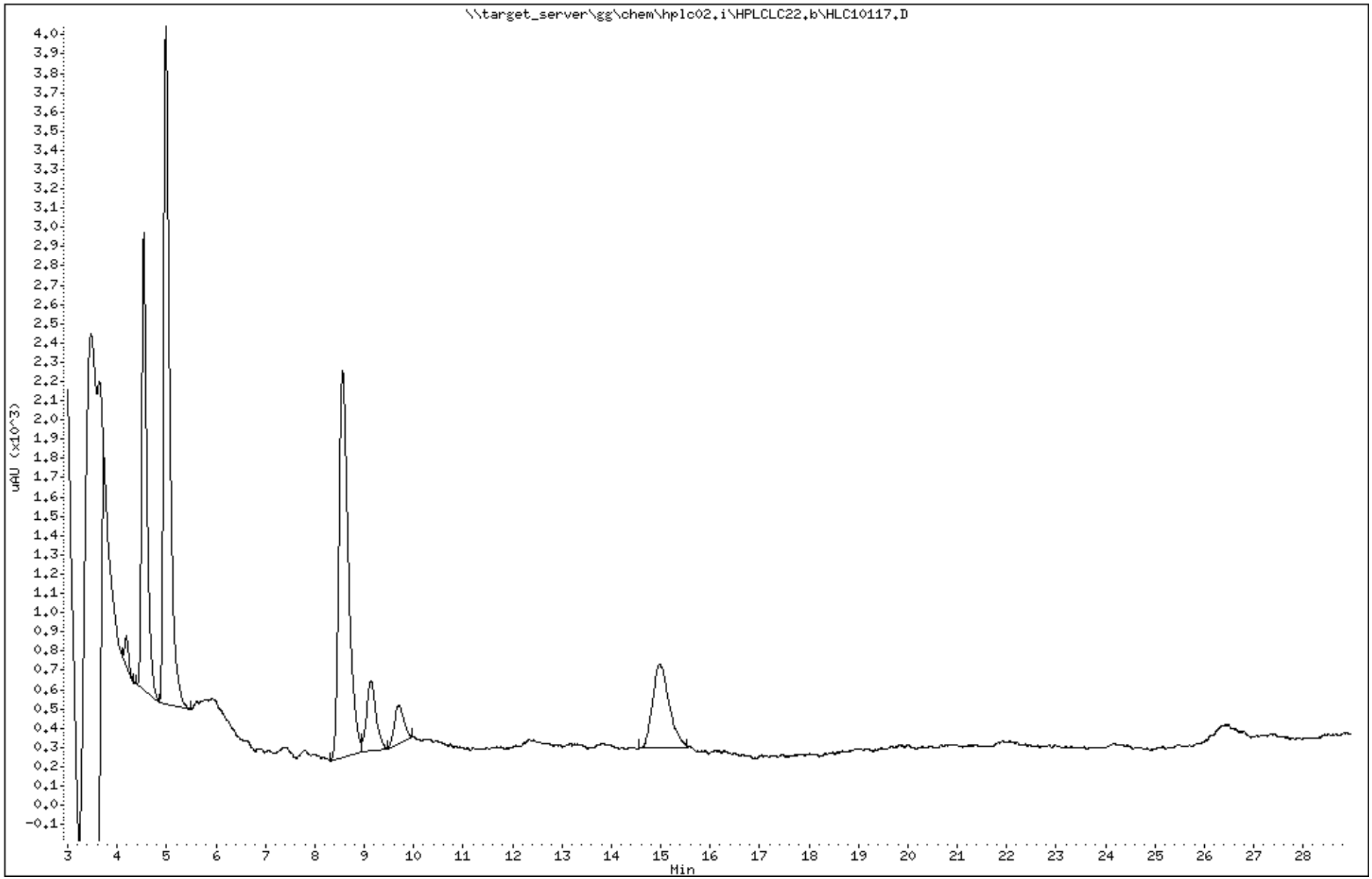
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10117.D
Date : 22-MAR-2018 17:57
Client ID: CHAAP-20B-SS02
Sample Info: SL2133-15

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000137

REISSUE

Data File: HLC10117.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10117.D
Lab Smp Id: SL2133-15 Client Smp ID: CHAAP-20B-SS02
Inj Date : 22-MAR-2018 17:57
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-15
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 94
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01060	Weight of Sample (Kg)
M	19.483	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.541	4.526	0.015	954	0.17697	415	
4	RDX	4.988	4.973	0.015	1636	0.30055	704	
$ 2	1,2-dinitrobenzene	8.561	8.540	0.021	970	0.20962	491	
11	4-AM-DNT	9.141	9.106	0.035	207	0.04811	113(a)	
12	2-AM-DNT	9.695	9.660	0.035	176	0.03055	71.6(a)	
10	2,4,6-trinitrotoluene	26.415	26.340	0.075	49	0.01940	45.4(aMH)	M9

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

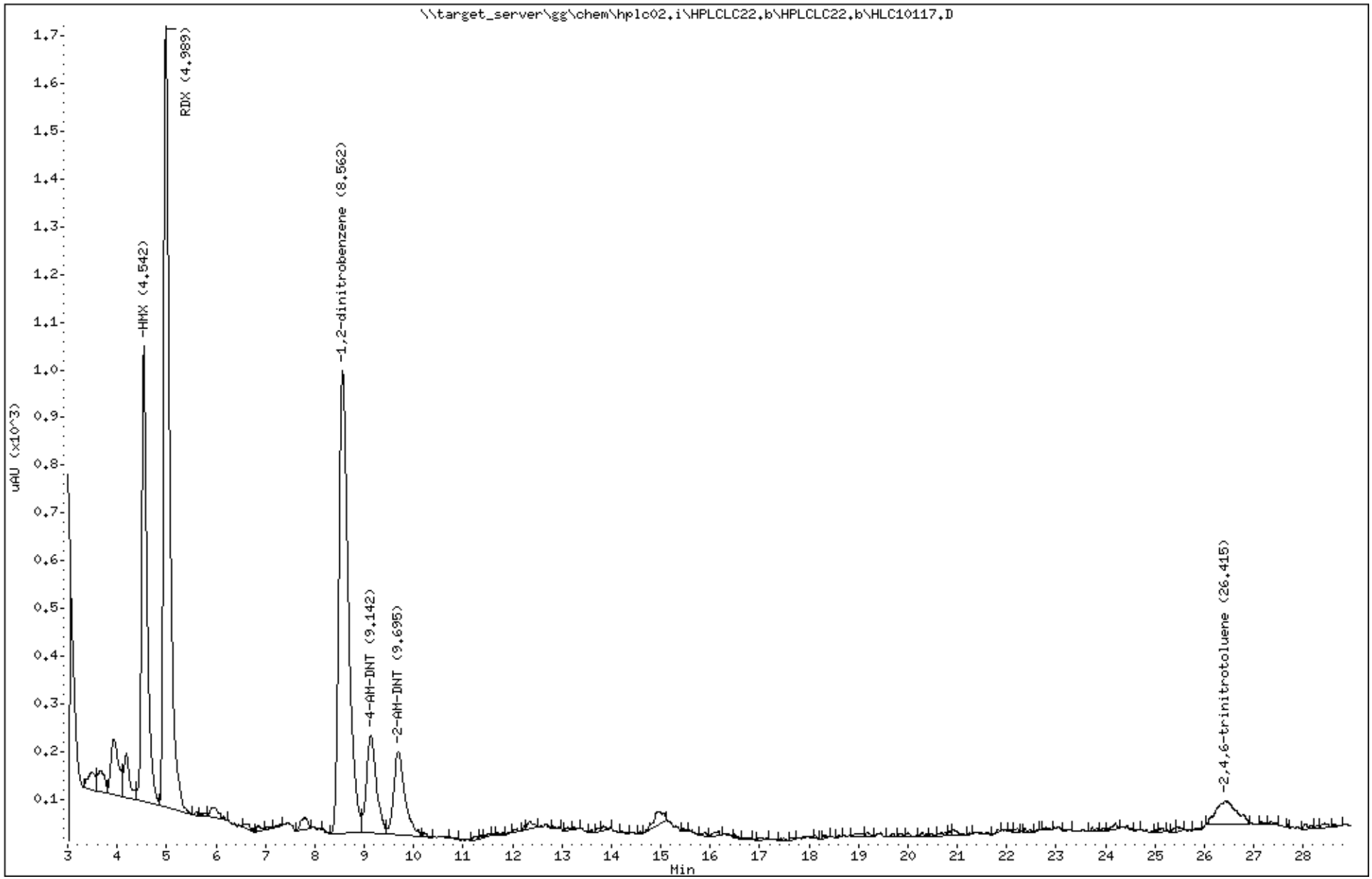
10:27 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10117.D
Date : 22-MAR-2018 17:57
Client ID: CHAAP-20B-SS02
Sample Info: SL2133-15

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000139

REISSUE

Data File: HLC10213.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10213.D
Lab Smp Id: SL2133-15C Client Smp ID: CHAAP-20B-SS02
Inj Date : 28-MAR-2018 20:54
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-15C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 39
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01060	Weight of Sample (Kg)
M	19.483	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.632	6.639	-0.007	626	0.14500	340(M)	M2
4	RDX	10.612	10.606	0.006	1269	0.31388	736	
$ 2	1,2-dinitrobenzene	13.318	13.299	0.019	1103	0.20638	484	
10	2,4,6-trinitrotoluene	18.785	18.726	0.059	138	0.01661	38.9(a)	
11	4-AM-DNT	30.305	30.266	0.039	110	0.03167	74.2(a)	
12	2-AM-DNT	32.105	32.046	0.059	97	0.02242	52.5(aM)	M9

10:27 am, Apr 02, 2018

QC Flag Legend

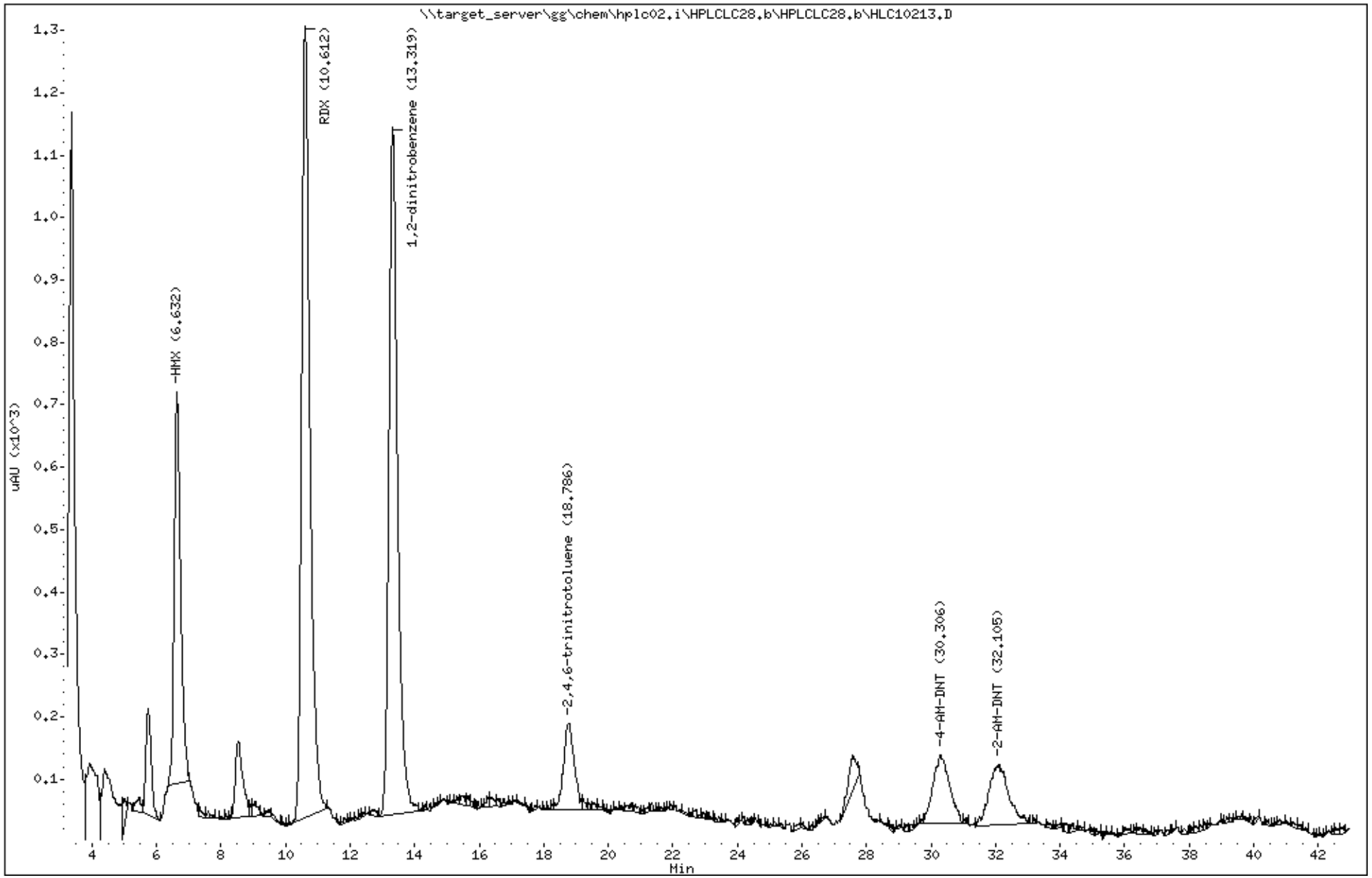
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10213.D
Date : 28-MAR-2018 20:54
Client ID: CHAAP-20B-SS02
Sample Info: SL2133-15C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000141

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-16
Client ID: CHAAP-20B-SS03
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10118.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		600	ug/Kgdrywt	1	100	130	11.	65.
RDX	J	71	ug/Kgdrywt	1	100	130	8.8	65.
1,3,5-Trinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.7	65.
1,3-Dinitrobenzene	U	65	ug/Kgdrywt	1	100	130	8.0	65.
Tetryl	U	65	ug/Kgdrywt	1	100	130	7.0	65.
Nitrobenzene	U	65	ug/Kgdrywt	1	100	130	28.	65.
2,4,6-Trinitrotoluene	J	72	ug/Kgdrywt	1	100	130	8.7	65.
2-Am-DNT	J	48	ug/Kgdrywt	1	100	130	27.	65.
4-Am-DNT	J	150	ug/Kgdrywt	1	100	130	22.	65.
2,6-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
2,4-Dinitrotoluene	U	65	ug/Kgdrywt	1	100	130	19.	65.
2-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	16.	65.
3-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	10.	65.
4-Nitrotoluene	U	65	ug/Kgdrywt	1	100	130	35.	65.
Nitroglycerin	U	520	ug/Kgdrywt	1	800	1000	160	520
PETN	U	520	ug/Kgdrywt	1	800	1000	140	520
1,2-Dinitrobenzene		86.1	%					

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REISSUE **Katahdin Analytical Services 2000142**

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-16
Client Sample ID : CHAAP-20B-SS03

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 18:29

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 21:41

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	598	
	B	6.63	562	6.2
RDX	A	4.98	70.7	
	B	10.63	79.4	11.6
2,4,6-Trinitrotoluene	A	26.33	71.8	
	B	18.75	69.9	2.7
2-Am-DNT	A	9.7	47.6	
	B	32.12	35.9	28
4-Am-DNT	A	9.13	146	
	B	30.23	94.1	43.2

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10118.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10118.D
Lab Smp Id: SL2133-16 Client Smp ID: CHAAP-20B-SS03
Inj Date : 22-MAR-2018 18:29
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-16
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 95
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	22.772	% Moisture
Cpnd Variable		Local Compound Variable

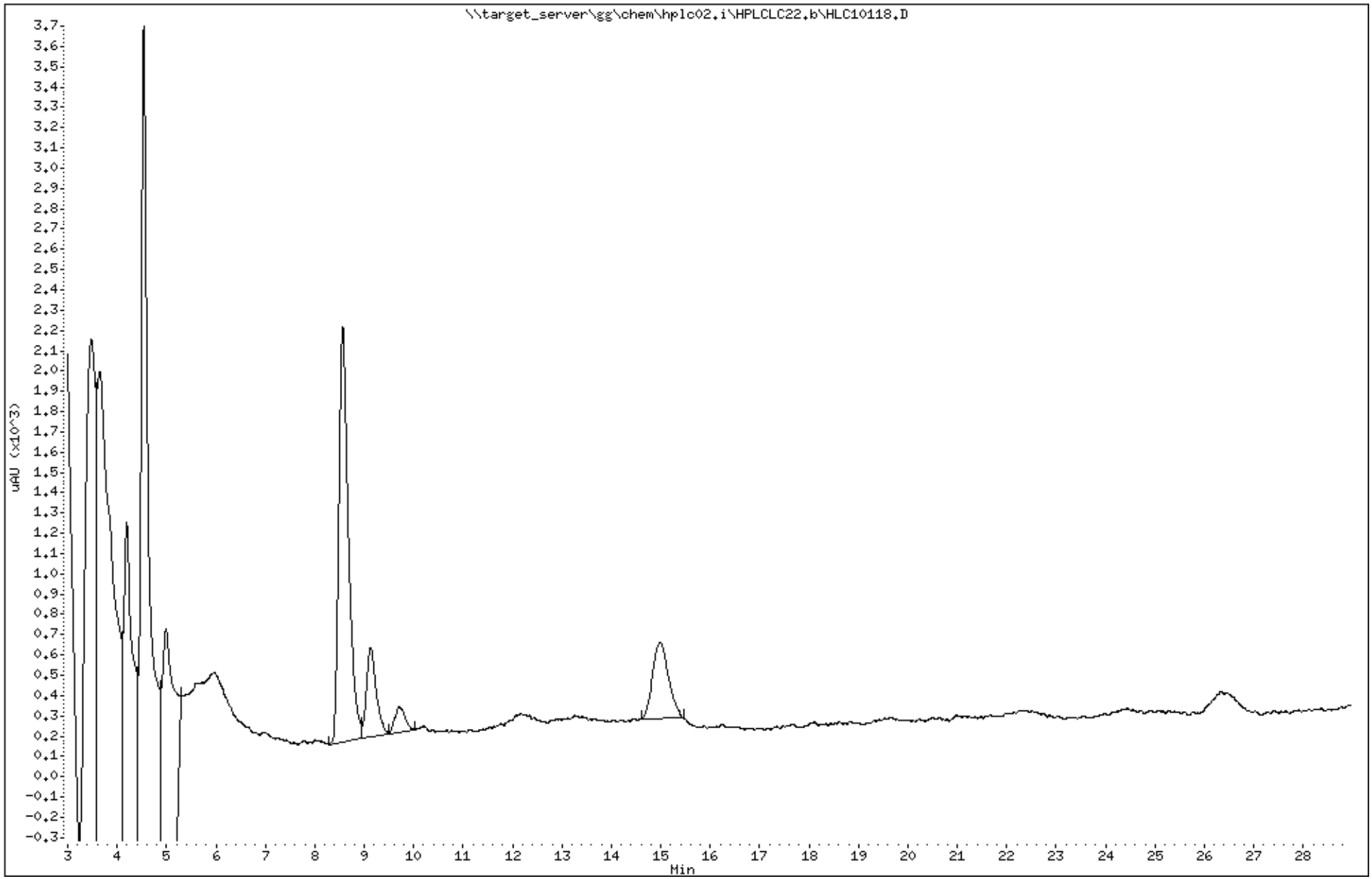
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10118.D
Date : 22-MAR-2018 18:29
Client ID: CHAAP-20B-SS03
Sample Info: SL2133-16

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000145

REISSUE

Data File: HLC10118.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10118.D
Lab Smp Id: SL2133-16 Client Smp ID: CHAAP-20B-SS03
Inj Date : 22-MAR-2018 18:29
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-16
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 95
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	22.772	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.537	4.526	0.011	1246	0.23114	598	
4	RDX	4.977	4.973	0.004	119	0.02731	70.7(a)	
$ 2	1,2-dinitrobenzene	8.564	8.540	0.024	996	0.21524	557	
11	4-AM-DNT	9.131	9.106	0.025	242	0.05624	146(a)	
12	2-AM-DNT	9.704	9.660	0.044	106	0.01840	47.6(a)	
10	2,4,6-trinitrotoluene	26.331	26.340	-0.009	70	0.02771	71.8(aM)	M9

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

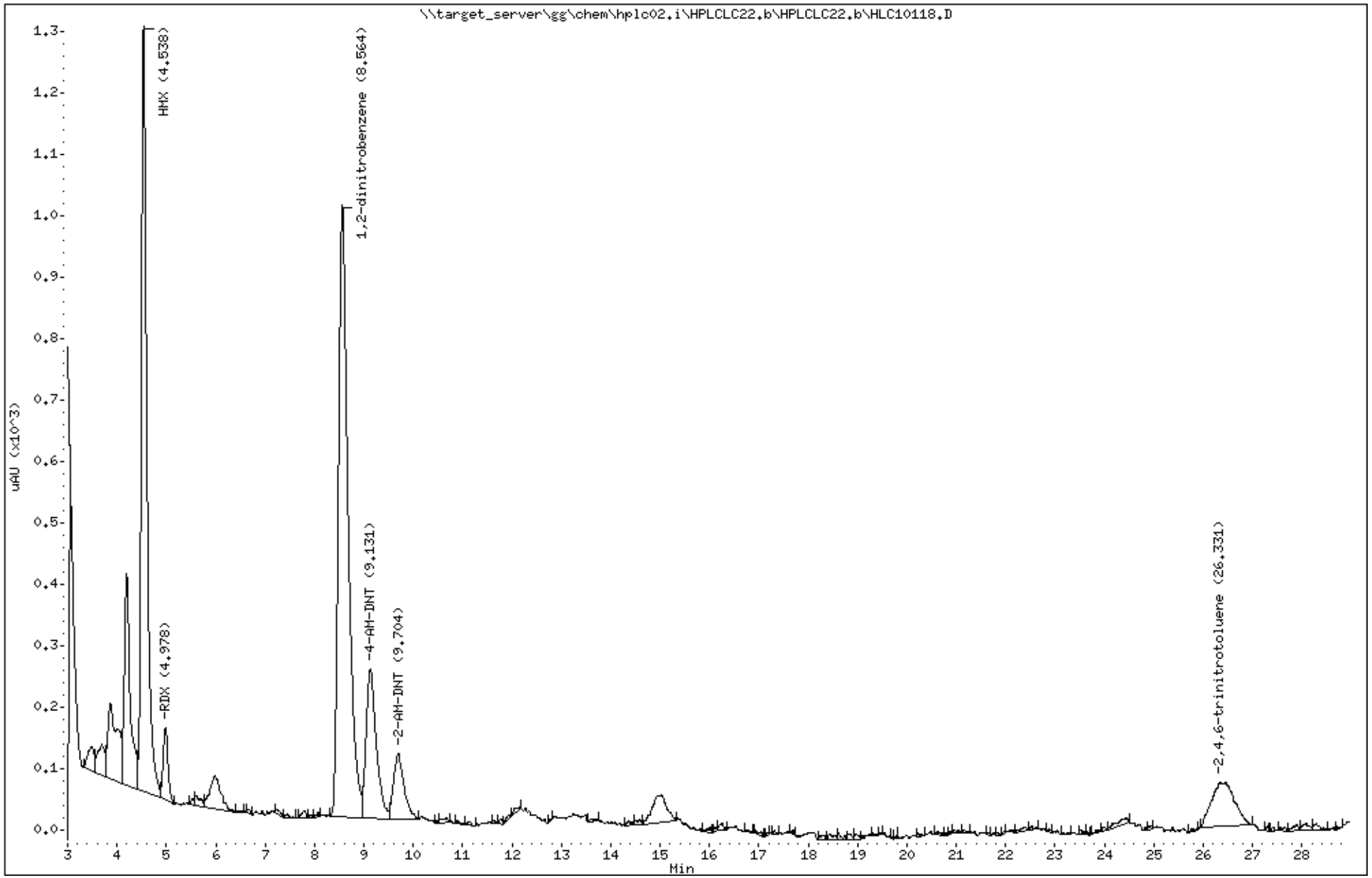
10:29 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10118.D
Date : 22-MAR-2018 18:29
Client ID: CHAAP-20B-SS03
Sample Info: SL2133-16

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000147

REISSUE

Data File: HLC10214.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10214.D
Lab Smp Id: SL2133-16C Client Smp ID: CHAAP-20B-SS03
Inj Date : 28-MAR-2018 21:41
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-16C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 40
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	22.772	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.633	6.639	-0.006	928	0.21691	562(M)	M2
4	RDX	10.627	10.606	0.021	116	0.03065	79.4(a)	
$ 2	1,2-dinitrobenzene	13.313	13.299	0.014	1114	0.20846	540	
10	2,4,6-trinitrotoluene	18.753	18.726	0.027	202	0.02700	69.9(a)	
11	4-AM-DNT	30.233	30.266	-0.033	121	0.03634	94.1(aM)	M6
12	2-AM-DNT	32.120	32.046	0.074	70	0.01386	35.9(aM)	M9

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

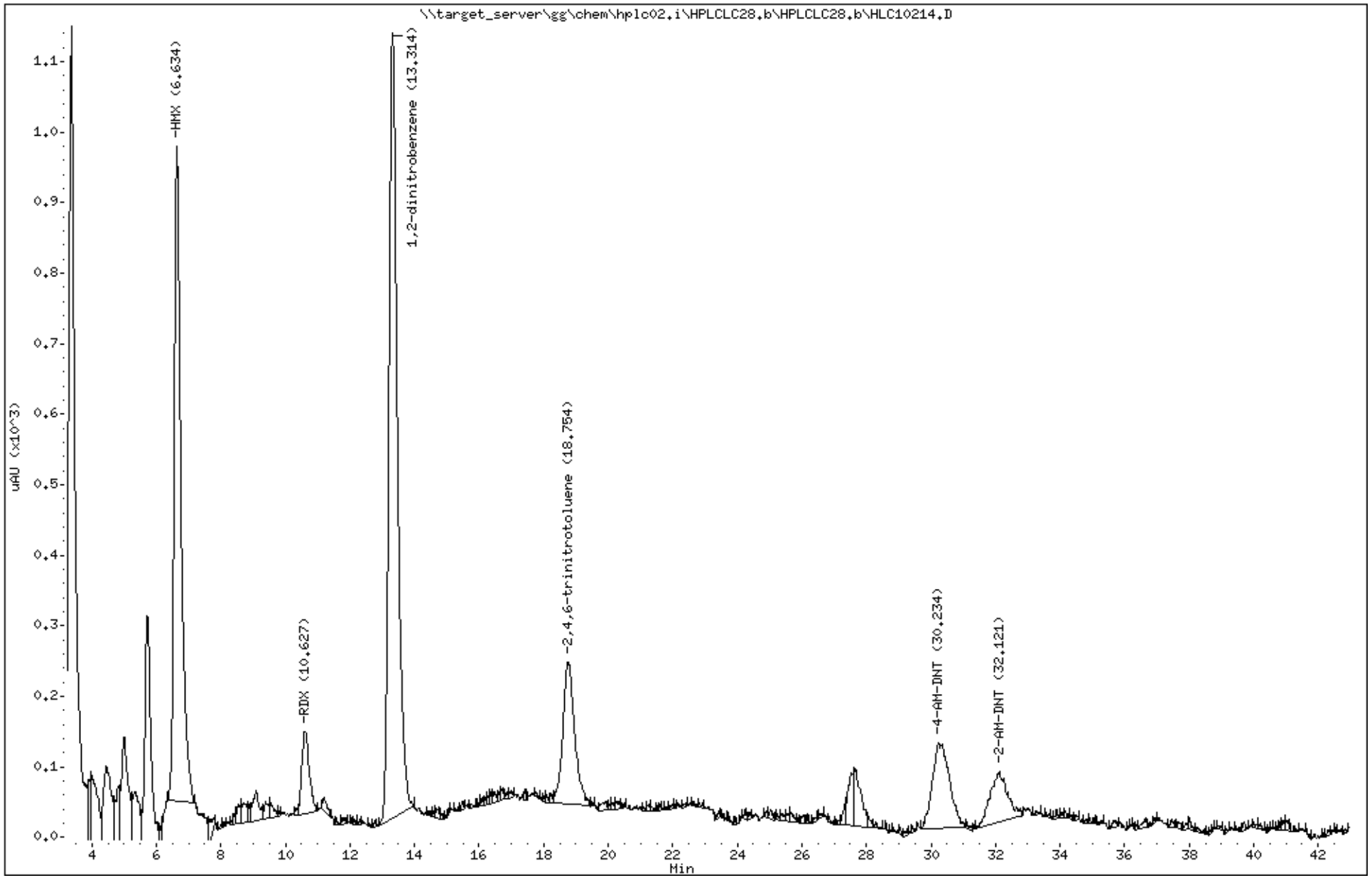
10:29 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10214.D
Date : 28-MAR-2018 21:41
Client ID: CHAAP-20B-SS03
Sample Info: SL2133-16C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000149

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-17
Client ID: CHAAP-20B-SS04
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10119.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	93	ug/Kgdrywt	1	100	110	9.8	57.
RDX	J	22	ug/Kgdrywt	1	100	110	7.8	57.
1,3,5-Trinitrobenzene	U	57	ug/Kgdrywt	1	100	110	7.6	57.
1,3-Dinitrobenzene	U	57	ug/Kgdrywt	1	100	110	7.1	57.
Tetryl	U	57	ug/Kgdrywt	1	100	110	6.2	57.
Nitrobenzene	U	57	ug/Kgdrywt	1	100	110	25.	57.
2,4,6-Trinitrotoluene	JJ	23	ug/Kgdrywt	1	100	110	7.6	57.
2-Am-DNT	U	57	ug/Kgdrywt	1	100	110	24.	57.
4-Am-DNT	U	57	ug/Kgdrywt	1	100	110	19.	57.
2,6-Dinitrotoluene	U	57	ug/Kgdrywt	1	100	110	31.	57.
2,4-Dinitrotoluene	U	57	ug/Kgdrywt	1	100	110	17.	57.
2-Nitrotoluene	U	57	ug/Kgdrywt	1	100	110	14.	57.
3-Nitrotoluene	U	57	ug/Kgdrywt	1	100	110	9.0	57.
4-Nitrotoluene	U	57	ug/Kgdrywt	1	100	110	31.	57.
Nitroglycerin	U	460	ug/Kgdrywt	1	800	910	140	460
PETN	U	460	ug/Kgdrywt	1	800	910	120	460
1,2-Dinitrobenzene		83.3	%					

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REISSUE

Katahdin Analytical Services 2000150

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-17
Client Sample ID : CHAAP-20B-SS04

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 19:01

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 22:28

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	92.7	
	B	6.63	89.6	3.4
RDX	A	4.96	22.4	
	B	10.6	16.7	29.2
2,4,6-Trinitrotoluene	A	26.42	22.6	
	B	18.73	14.9	41.1

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Tel:(207) 874-2400 Fax:(207) 775-4029

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sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10119.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10119.D
Lab Smp Id: SL2133-17 Client Smp ID: CHAAP-20B-SS04
Inj Date : 22-MAR-2018 19:01
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-17
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 96
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01120	Weight of Sample (Kg)
M	21.711	% Moisture
Cpnd Variable		Local Compound Variable

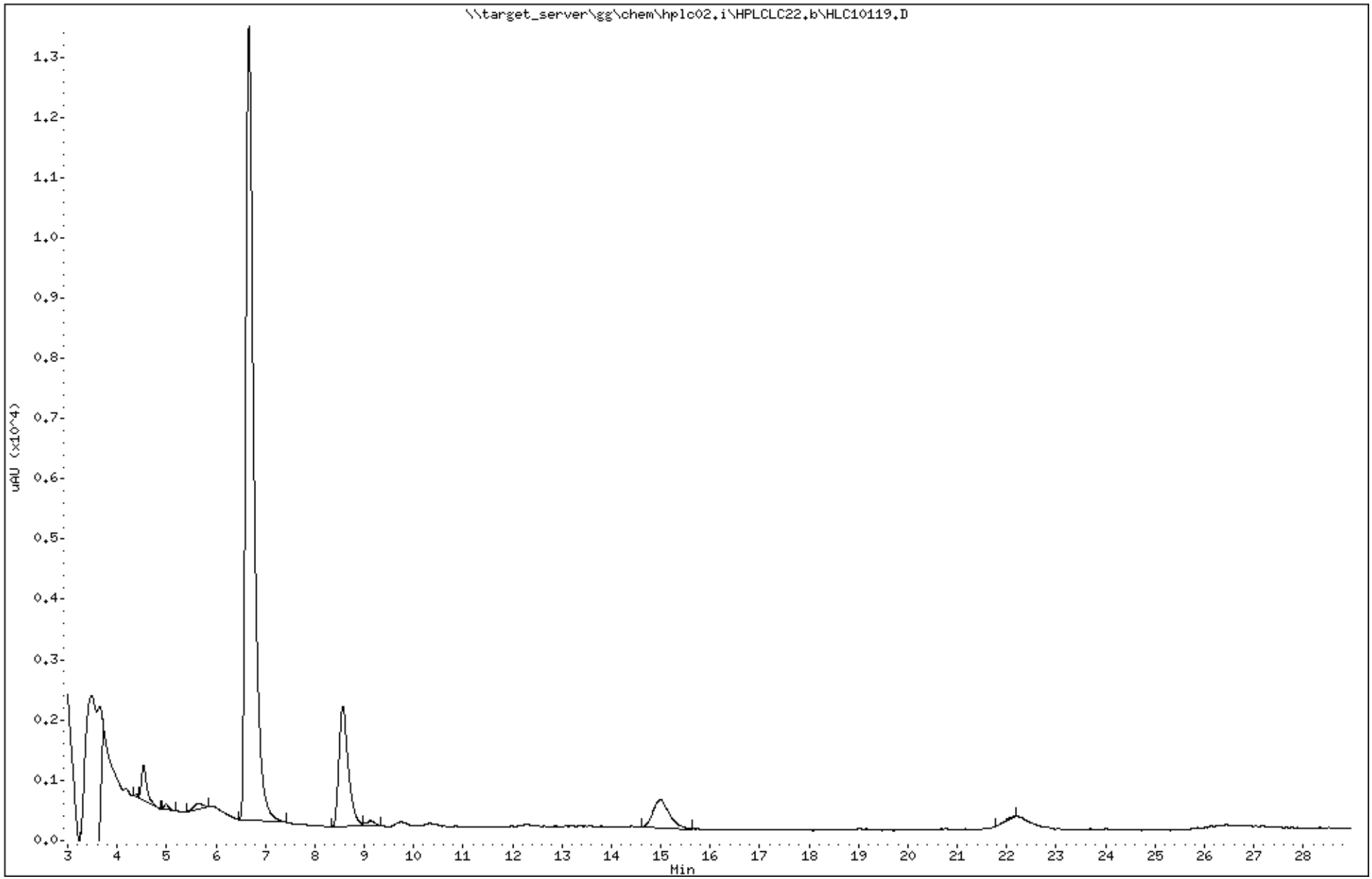
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10119.D
Date : 22-MAR-2018 19:01
Client ID: CHAAP-20B-SS04
Sample Info: SL2133-17

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000153

REISSUE

Data File: HLC10119.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10119.D
Lab Smp Id: SL2133-17 Client Smp ID: CHAAP-20B-SS04
Inj Date : 22-MAR-2018 19:01
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-17
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 96
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01120	Weight of Sample (Kg)
M	21.711	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.538	4.526	0.012	219	0.04063	92.7(a)	
4	RDX	4.958	4.973	-0.015	22	0.00984	22.4(aM)	M9
$ 2	1,2-dinitrobenzene	8.565	8.540	0.025	964	0.20832	475	
~~11~~	~~4-AM-DNT~~	~~9.131~~	~~9.106~~	~~0.025~~	~~51~~	~~0.01185~~	~~27.0(a)~~	NC
~~12~~	~~2-AM-DNT~~	~~9.685~~	~~9.660~~	~~0.025~~	~~49~~	~~0.00851~~	~~19.4(a)~~	
10	2,4,6-trinitrotoluene	26.418	26.340	0.078	25	0.00990	22.6(aM)	M6

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

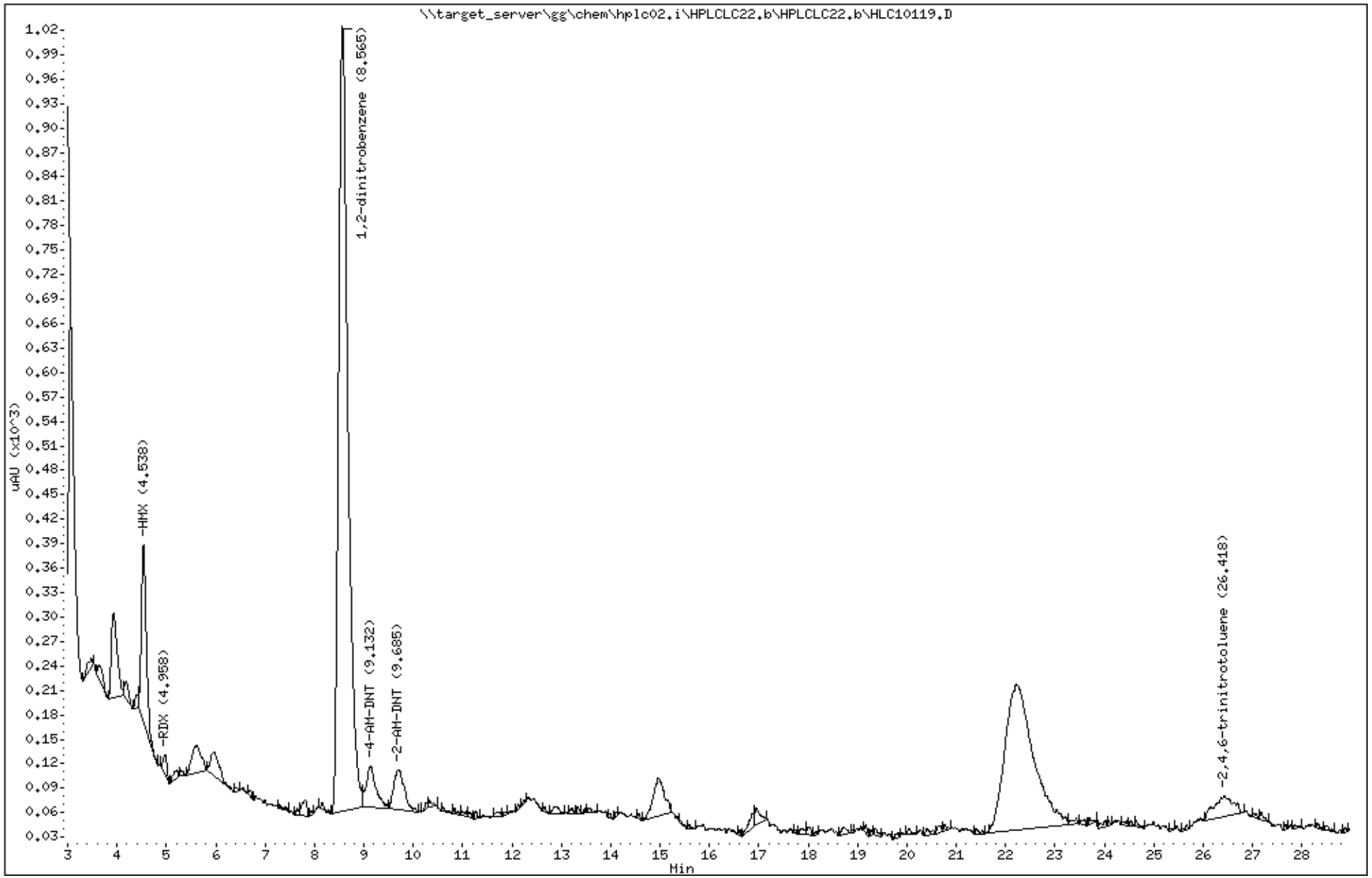
10:30 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10119.D
Date : 22-MAR-2018 19:01
Client ID: CHAAP-20B-SS04
Sample Info: SL2133-17

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000155

REISSUE

Data File: HLC10215.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10215.D
Lab Smp Id: SL2133-17C Client Smp ID: CHAAP-20B-SS04
Inj Date : 28-MAR-2018 22:28
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-17C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 41
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01120	Weight of Sample (Kg)
M	21.711	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.630	6.639	-0.009	182	0.03927	89.6(aM)	M2
4	RDX	10.597	10.606	-0.009	21	0.00731	16.7(aM)	M2
$ 2	1,2-dinitrobenzene	13.330	13.299	0.031	1296	0.24289	554	
10	2,4,6-trinitrotoluene	18.730	18.726	0.004	76	0.00655	14.9(aM)	M6

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

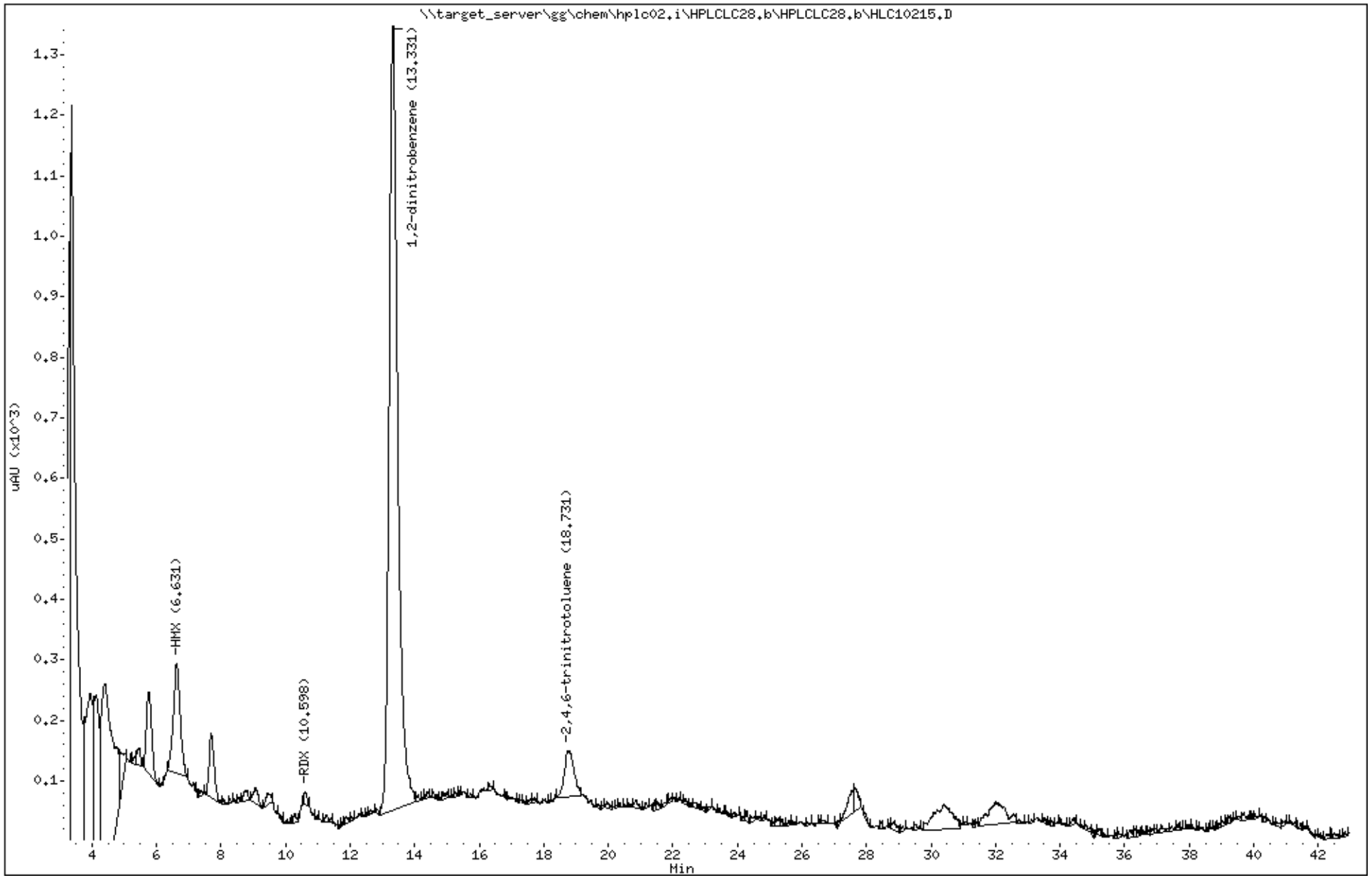
10:30 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10215.D
Date : 28-MAR-2018 22:28
Client ID: CHAAP-20B-SS04
Sample Info: SL2133-17C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000157

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-18
Client ID: CHAAP-20B-SS05
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10120.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 77.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	75	ug/Kgdrywt	1	100	130	11.	64.
RDX	U	64	ug/Kgdrywt	1	100	130	8.6	64.
1,3,5-Trinitrobenzene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
1,3-Dinitrobenzene	U	64	ug/Kgdrywt	1	100	130	7.9	64.
Tetryl	U	64	ug/Kgdrywt	1	100	130	6.9	64.
Nitrobenzene	U	64	ug/Kgdrywt	1	100	130	28.	64.
2,4,6-Trinitrotoluene	U	64	ug/Kgdrywt	1	100	130	8.5	64.
2-Am-DNT	U	64	ug/Kgdrywt	1	100	130	27.	64.
4-Am-DNT	U	64	ug/Kgdrywt	1	100	130	22.	64.
2,6-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
2,4-Dinitrotoluene	U	64	ug/Kgdrywt	1	100	130	19.	64.
2-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	15.	64.
3-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	10.	64.
4-Nitrotoluene	U	64	ug/Kgdrywt	1	100	130	34.	64.
Nitroglycerin	U	510	ug/Kgdrywt	1	800	1000	160	510
PETN	U	510	ug/Kgdrywt	1	800	1000	140	510
1,2-Dinitrobenzene		83.3	%					

600 Technology Way
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http://www.katahdinlab.com

REISSUE **Katahdin Analytical Services 2000158**

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-18
Client Sample ID : CHAAP-20B-SS05

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 19:33

Column B
Instrument ID : HPLC02
Date Analyzed : 03/28/18
Time Analyzed : 23:15

Analyte	Column	RT	Concentration	RPD
HMX	A	4.53	75.1	
	B	6.63	55.7	29.7

600 Technology Way
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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10120.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10120.D
Lab Smp Id: SL2133-18 Client Smp ID: CHAAP-20B-SS05
Inj Date : 22-MAR-2018 19:33
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-18
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 97
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	22.955	% Moisture
Cpnd Variable		Local Compound Variable

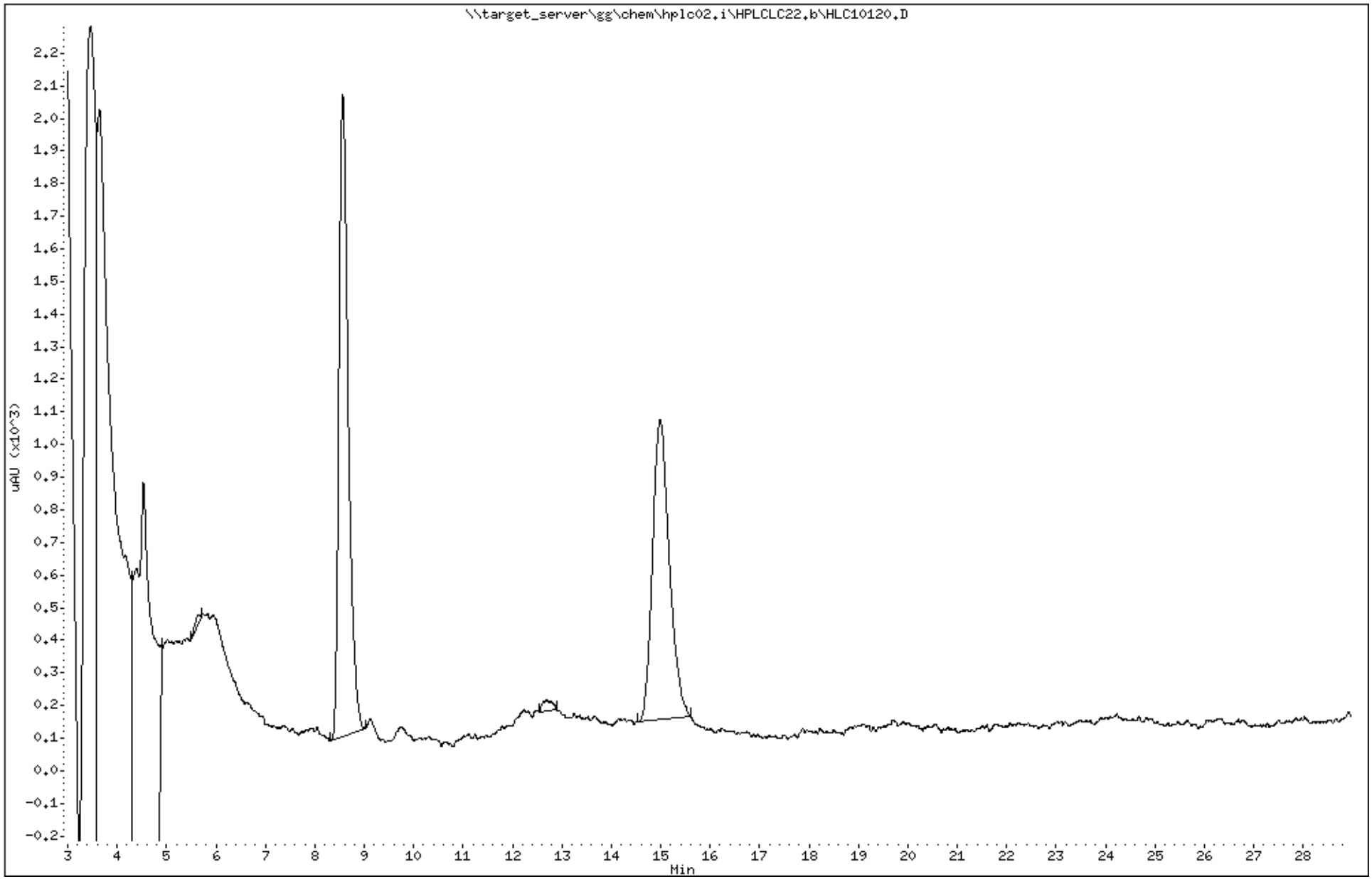
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10120.D
Date : 22-MAR-2018 19:33
Client ID: CHAAP-20B-SS05
Sample Info: SL2133-18

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000161

REISSUE

Data File: HLC10120.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10120.D
Lab Smp Id: SL2133-18 Client Smp ID: CHAAP-20B-SS05
Inj Date : 22-MAR-2018 19:33
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-18
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 97
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	22.955	% Moisture
Cpnd Variable		Local Compound Variable

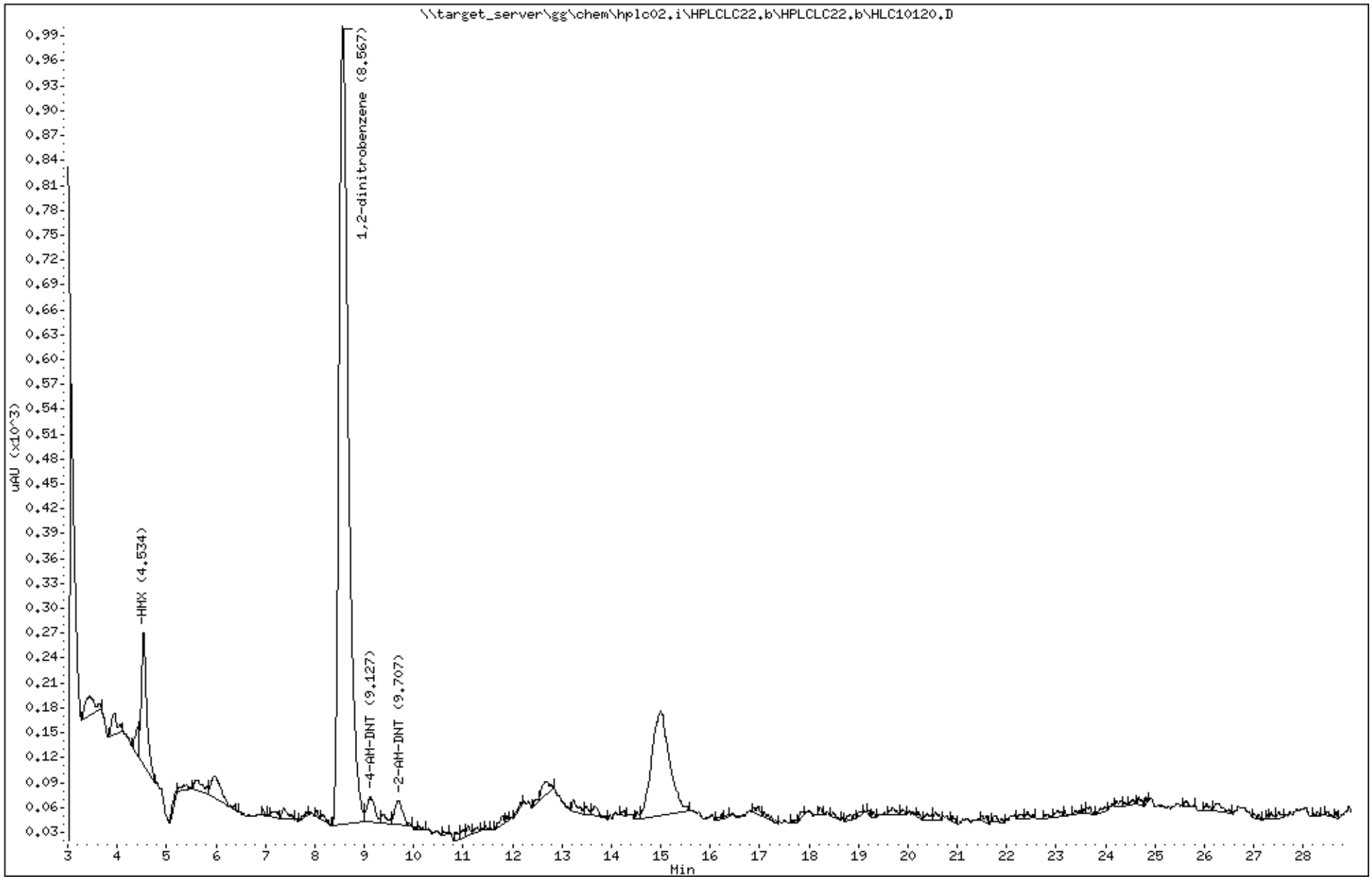
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.533	4.526	0.007	159	0.02950	75.1(aM)	M9
$ 2	1,2-dinitrobenzene	8.567	8.540	0.027	963	0.20811	530	
~~11~~	~~4-AM-DNT~~	~~9.127~~	~~9.106~~	~~0.021~~	~~30~~	~~0.00697~~	~~17.7(a)~~	NC
~~12~~	~~2-AM-DNT~~	~~9.707~~	~~9.660~~	~~0.047~~	~~29~~	~~0.00503~~	~~12.8(a)~~	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

10:31 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10120.D
Date : 22-MAR-2018 19:33
Client ID: CHAAP-20B-SS05
Instrument: hplc02.i
Sample Info: SL2133-18
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000163

REISSUE

Data File: HLC10216.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10216.D
Lab Smp Id: SL2133-18C Client Smp ID: CHAAP-20B-SS05
Inj Date : 28-MAR-2018 23:15
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-18C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 42
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	22.955	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.631	6.639	-0.008	109	0.02189	55.7(aM)	M2
$ 2	1,2-dinitrobenzene	13.325	13.299	0.026	1117	0.20903	532	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

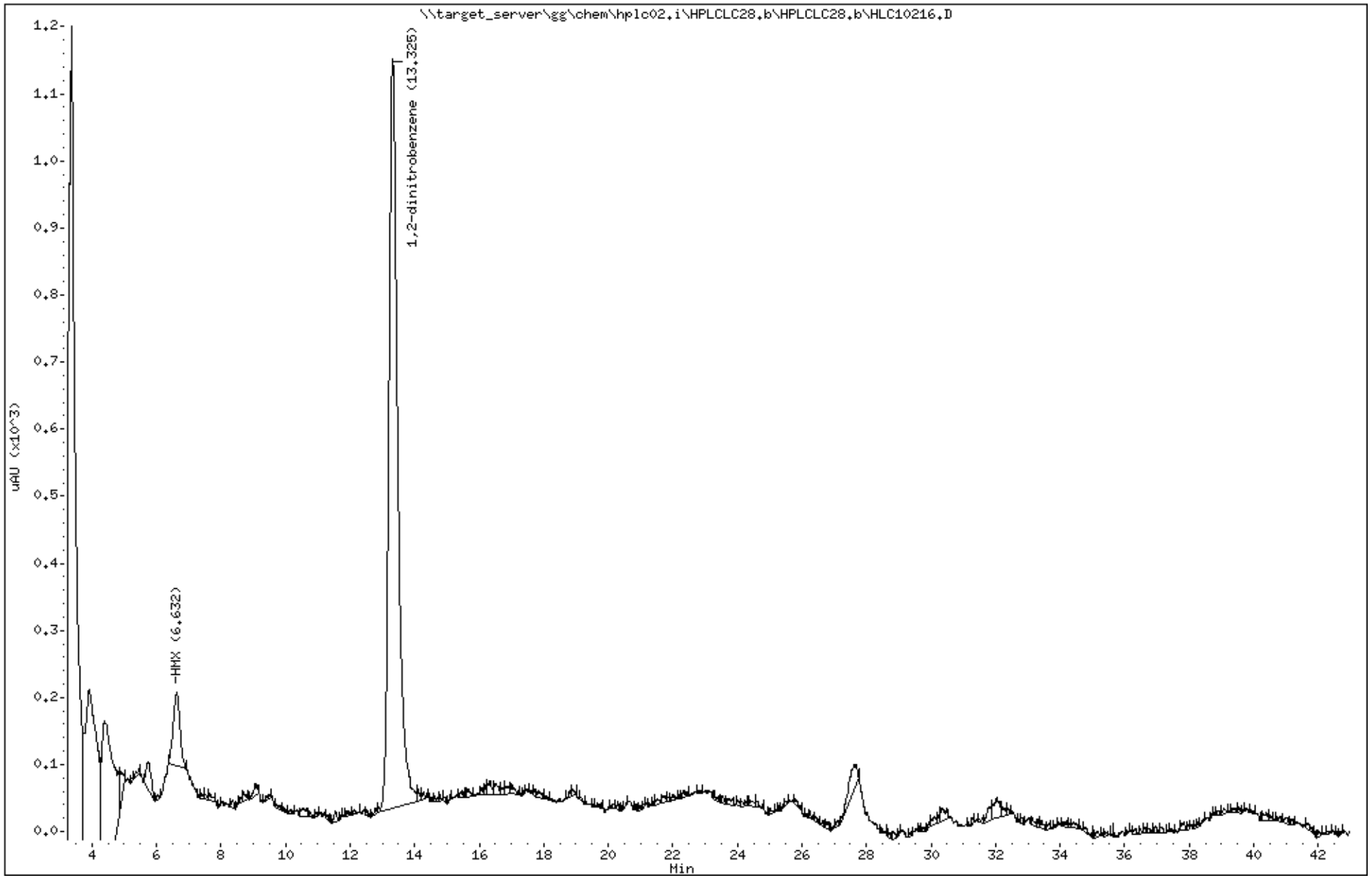
10:31 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10216.D
Date : 28-MAR-2018 23:15
Client ID: CHAAP-20B-SS05
Sample Info: SL2133-18C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000165

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10121.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		400	ug/Kgdrywt	1	100	120	11.	62.
RDX		140	ug/Kgdrywt	1	100	120	8.5	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.7	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.7	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene		120	ug/Kgdrywt	1	100	120	8.4	62.
2-Am-DNT	J	100	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT		190	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.9	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	34.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	1000	150	500
PETN	U	500	ug/Kgdrywt	1	800	1000	130	500
1,2-Dinitrobenzene		86.2	%					

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REISSUE **Katahdin Analytical Services 2000166**

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-19
Client Sample ID : CHAAP-20B-SS06

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 20:04

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 00:02

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	395	
	B	6.64	355	10.7
RDX	A	4.98	136	
	B	10.6	175	25.1
2,4,6-Trinitrotoluene	A	26.42	124	
	B	18.78	113	9.3
2-Am-DNT	A	9.7	100	
	B	32.08	83.7	17.7
4-Am-DNT	A	9.13	187	
	B	30.27	137	30.9

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10121.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10121.D
Lab Smp Id: SL2133-19 Client Smp ID: CHAAP-20B-SS06
Inj Date : 22-MAR-2018 20:04
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-19
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 98
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

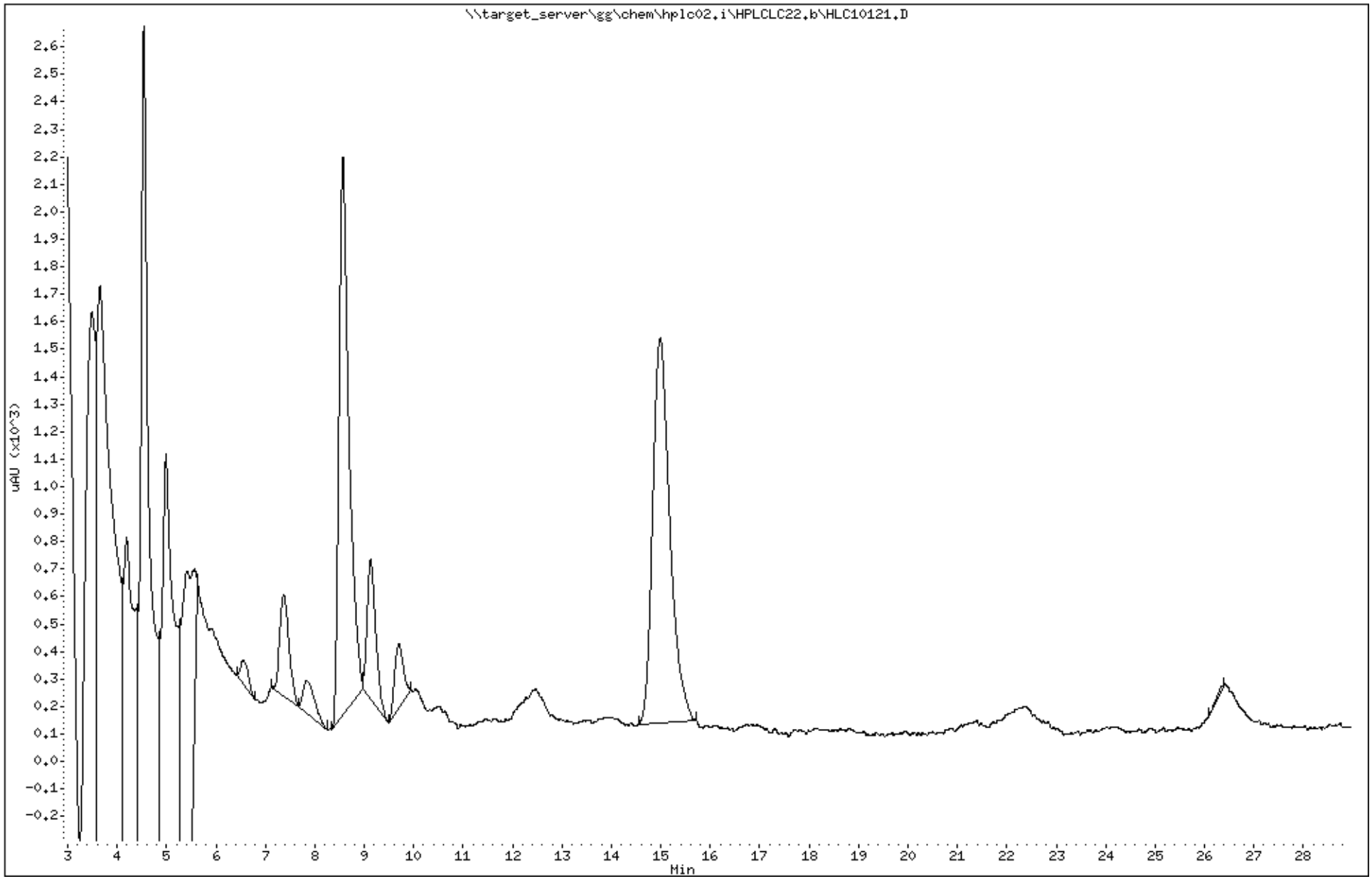
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10121.D
Date : 22-MAR-2018 20:04
Client ID: CHAAP-20B-SS06
Sample Info: SL2133-19

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000169

REISSUE

Data File: HLC10121.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10121.D
Lab Smp Id: SL2133-19 Client Smp ID: CHAAP-20B-SS06
Inj Date : 22-MAR-2018 20:04
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-19
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 98
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.537	4.526	0.011	853	0.15824	395(M)	M3
4	RDX	4.983	4.973	0.010	271	0.05469	136(aM)	M2
$ 2	1,2-dinitrobenzene	8.563	8.540	0.023	997	0.21545	538	
11	4-AM-DNT	9.130	9.106	0.024	323	0.07507	187(a)	
12	2-AM-DNT	9.703	9.660	0.043	231	0.04010	100(a)	
10	2,4,6-trinitrotoluene	26.423	26.340	0.083	126	0.04987	124(a)	

10:32 am, Apr 02, 2018

QC Flag Legend

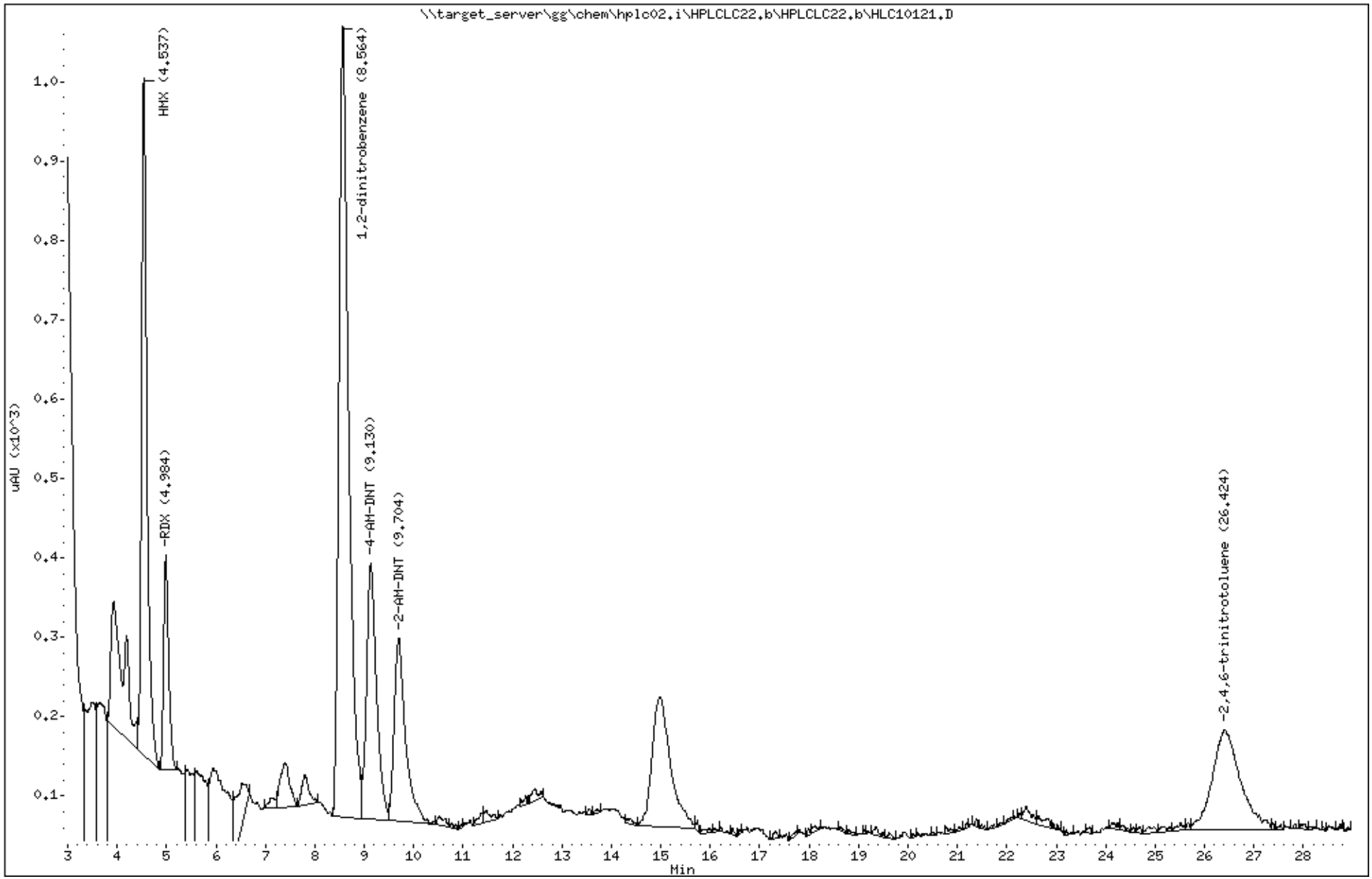
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10121.D
Date : 22-MAR-2018 20:04
Client ID: CHAAP-20B-SS06
Sample Info: SL2133-19

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000171

REISSUE

Data File: HLC10217.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10217.D
Lab Smp Id: SL2133-19C Client Smp ID: CHAAP-20B-SS06
Inj Date : 29-MAR-2018 00:02
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-19C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 43
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.637	6.639	-0.002	615	0.14238	355(M)	M2
4	RDX	10.597	10.606	-0.009	277	0.07020	175	
$ 2	1,2-dinitrobenzene	13.324	13.299	0.025	1133	0.21206	529	
10	2,4,6-trinitrotoluene	18.777	18.726	0.051	314	0.04518	113(a)	
11	4-AM-DNT	30.270	30.266	0.004	165	0.05504	137(M)	M6
12	2-AM-DNT	32.084	32.046	0.038	132	0.03351	83.7(aM)	M9

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

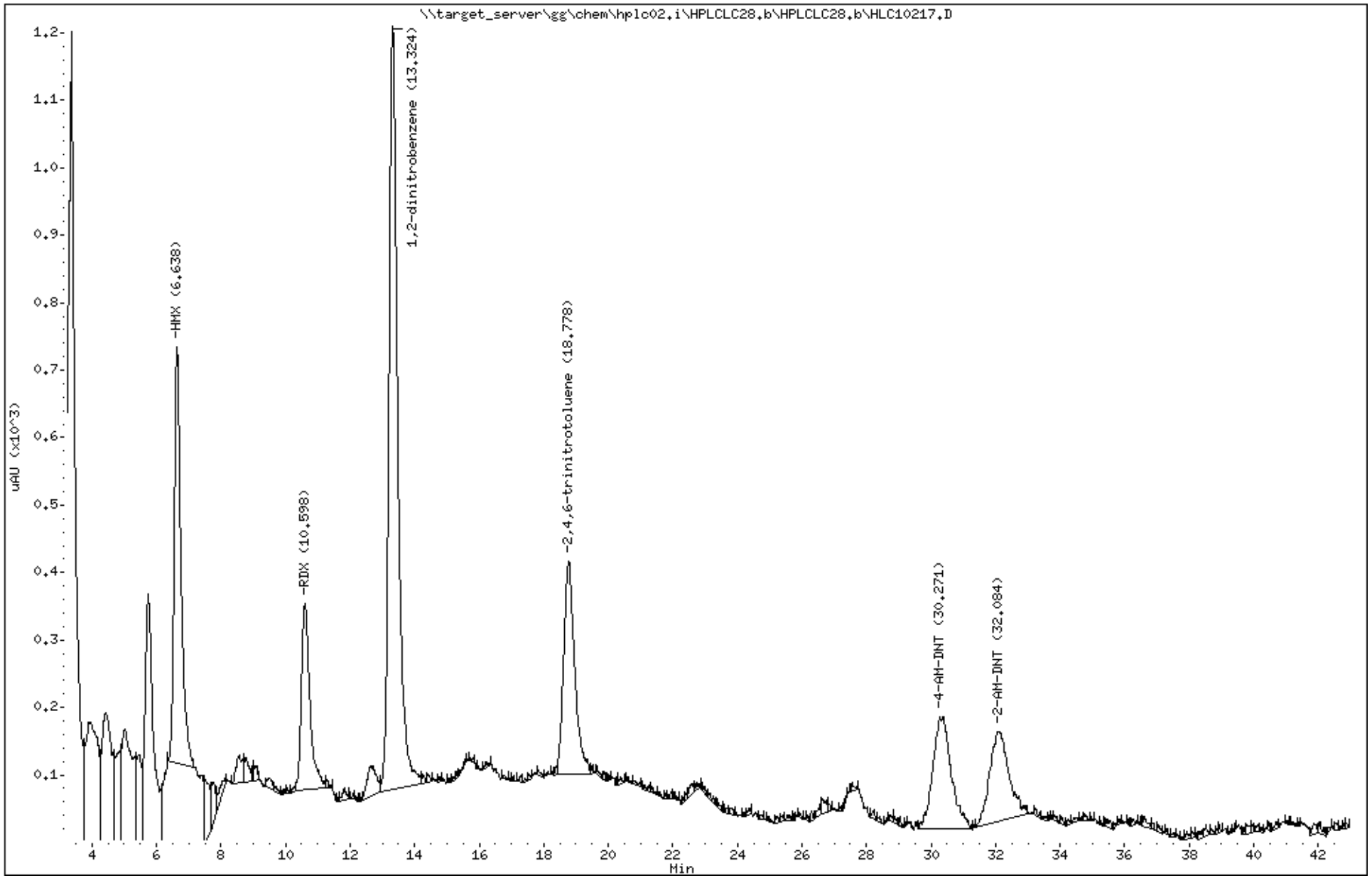
10:32 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10217.D
Date : 29-MAR-2018 00:02
Client ID: CHAAP-20B-SS06
Sample Info: SL2133-19C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000173

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-20
Client ID: CHAAP-20B-EB-031518
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10047.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		97.0	%					

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REISSUE

Katahdin Analytical Services 2000174

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10047.D
Report Date: 30-Mar-2018 11:34

Katahdin Analytical Services

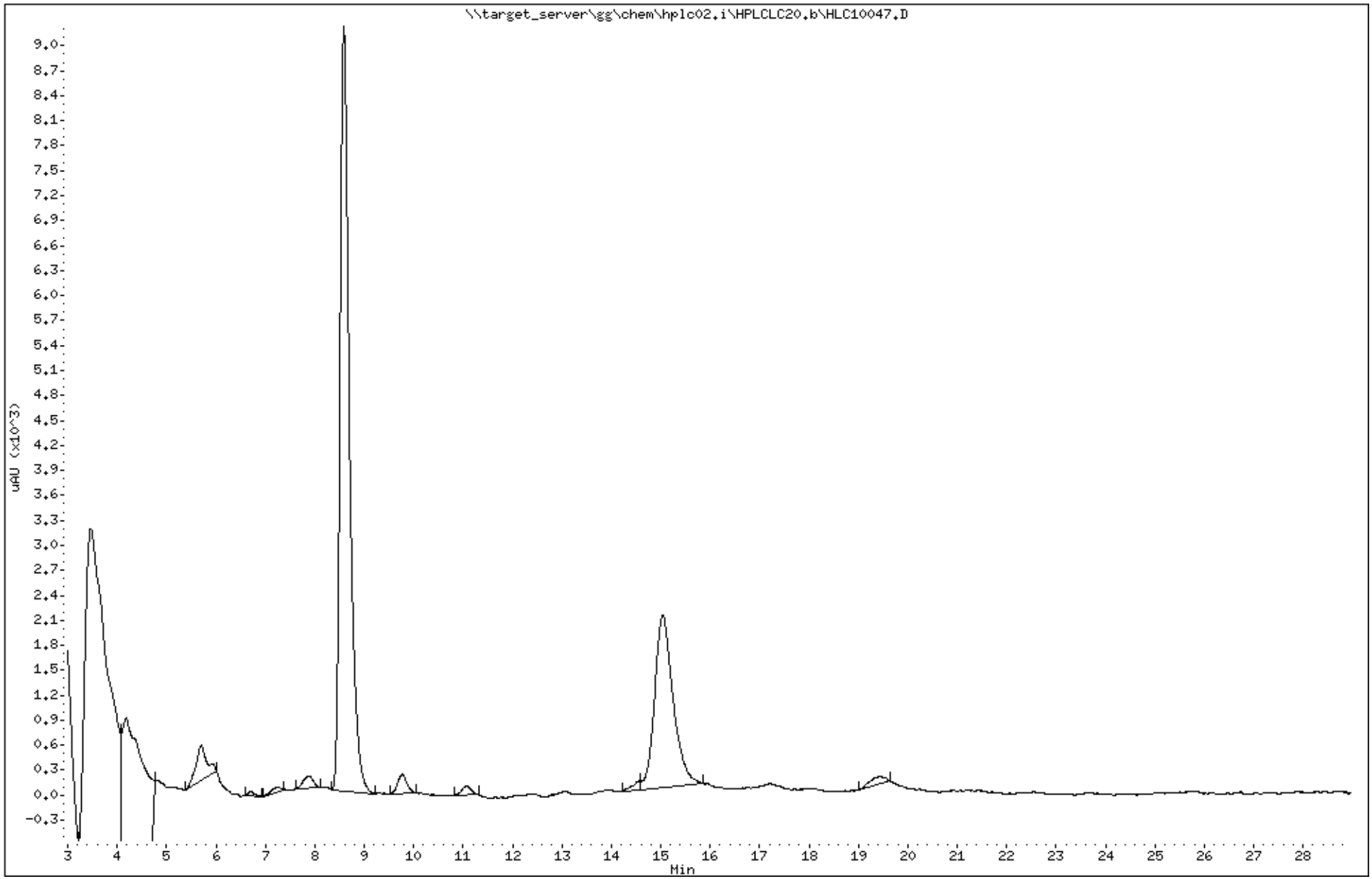
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10047.D
Lab Smp Id: SL2133-20 Client Smp ID: CHAAP-20B-EB-031518
Inj Date : 20-MAR-2018 23:23
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-20
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10047.D
Date : 20-MAR-2018 23:23
Client ID: CHAAP-20B-EB-031518 Instrument: hplc02.i
Sample Info: SL2133-20
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000176
REISSUE

Data File: HLC10047.D
Report Date: 30-Mar-2018 11:37

Katahdin Analytical Services

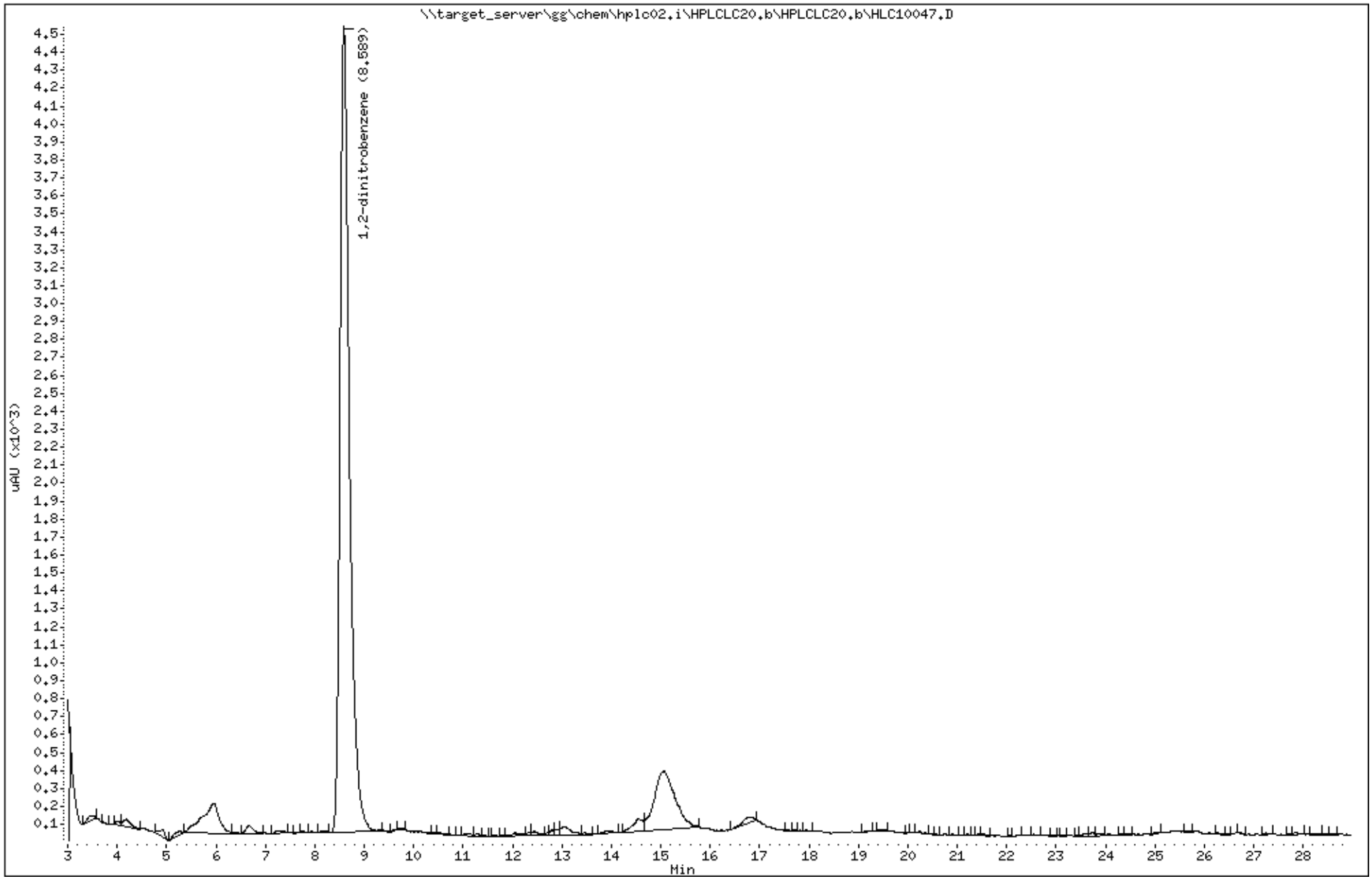
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10047.D
Lab Smp Id: SL2133-20 Client Smp ID: CHAAP-20B-EB-031518
Inj Date : 20-MAR-2018 23:23
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-20
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.589	8.575	0.014	4489	0.97009	9.70	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10047.D
Date : 20-MAR-2018 23:23
Client ID: CHAAP-20B-EB-031518 Instrument: hplc02.i
Sample Info: SL2133-20
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000178

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-21
Client ID: CHAAP-20B-SS102
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10122.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 81.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1400	ug/Kgdrywt	1	100	120	10.	59.
RDX	E	26000	ug/Kgdrywt	1	100	120	8.0	59.
1,3,5-Trinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.9	59.
1,3-Dinitrobenzene	U	59	ug/Kgdrywt	1	100	120	7.3	59.
Tetryl	U	59	ug/Kgdrywt	1	100	120	6.4	59.
Nitrobenzene	U	59	ug/Kgdrywt	1	100	120	26.	59.
2,4,6-Trinitrotoluene	J	77	ug/Kgdrywt	1	100	120	7.9	59.
2-Am-DNT	J	64	ug/Kgdrywt	1	100	120	25.	59.
4-Am-DNT	JJ	100	ug/Kgdrywt	1	100	120	20.	59.
2,6-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
2,4-Dinitrotoluene	U	59	ug/Kgdrywt	1	100	120	18.	59.
2-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	14.	59.
3-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	9.3	59.
4-Nitrotoluene	U	59	ug/Kgdrywt	1	100	120	32.	59.
Nitroglycerin	U	470	ug/Kgdrywt	1	800	940	150	470
PETN	U	470	ug/Kgdrywt	1	800	940	130	470
1,2-Dinitrobenzene		84.9	%					

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REISSUE

Katahdin Analytical Services 2000179

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-21
Client Sample ID : CHAAP-20B-SS102

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 20:36

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 00:50

Analyte	Column	RT	Concentration	RPD
HMX	A	4.54	1450	
	B	6.64	1360	6.4
RDX	A	4.99	25700	
	B	10.58	26100	1.5
2,4,6-Trinitrotoluene	A	26.46	76.7	
	B	18.76	62.7	20.1
2-Am-DNT	A	9.69	64	
	B	32.05	48.5	27.6
4-Am-DNT	A	9.13	105	
	B	30.27	58.8	56.4

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10122.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10122.D
Lab Smp Id: SL2133-21 Client Smp ID: CHAAP-20B-SS102
Inj Date : 22-MAR-2018 20:36
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-21
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 99
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	18.630	% Moisture
Cpnd Variable		Local Compound Variable

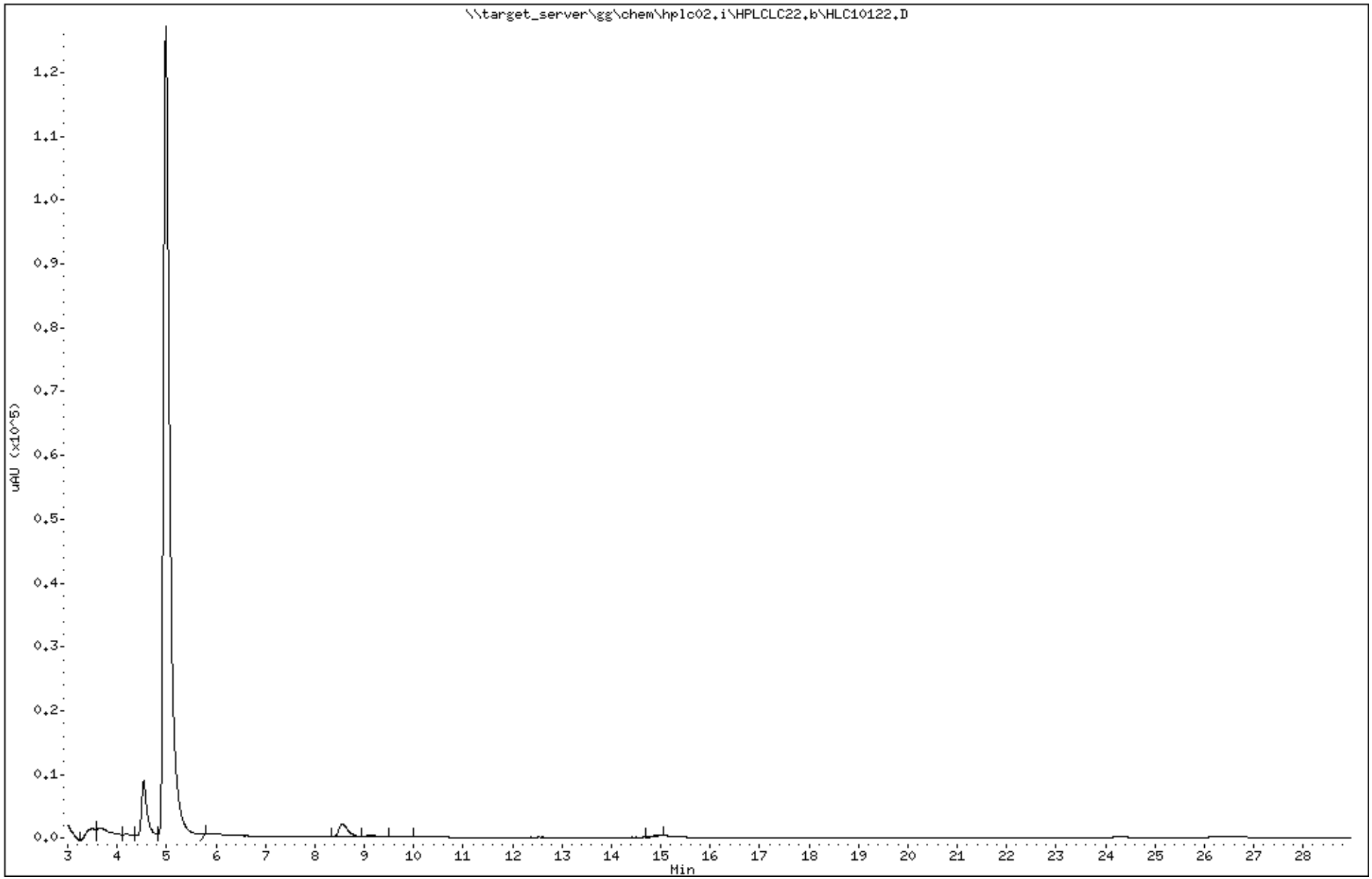
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10122.D
Date : 22-MAR-2018 20:36
Client ID: CHAAP-20B-SS102
Sample Info: SL2133-21

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000182

REISSUE

Data File: HLC10122.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10122.D
Lab Smp Id: SL2133-21 Client Smp ID: CHAAP-20B-SS102
Inj Date : 22-MAR-2018 20:36
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-21
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 99
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	18.630	% Moisture
Cpnd Variable		Local Compound Variable

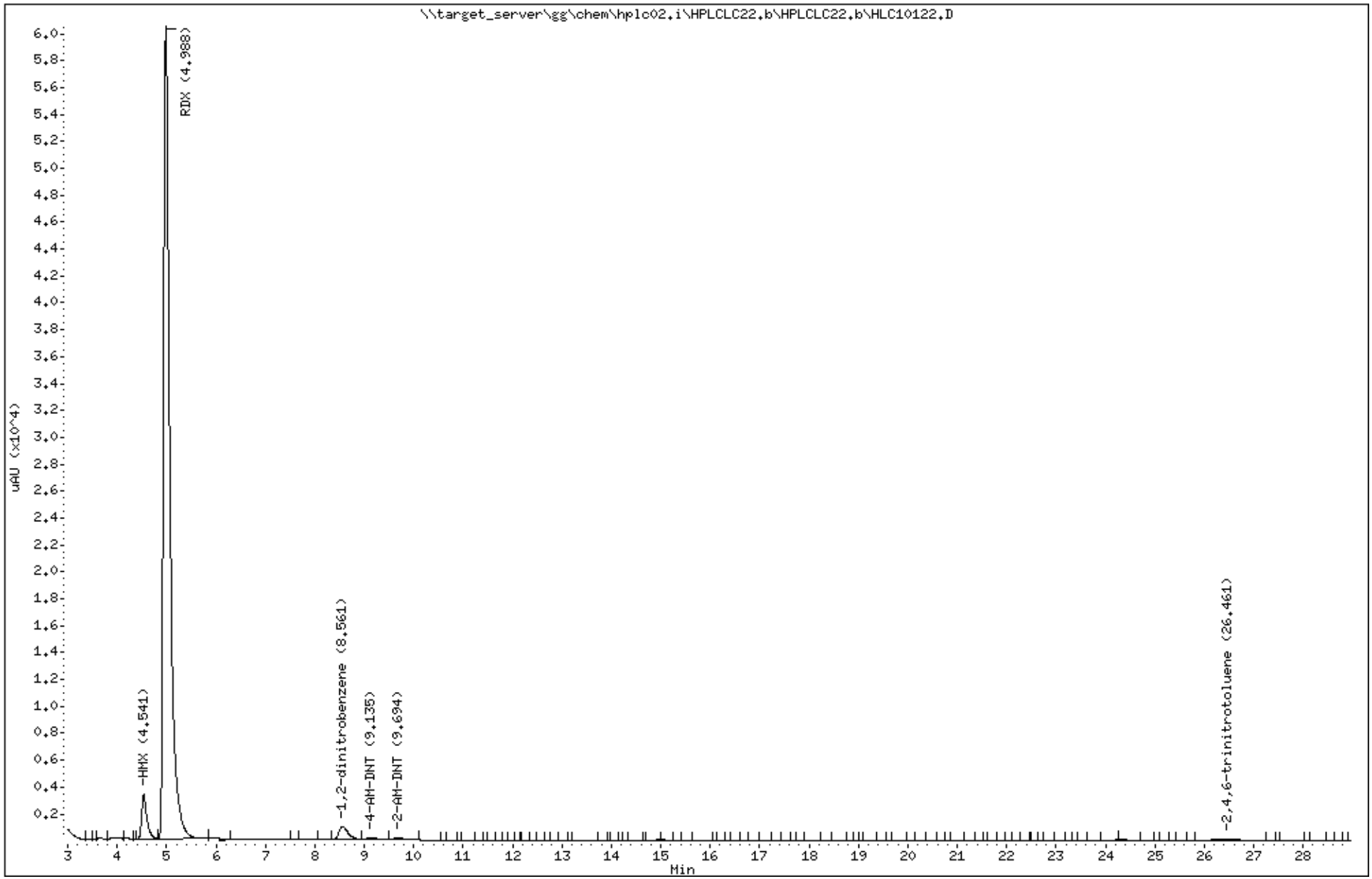
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.541	4.526	0.015	3308	0.61366	1450(M)	M2
4	RDX	4.987	4.973	0.014	60400	10.8852	25700(AM)	M2
$ 2	1,2-dinitrobenzene	8.561	8.540	0.021	983	0.21243	502	
11	4-AM-DNT	9.134	9.106	0.028	191	0.04439	105(a)	
12	2-AM-DNT	9.694	9.660	0.034	156	0.02708	64.0(a)	
10	2,4,6-trinitrotoluene	26.461	26.340	0.121	82	0.03246	76.7(a)	

10:33 am, Apr 02, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10122.D
Date : 22-MAR-2018 20:36
Client ID: CHAAP-20B-SS102
Instrument: hplc02.i
Sample Info: SL2133-21
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000184

REISSUE

Data File: HLC10218.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10218.D
Lab Smp Id: SL2133-21C Client Smp ID: CHAAP-20B-SS102
Inj Date : 29-MAR-2018 00:50
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-21C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	18.630	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	6.636	6.639	-0.003	2426	0.57361	1360	
4	RDX	10.583	10.606	-0.023	44962	11.0470	26100(A)	
$ 2	1,2-dinitrobenzene	13.323	13.299	0.024	1086	0.20317	480	
10	2,4,6-trinitrotoluene	18.756	18.726	0.030	199	0.02652	62.7(a)	
11	4-AM-DNT	30.269	30.266	0.003	94	0.02487	58.8(aM)	M9
12	2-AM-DNT	32.049	32.046	0.003	91	0.02052	48.5(aM)	M9

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
    exceeded maximum amount.
M - Compound response manually integrated.

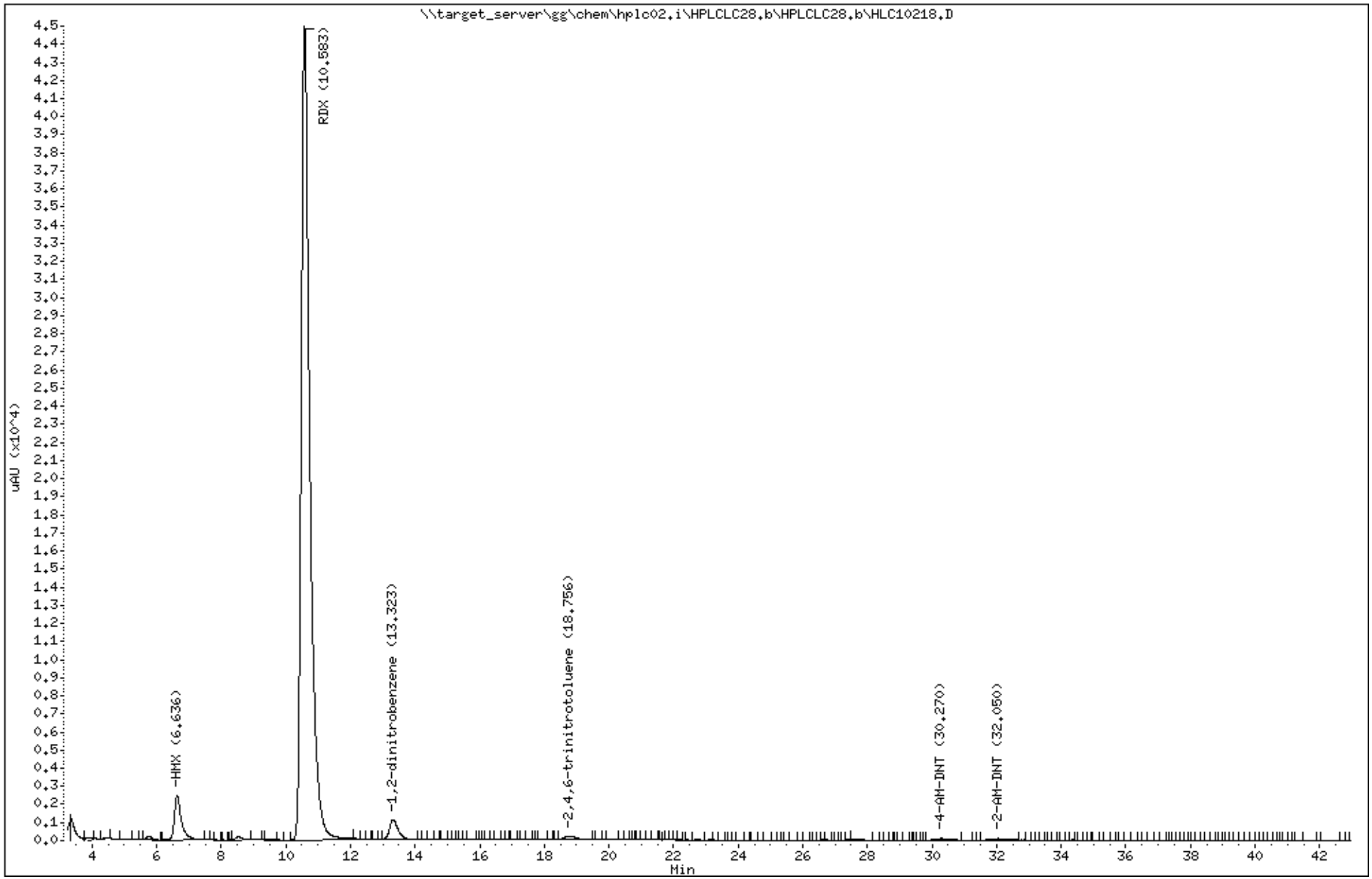
10:33 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10218.D
Date : 29-MAR-2018 00:50
Client ID: CHAAP-20B-SS102
Sample Info: SL2133-21C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000186

REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-21DL
Client ID: CHAAP-20B-SS102
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10150.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 23-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 81.
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX		1200	ug/Kgdrywt	10	100	1200	100	590
RDX		22000	ug/Kgdrywt	10	100	1200	80.	590
1,3,5-Trinitrobenzene	U	590	ug/Kgdrywt	10	100	1200	79.	590
1,3-Dinitrobenzene	U	590	ug/Kgdrywt	10	100	1200	73.	590
Tetryl	U	590	ug/Kgdrywt	10	100	1200	64.	590
Nitrobenzene	U	590	ug/Kgdrywt	10	100	1200	260	590
2,4,6-Trinitrotoluene	U	590	ug/Kgdrywt	10	100	1200	79.	590
2-Am-DNT	U	590	ug/Kgdrywt	10	100	1200	250	590
4-Am-DNT	U	590	ug/Kgdrywt	10	100	1200	200	590
2,6-Dinitrotoluene	U	590	ug/Kgdrywt	10	100	1200	320	590
2,4-Dinitrotoluene	U	590	ug/Kgdrywt	10	100	1200	180	590
2-Nitrotoluene	U	590	ug/Kgdrywt	10	100	1200	140	590
3-Nitrotoluene	U	590	ug/Kgdrywt	10	100	1200	93.	590
4-Nitrotoluene	U	590	ug/Kgdrywt	10	100	1200	320	590
Nitroglycerin	U	4700	ug/Kgdrywt	10	800	9400	1500	4700
PETN	U	4700	ug/Kgdrywt	10	800	9400	1300	4700
1,2-Dinitrobenzene	D	0.00	%					

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REISSUE

Katahdin Analytical Services 2000187

Data File: HLC10150.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10150.D
Lab Smp Id: SL2133-21DL Client Smp ID: CHAAP-20B-SS102
Inj Date : 23-MAR-2018 13:04
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-21DL
Misc Info : WG225143,WG225028,WG225143-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 27
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01040	Weight of Sample (Kg)
M	18.630	% Moisture
Cpnd Variable		Local Compound Variable

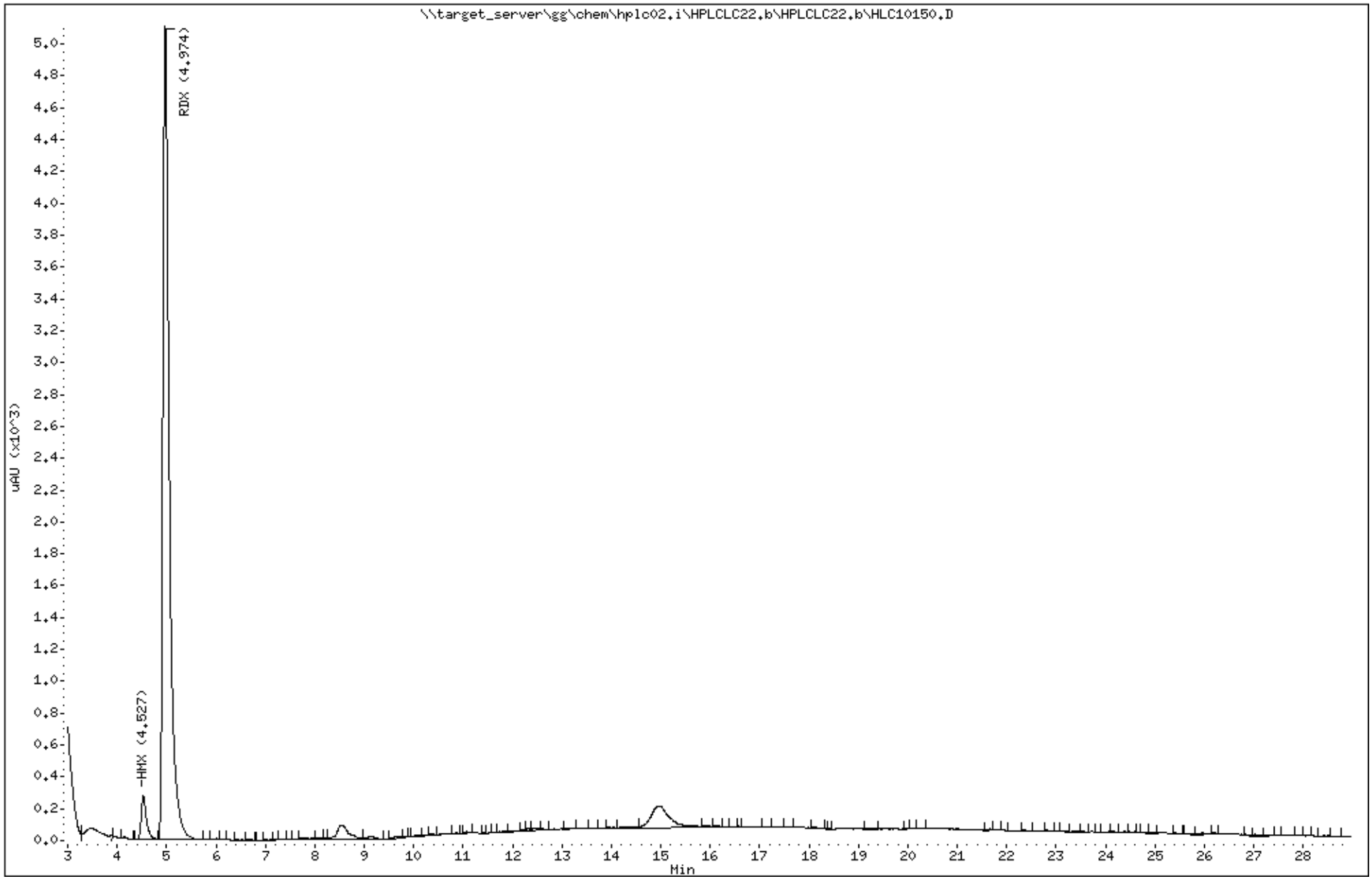
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.527	4.526	0.001	279	0.05176	1220	
4	RDX	4.974	4.973	0.001	5104	0.92521	21900	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10150.D
Date : 23-MAR-2018 13:04
Client ID: CHAAP-20B-SS102
Sample Info: SL2133-21DL

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000189
REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2133-22
Client ID: CHAAP-20B-SS104
Project: Cornhusker Army Ammunition Plant
SDG: SL2133
Lab File ID: HLC10123.D

Sample Date: 15-MAR-18
Received Date: 16-MAR-18
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 79.
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	J	95	ug/Kgdrywt	1	100	120	11.	62.
RDX	U	62	ug/Kgdrywt	1	100	120	8.4	62.
1,3,5-Trinitrobenzene	U	62	ug/Kgdrywt	1	100	120	8.3	62.
1,3-Dinitrobenzene	U	62	ug/Kgdrywt	1	100	120	7.7	62.
Tetryl	U	62	ug/Kgdrywt	1	100	120	6.7	62.
Nitrobenzene	U	62	ug/Kgdrywt	1	100	120	27.	62.
2,4,6-Trinitrotoluene	U	62	ug/Kgdrywt	1	100	120	8.3	62.
2-Am-DNT	U	62	ug/Kgdrywt	1	100	120	26.	62.
4-Am-DNT	U	62	ug/Kgdrywt	1	100	120	21.	62.
2,6-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
2,4-Dinitrotoluene	U	62	ug/Kgdrywt	1	100	120	19.	62.
2-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	15.	62.
3-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	9.8	62.
4-Nitrotoluene	U	62	ug/Kgdrywt	1	100	120	33.	62.
Nitroglycerin	U	500	ug/Kgdrywt	1	800	990	150	500
PETN	U	500	ug/Kgdrywt	1	800	990	130	500
1,2-Dinitrobenzene		81.6	%					

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REISSUE

Katahdin Analytical Services 2000190

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant

SDG : SL2133
Lab Sample ID : SL2133-22
Client Sample ID : CHAAP-20B-SS104

Column A
Instrument ID : HPLC02
Date Analyzed : 03/22/18
Time Analyzed : 21:08

Column B
Instrument ID : HPLC02
Date Analyzed : 03/29/18
Time Analyzed : 01:37

Analyte	Column	RT	Concentration	RPD
HMX	A	4.53	94.8	
	B	6.64	72	27.3

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10123.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10123.D
Lab Smp Id: SL2133-22 Client Smp ID: CHAAP-20B-SS104
Inj Date : 22-MAR-2018 21:08
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-22
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 100
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	20.951	% Moisture
Cpnd Variable		Local Compound Variable

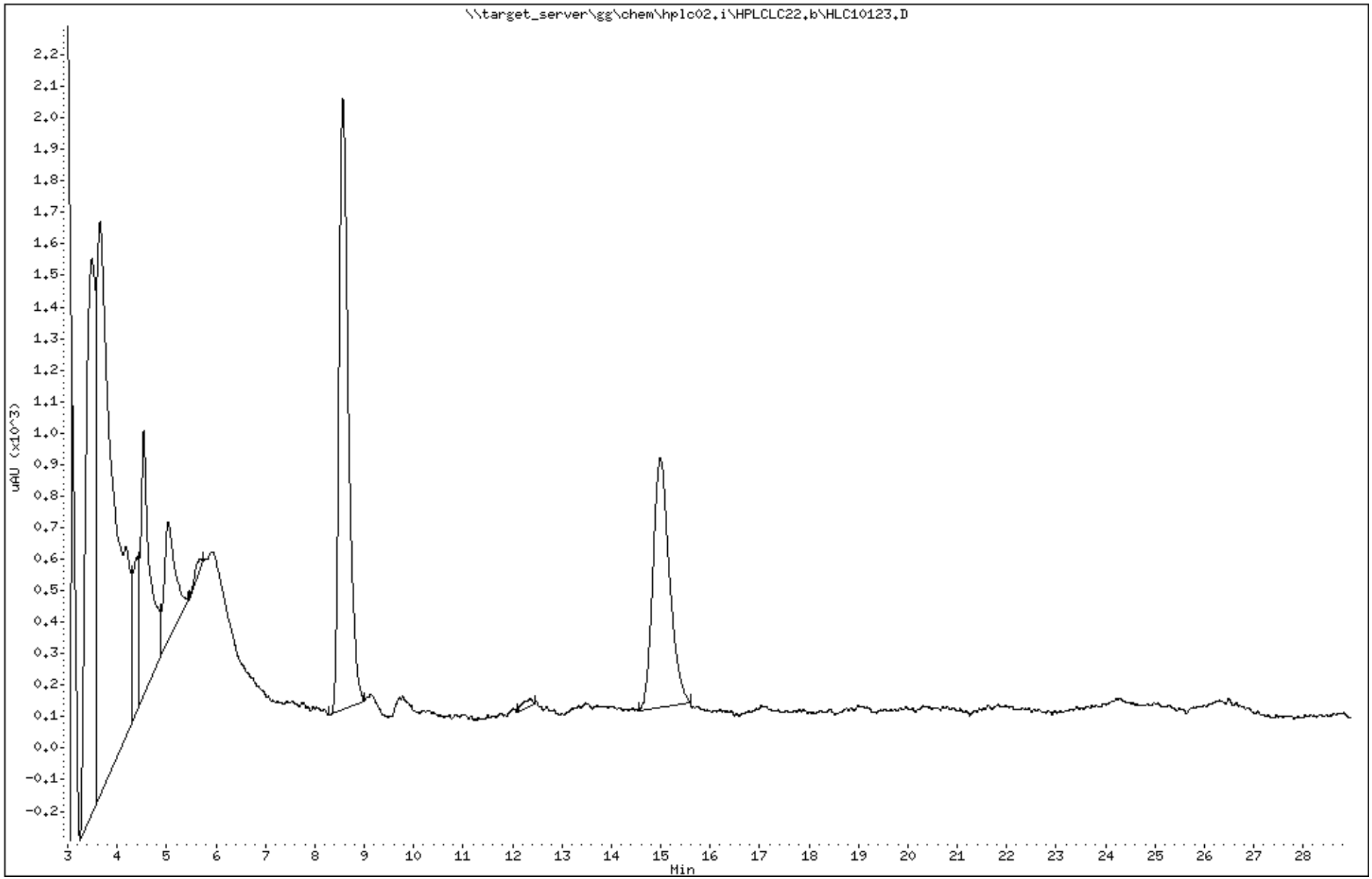
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10123.D
Date : 22-MAR-2018 21:08
Client ID: CHAAP-20B-SS104
Sample Info: SL2133-22

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000193
REISSUE

Data File: HLC10123.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10123.D
Lab Smp Id: SL2133-22 Client Smp ID: CHAAP-20B-SS104
Inj Date : 22-MAR-2018 21:08
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-22
Misc Info : WG225143,WG225028,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 100
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	20.951	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.533	4.526	0.007	206	0.03821	94.8(aM)	M9
~~4~~	~~RDX~~	~~5.033~~	~~4.973~~	~~0.060~~	~~98~~	~~0.02352~~	~~58.4(aM)~~	~~M3~~
$ 2	1,2-dinitrobenzene	8.567	8.540	0.027	945	0.20422	506	
~~11~~	~~4-AM-DNT~~	~~9.133~~	~~9.106~~	~~0.027~~	~~35~~	~~0.00813~~	~~20.2(a)~~	NC
~~12~~	~~2-AM-DNT~~	~~9.700~~	~~9.660~~	~~0.040~~	~~36~~	~~0.00625~~	~~15.5(a)~~	

QC Flag Legend

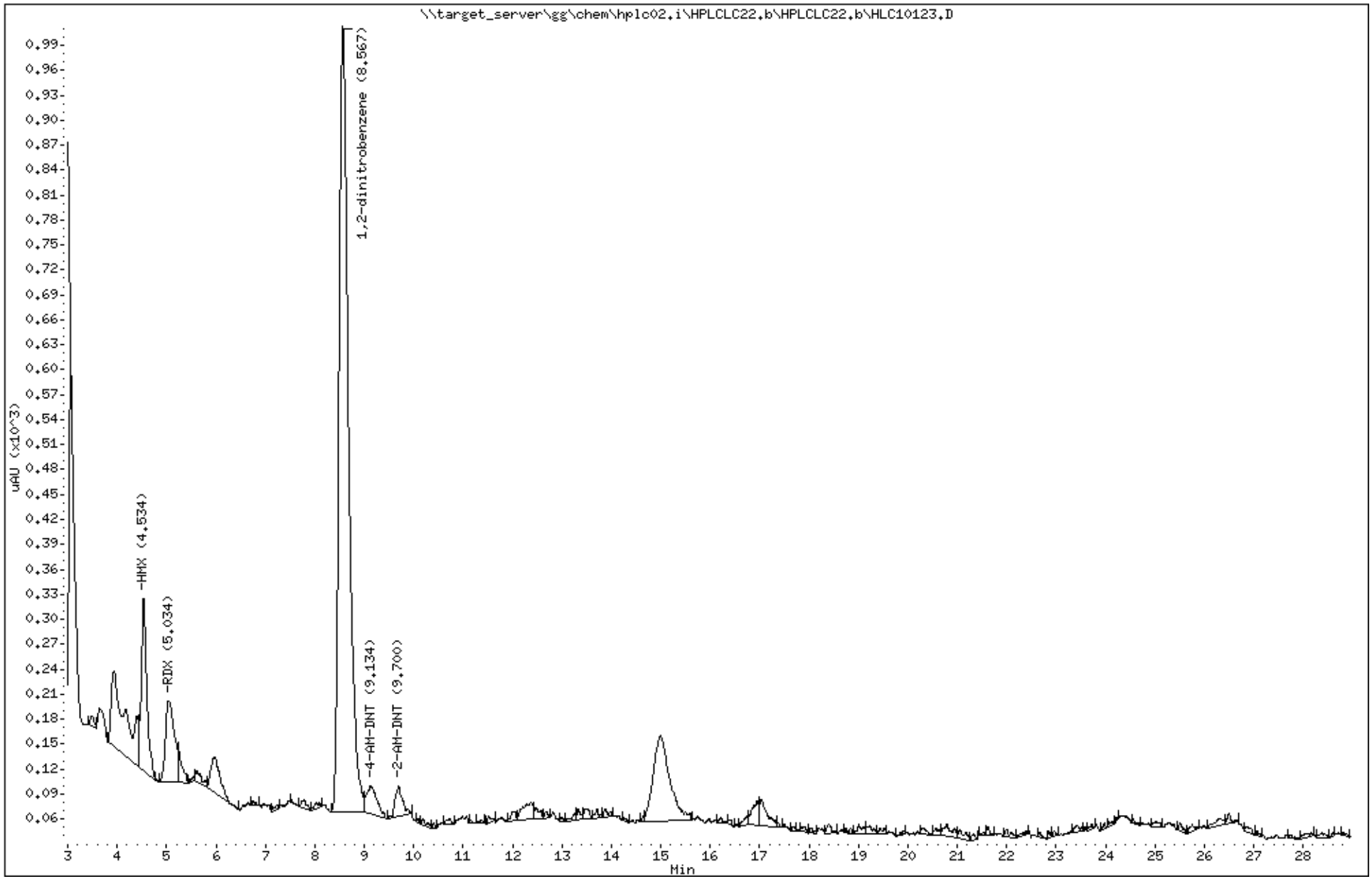
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

10:34 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10123.D
Date : 22-MAR-2018 21:08
Client ID: CHAAP-20B-SS104
Sample Info: SL2133-22

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000195

REISSUE

Data File: HLC10219.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10219.D
Lab Smp Id: SL2133-22C Client Smp ID: CHAAP-20B-SS104
Inj Date : 29-MAR-2018 01:37
Operator : AC Inst ID: hplc02.i
Smp Info : SL2133-22C
Misc Info : WG225143,WG225028,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 45
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01020	Weight of Sample (Kg)
M	20.951	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
	1 HMX	6.636	6.639	-0.003	139	0.02903	72.0(aM)	M2
$	2 1,2-dinitrobenzene	13.329	13.299	0.030	1060	0.19825	492	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

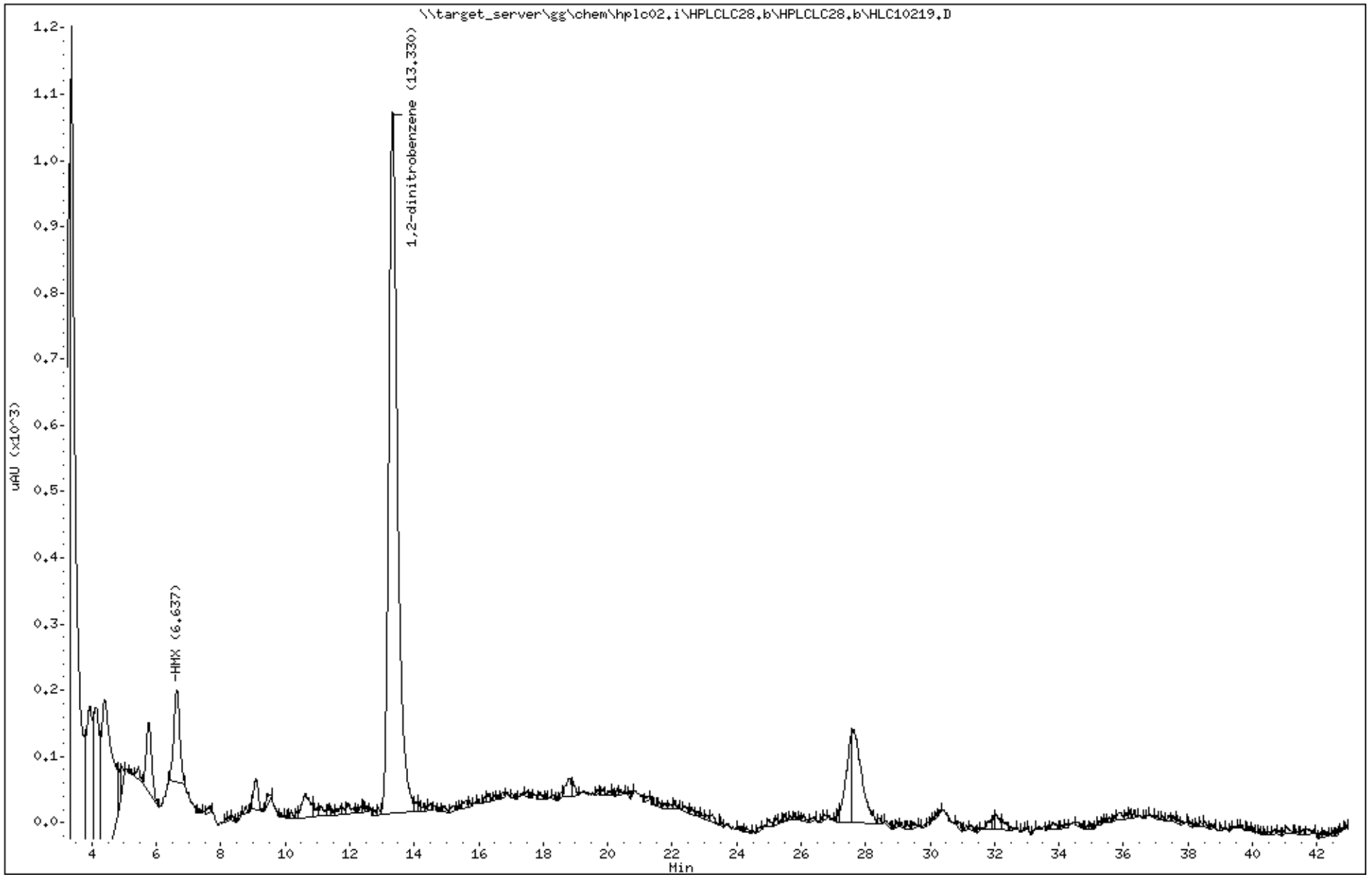
10:34 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10219.D
Date : 29-MAR-2018 01:37
Client ID: CHAAP-20B-SS104
Sample Info: SL2133-22C

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000197
REISSUE

Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HKH10014.I HKH10013.I HKH10012.I HKH10011.I HKH10010.I HKH10009.I HKH10008.I
Calibration Date(s): 01-AUG-17 09:37 01-AUG-17 14:33

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
HMX	143	204	424	1108	2190	4103	8448		LNR	-0.00406	4200	0.99963	0.99000	O
RDX	92.00000	202	389	1038	2084	3920	8183		LNR	0.00215	4071	0.99952	0.99000	O
1,3,5-trinitrobenzene	222	508	1024	2674	5383	10154	20806		LNR	-0.00071	10372	0.99973	0.99000	O
1,3-dinitrobenzene	264	581	1148	2994	6045	11405	23270		LNR	-0.00176	11603	0.99976	0.99000	O
TETRYL	98.00000	244	482	1267	2545	4803	9244		LNR	-0.01222	4644	0.99914	0.99000	O
nitrobenzene	142	331	655	1720	3466	6563	13345		LNR	-0.00158	6659	0.99979	0.99000	O
2,4,6-trinitrotoluene	135	313	627	1624	3260	6187	12320		LNR	-0.00578	6161	0.99976	0.99000	O
2-AM-DNT	65.00000	171	311	854	1698	3193	6303		LNR	-0.00832	3155	0.99955	0.99000	O
4-AM-DNT	63.00000	118	244	663	1299	2450	4682		LNR	-0.01508	2353	0.99890	0.99000	O
2,6-dinitrotoluene	76.00000	172	369	981	1970	3749	7493		LNR	-0.00306	3750	0.99978	0.99000	O
2,4-dinitrotoluene	136	329	692	1809	3639	6925	13785		LNR	-0.00420	6900	0.99976	0.99000	O
2-nitrotoluene	63.00000	115	257	686	1382	2659	5246		LNR	-0.00402	2630	0.99976	0.99000	O
3-nitrotoluene	72.00000	124	256	701	1390	2617	5111		LNR	-0.01061	2561	0.99942	0.99000	O
4-nitrotoluene	101	120	227	531	1075	2023	3902		LNR	-0.02177	1947	0.99936	0.99000	O
1,2-dinitrobenzene	117	263	530	1379	2756	5196	10604		LNR	-0.00227	5286	0.99974	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: HKH10016.D
Report Date: 02-Aug-2017 10:20

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: Explosives
Lab Smp Id: WG210620-16
Level: LOW Operator: AAB
Data Type: LC DATA SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: SW8330A.sub
Method File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Misc Info: WG210620,WG210205,WG210620-13,SK6535-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 HMX	5.00	5.68	113.67	80-120
4 RDX	5.00	5.76	115.30	80-120
5 1,3,5-trinitrobenz	5.00	5.58	111.71	80-120
6 1,3-dinitrobenzene	5.00	5.59	111.84	80-120
7 nitrobenzene	5.00	5.66	113.30	80-120
9 TETRYL	5.00	6.15	123.00*	80-120
10 2,4,6-trinitrotolu	5.00	5.74	114.80	80-120
11 4-AM-DNT	5.00	6.51	130.27*	80-120
12 2-AM-DNT	5.00	5.70	114.01	80-120
13 2,6-dinitrotoluene	5.00	5.74	114.91	80-120
14 2,4-dinitrotoluene	5.00	5.80	116.03	80-120
15 2-nitrotoluene	5.00	5.84	116.91	80-120
16 4-nitrotoluene	5.00	5.92	118.33	80-120
17 3-nitrotoluene	5.00	6.25	124.99*	80-120
52 3,5-dinitroaniline	5.00	5.53	110.58	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 2 1,2-dinitrobenzene	10.0	0.000	*	82-150

Data File: HKH10016.D
Report Date: 02-Aug-2017 10:20

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10016.D
Lab Smp Id: WG210620-16
Inj Date : 01-AUG-2017 17:01
Operator : AAB Inst ID: hplc02.i
Smp Info : WG210620-16,SK6535
Misc Info : WG210620,WG210205,WG210620-13,SK6535-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 10:01 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 30 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

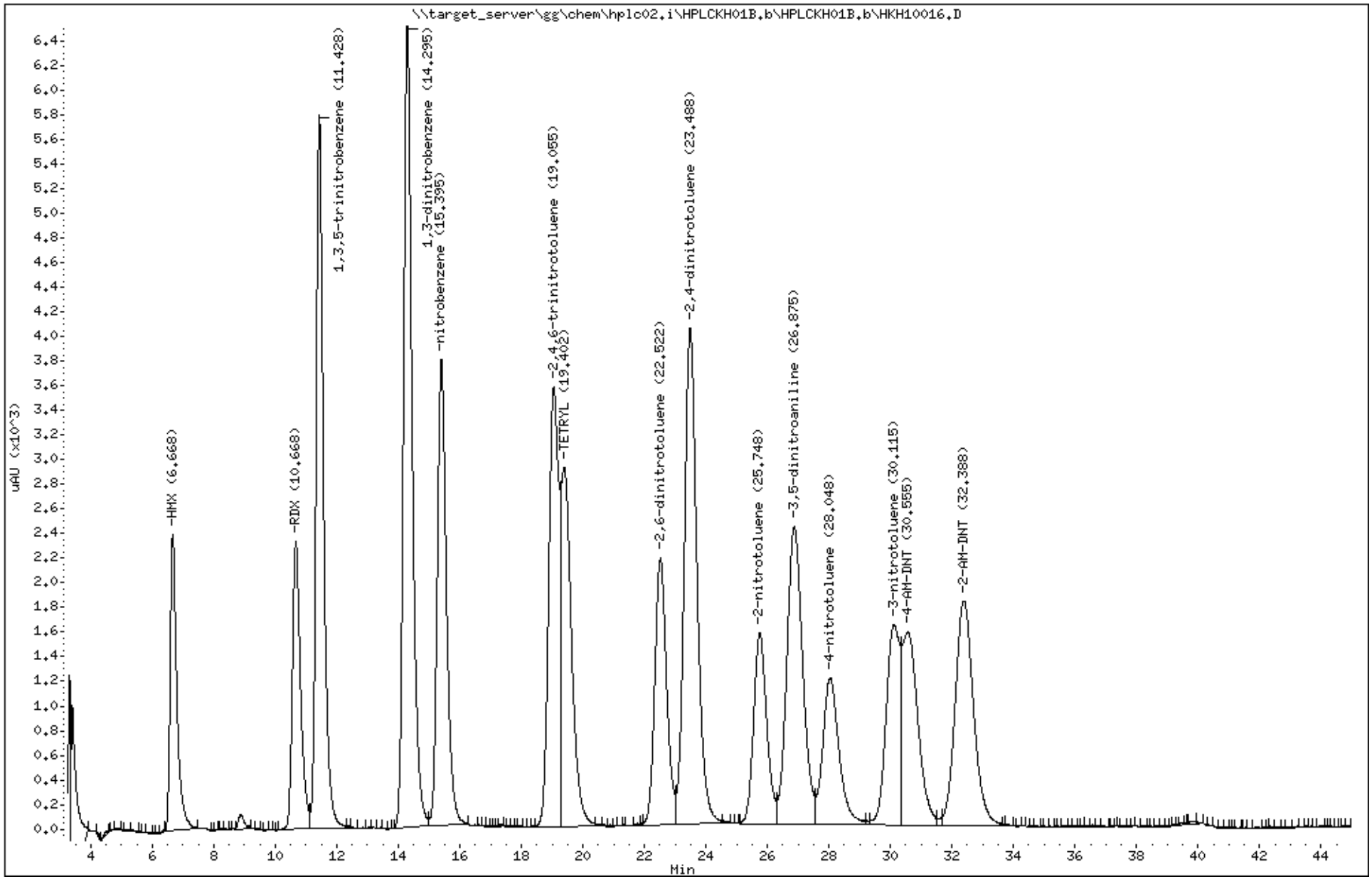
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	6.668	6.678	-0.010	2404	0.56837	5.68	
4	RDX	10.668	10.684	-0.016	2338	0.57648	5.76	
5	1,3,5-trinitrobenzene	11.428	11.431	-0.003	5801	0.55856	5.58	
6	1,3-dinitrobenzene	14.294	14.304	-0.010	6509	0.55919	5.59	
7	nitrobenzene	15.394	15.411	-0.017	3783	0.56650	5.66	
10	2,4,6-trinitrotoluene	19.054	19.064	-0.010	3572	0.57402	5.74	
9	TETRYL	19.401	19.424	-0.023	2913	0.61500	6.15(R)	
13	2,6-dinitrotoluene	22.521	22.538	-0.017	2166	0.57456	5.74	
14	2,4-dinitrotoluene	23.488	23.511	-0.023	4032	0.58013	5.80	
15	2-nitrotoluene	25.748	25.764	-0.016	1548	0.58454	5.84	
52	3,5-dinitroaniline	26.874	26.931	-0.057	2417	0.55288	5.53	
16	4-nitrotoluene	28.048	28.058	-0.010	1194	0.59164	5.92	
17	3-nitrotoluene	30.114	30.111	0.003	1628	0.62497	6.25(R)	
11	4-AM-DNT	30.554	30.651	-0.097	1568	0.65133	6.51(R)	
12	2-AM-DNT	32.388	32.464	-0.076	1825	0.57005	5.70	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10016.D
Date : 01-AUG-2017 17:01
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-16,SK6535
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000202

REISSUE

Data File: HKH10008.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10008.D
Lab Smp Id: WG210620-15
Inj Date : 01-AUG-2017 09:37
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-15
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 09:37   Cal File: HKH10008.D
Als bottle: 1   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

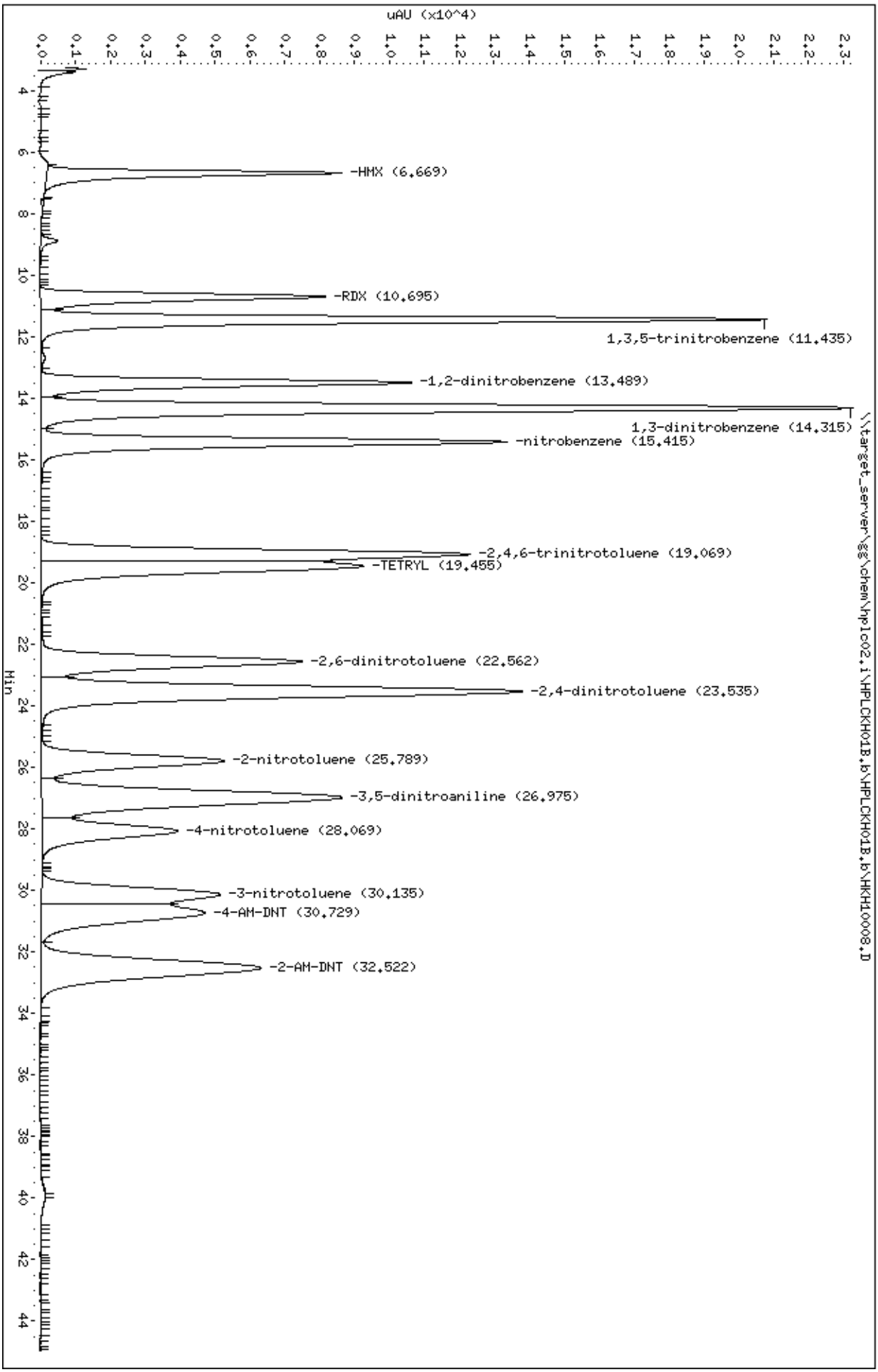
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.668	6.678	-0.010	8448	2.00000	2.01(AM)	M2
4	RDX	10.695	10.684	0.011	8183	2.00000	2.01(A)	
5	1,3,5-trinitrobenzene	11.435	11.431	0.004	20806	2.00000	2.00(A)	
$ 2	1,2-dinitrobenzene	13.488	13.478	0.010	10604	2.00000	2.00(A)	
6	1,3-dinitrobenzene	14.315	14.304	0.011	23270	2.00000	2.00(A)	
7	nitrobenzene	15.415	15.411	0.004	13345	2.00000	2.00(A)	
10	2,4,6-trinitrotoluene	19.068	19.064	0.004	12320	2.00000	1.99	
9	TETRYL	19.455	19.424	0.031	9244	2.00000	1.98	
13	2,6-dinitrotoluene	22.562	22.538	0.024	7493	2.00000	2.00	
14	2,4-dinitrotoluene	23.535	23.511	0.024	13785	2.00000	1.99	
15	2-nitrotoluene	25.788	25.764	0.024	5246	2.00000	1.99	
52	3,5-dinitroaniline	26.975	26.931	0.044	8614	2.00000	1.99	
16	4-nitrotoluene	28.068	28.058	0.010	3902	2.00000	1.98	
17	3-nitrotoluene	30.135	30.111	0.024	5111	2.00000	1.98	
11	4-AM-DNT	30.728	30.651	0.077	4682	2.00000	1.97	
12	2-AM-DNT	32.522	32.464	0.058	6303	2.00000	1.98	

AAB
10:41 am, Aug 02, 2017

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10008.D
Date : 01-AUG-2017 09:37
Client ID:
Sample Info: WG210620-15
Purge Volume: 0.5
Column phase: Acclaim Exp E2
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
uAU (x10^4)
Min
-HMX (6.669)
-RDX (10.695)
1,3,5-trinitrobenzene (11.435)
-1,2-dinitrobenzene (13.489)
1,3-dinitrobenzene (14.315)
-nitrobenzene (15.415)
-2,4,6-trinitrotoluene (19.069)
-TETRYL (19.455)
-2,6-dinitrotoluene (22.562)
-2,4-dinitrotoluene (23.535)
-2-nitrotoluene (25.789)
-3,5-dinitroaniline (26.975)
-4-nitrotoluene (28.069)
-3-nitrotoluene (30.135)
-4-AM-DNT (30.729)
-2-AM-DNT (32.522)
\\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10008.D

Data File: HKH10009.D
Report Date: 02-Aug-2017 09:55

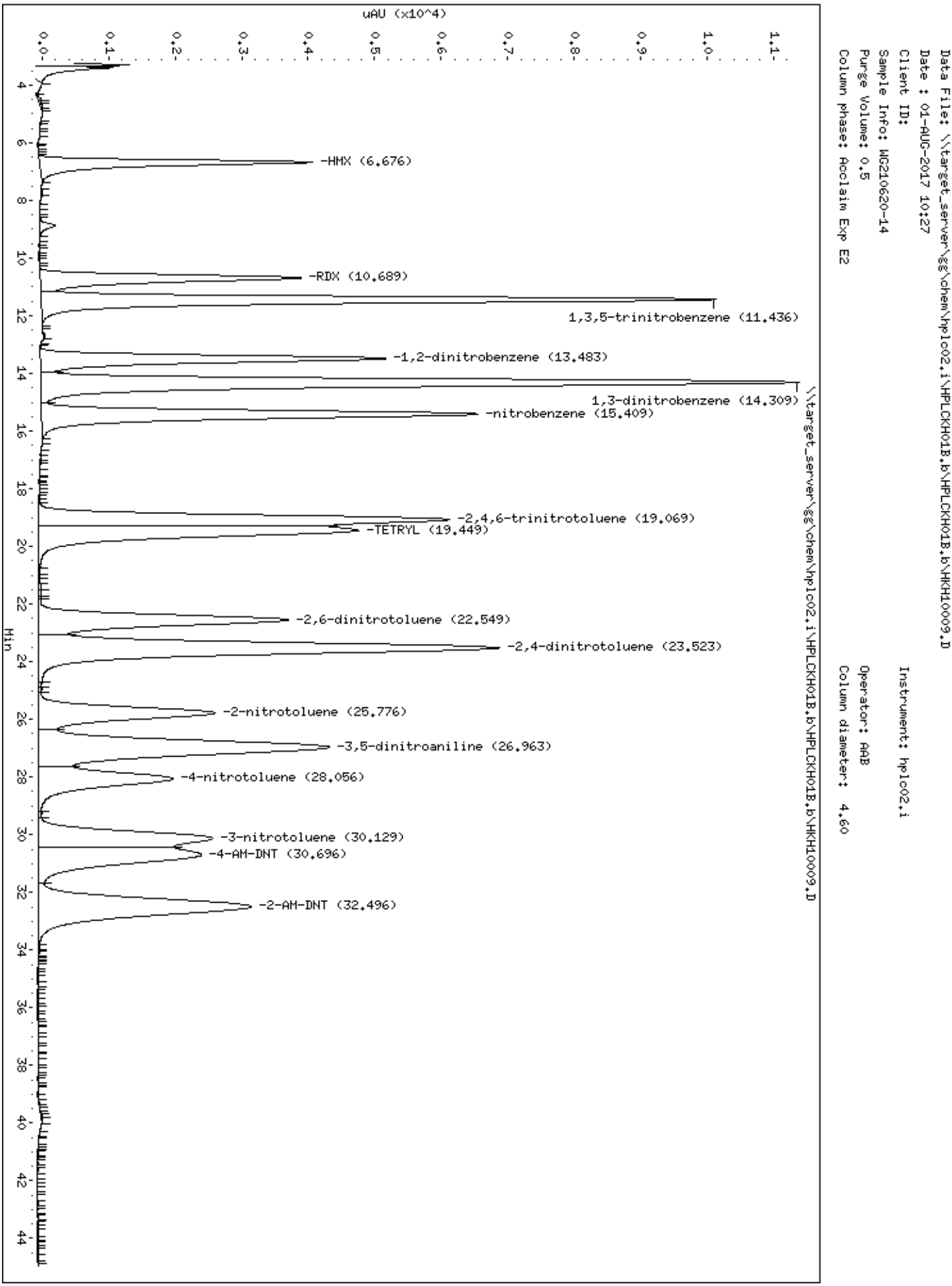
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10009.D
Lab Smp Id: WG210620-14
Inj Date : 01-AUG-2017 10:27
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-14
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 10:27   Cal File: HKH10009.D
Als bottle: 1   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.675	6.678	-0.003	4103	1.00000	0.952	
4	RDX	10.689	10.684	0.005	3920	1.00000	0.966	
5	1,3,5-trinitrobenzene	11.435	11.431	0.004	10154	1.00000	0.978	
$ 2	1,2-dinitrobenzene	13.482	13.478	0.004	5196	1.00000	0.980	
6	1,3-dinitrobenzene	14.309	14.304	0.005	11405	1.00000	0.981	
7	nitrobenzene	15.409	15.411	-0.002	6563	1.00000	0.983	
10	2,4,6-trinitrotoluene	19.069	19.064	0.005	6187	1.00000	0.996	
9	TETRYL	19.449	19.424	0.025	4803	1.00000	1.02	
13	2,6-dinitrotoluene	22.549	22.538	0.011	3749	1.00000	0.994	
14	2,4-dinitrotoluene	23.522	23.511	0.011	6925	1.00000	0.997	
15	2-nitrotoluene	25.775	25.764	0.011	2659	1.00000	1.00	
52	3,5-dinitroaniline	26.962	26.931	0.031	4377	1.00000	1.00	
16	4-nitrotoluene	28.055	28.058	-0.003	2023	1.00000	1.02	
17	3-nitrotoluene	30.129	30.111	0.018	2617	1.00000	1.01	
11	4-AM-DNT	30.695	30.651	0.044	2450	1.00000	1.02	
12	2-AM-DNT	32.495	32.464	0.031	3193	1.00000	1.00	


Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10009.D
Date : 01-AUG-2017 10:27
Client ID:
Sample Info: WG210620-14
Purge Volume: 0.5
Column phase: Acclaim Exp E2
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
uAU (x10^4)
Min
-HMX (6.676)
-RDX (10.689)
1,3,5-trinitrobenzene (11.436)
-1,2-dinitrobenzene (13.483)
1,3-dinitrobenzene (14.309)
-nitrobenzene (15.409)
-2,4,6-trinitrotoluene (19.069)
-TETRYL (19.449)
-2,6-dinitrotoluene (22.549)
-2,4-dinitrotoluene (23.523)
-2-nitrotoluene (25.776)
-3,5-dinitroaniline (26.963)
-4-nitrotoluene (28.056)
-3-nitrotoluene (30.129)
-4-AM-DNT (30.696)
-2-AM-DNT (32.496)
\\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10009.D

Data File: HKH10010.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

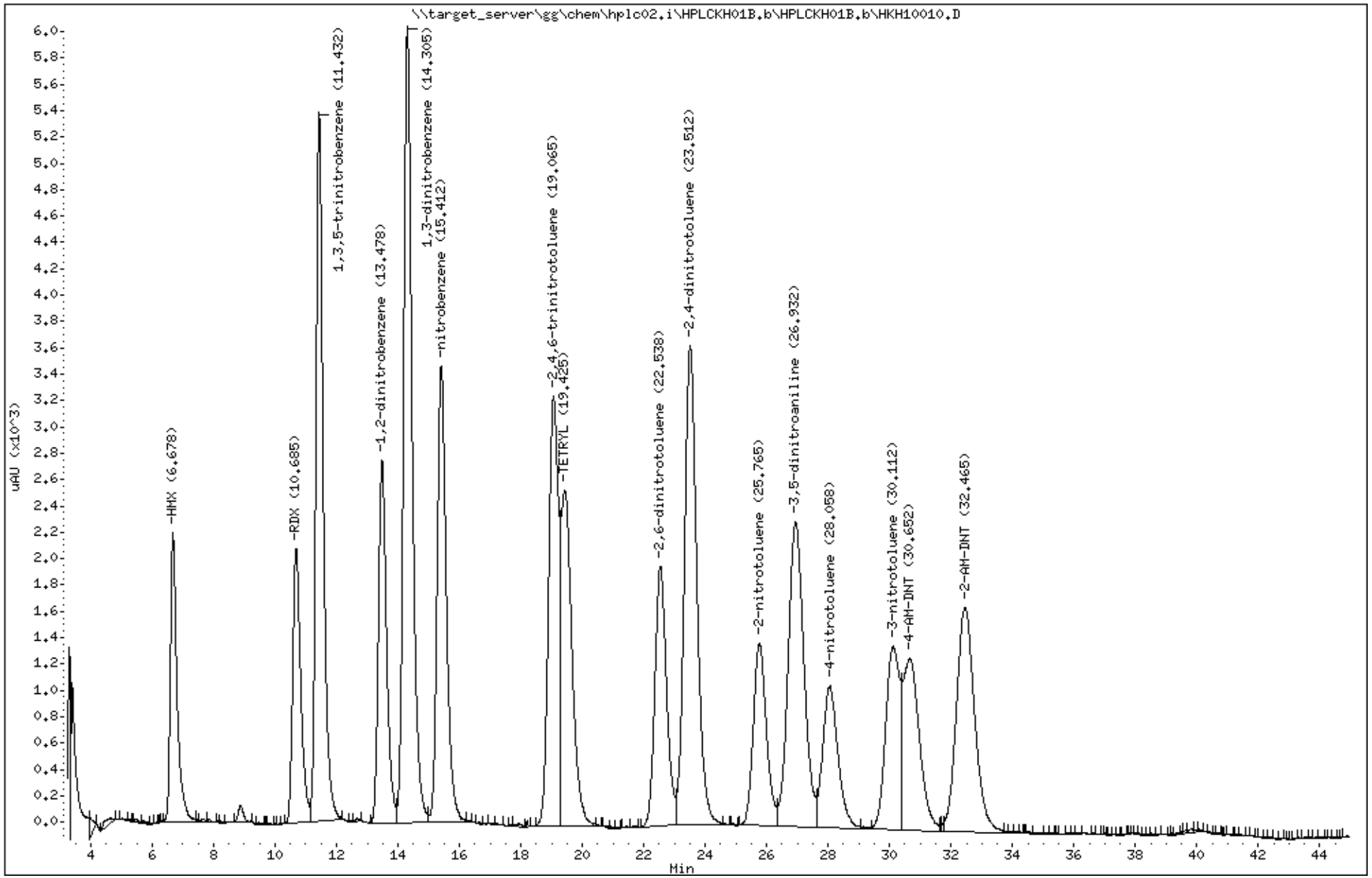
Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10010.D
Lab Smp Id: WG210620-13
Inj Date : 01-AUG-2017 11:16
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-13
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 09-FEB-2017 11:28   Cal File: HKB10080.D
Als bottle: 1   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.678	6.678	0.000	2190	0.50000	0.500	
4	RDX	10.684	10.684	0.000	2084	0.50000	0.500	
5	1,3,5-trinitrobenzene	11.431	11.431	0.000	5383	0.50000	0.500	
$ 2	1,2-dinitrobenzene	13.478	13.478	0.000	2756	0.50000	0.500	
6	1,3-dinitrobenzene	14.304	14.304	0.000	6045	0.50000	0.500	
7	nitrobenzene	15.411	15.411	0.000	3466	0.50000	0.500	
10	2,4,6-trinitrotoluene	19.064	19.064	0.000	3260	0.50000	0.500	
9	TETRYL	19.424	19.424	0.000	2545	0.50000	0.500	
13	2,6-dinitrotoluene	22.538	22.538	0.000	1970	0.50000	0.500	
14	2,4-dinitrotoluene	23.511	23.511	0.000	3639	0.50000	0.500	
15	2-nitrotoluene	25.764	25.764	0.000	1382	0.50000	0.500	
52	3,5-dinitroaniline	26.931	26.931	0.000	2314	0.50000	0.500	
16	4-nitrotoluene	28.058	28.058	0.000	1075	0.50000	0.500	
17	3-nitrotoluene	30.111	30.111	0.000	1390	0.50000	0.500	
11	4-AM-DNT	30.651	30.651	0.000	1299	0.50000	0.500	
12	2-AM-DNT	32.464	32.464	0.000	1698	0.50000	0.500	

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10010.D
Date : 01-AUG-2017 11:16
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-13
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



REISSUE

Katahdin Analytical Services 2000208

Data File: HKH10011.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10011.D
Lab Smp Id: WG210620-12
Inj Date : 01-AUG-2017 12:05
Operator : AAB   Inst ID: hplc02.i
Smp Info : WG210620-12
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 12:05   Cal File: HKH10011.D
Als bottle: 1   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

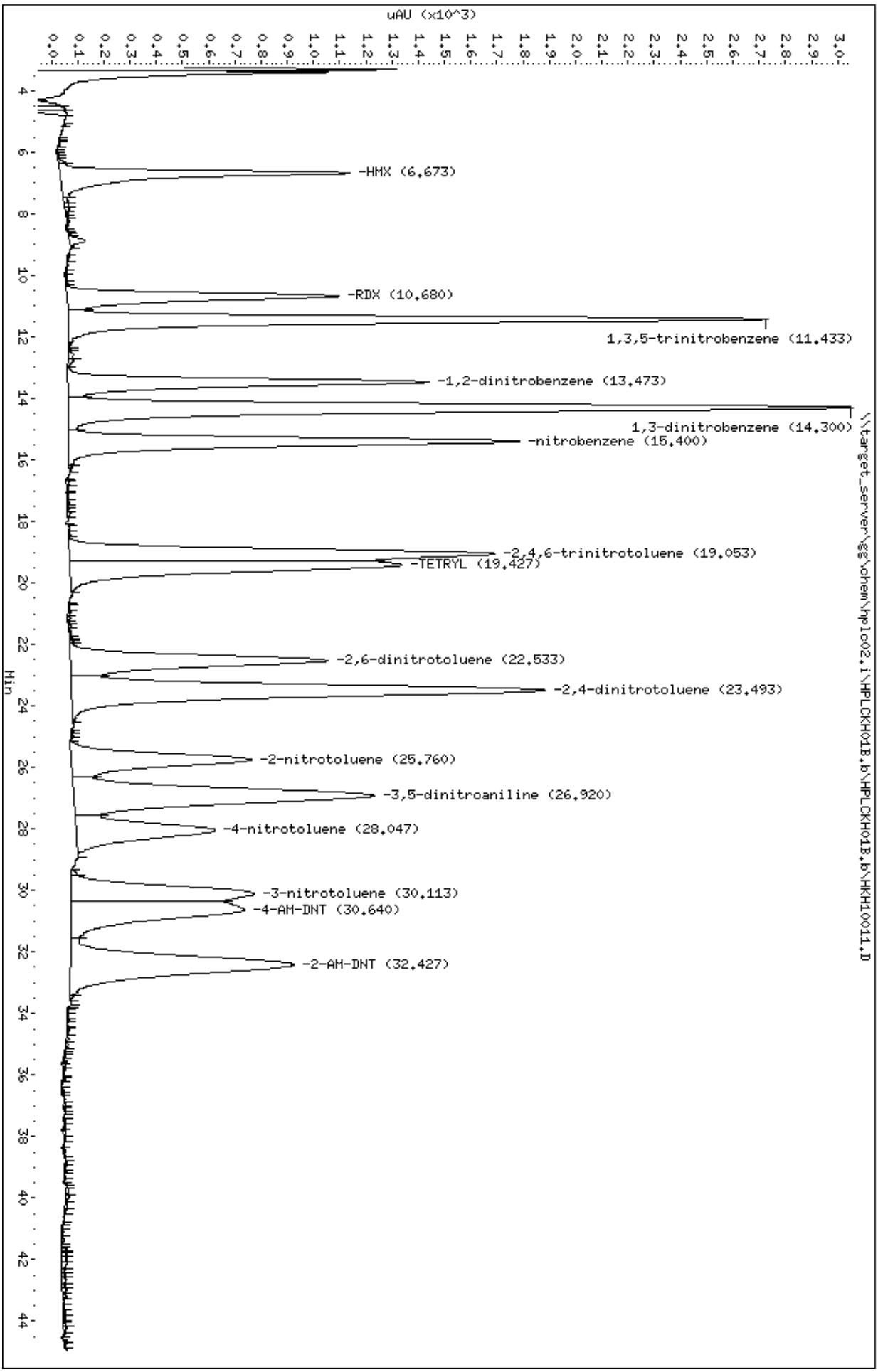
Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.673	6.678	-0.005	1108	0.25000	0.262	
4	RDX	10.679	10.684	-0.005	1038	0.25000	0.257	
5	1,3,5-trinitrobenzene	11.433	11.431	0.002	2674	0.25000	0.254	
$ 2	1,2-dinitrobenzene	13.473	13.478	-0.005	1379	0.25000	0.255	
6	1,3-dinitrobenzene	14.299	14.304	-0.005	2994	0.25000	0.253	
7	nitrobenzene	15.399	15.411	-0.012	1720	0.25000	0.253	
10	2,4,6-trinitrotoluene	19.053	19.064	-0.011	1624	0.25000	0.252	
9	TETRYL	19.426	19.424	0.002	1267	0.25000	0.249(a)	
13	2,6-dinitrotoluene	22.533	22.538	-0.005	981	0.25000	0.252	
14	2,4-dinitrotoluene	23.493	23.511	-0.018	1809	0.25000	0.251	
15	2-nitrotoluene	25.759	25.764	-0.005	686	0.25000	0.249(a)	
52	3,5-dinitroaniline	26.919	26.931	-0.012	1145	0.25000	0.250	
16	4-nitrotoluene	28.046	28.058	-0.012	531	0.25000	0.248(a)	
17	3-nitrotoluene	30.113	30.111	0.002	701	0.25000	0.253	
11	4-AM-DNT	30.639	30.651	-0.012	663	0.25000	0.253	
12	2-AM-DNT	32.426	32.464	-0.038	854	0.25000	0.253	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Date : 01-AUG-2017 12:05
Client ID:
Sample Info: WG210620-12
Purge Volume: 0.5
Column phase: Acclaim Exp E2
Instrument: hplc02,i
Operator: AAB
Column diameter: 4.60
\\target_server\gg\chem\hplc02,i\HPLCKH01B,b\HPLCKH01B,b\HKH10011,D
uAU (x10^3)
Min
-HMX (6.673)
-RDX (10.680)
1,3,5-trinitrobenzene (11.433)
-1,2-dinitrobenzene (13.473)
1,3-dinitrobenzene (14.300)
-nitrobenzene (15.400)
-2,4,6-trinitrotoluene (19.053)
-TETRYL (19.427)
-2,6-dinitrotoluene (22.533)
-2,4-dinitrotoluene (23.493)
-2-nitrotoluene (25.760)
-3,5-dinitroaniline (26.920)
-4-nitrotoluene (28.047)
-3-nitrotoluene (30.113)
-4-AM-DNT (30.640)
-2-AM-DNT (32.427)

Data File: HKH10012.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10012.D
Lab Smp Id: WG210620-11
Inj Date : 01-AUG-2017 12:54
Operator : AAB Inst ID: hplc02.i
Smp Info : WG210620-11
Misc Info :
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 12:54 Cal File: HKH10012.D
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

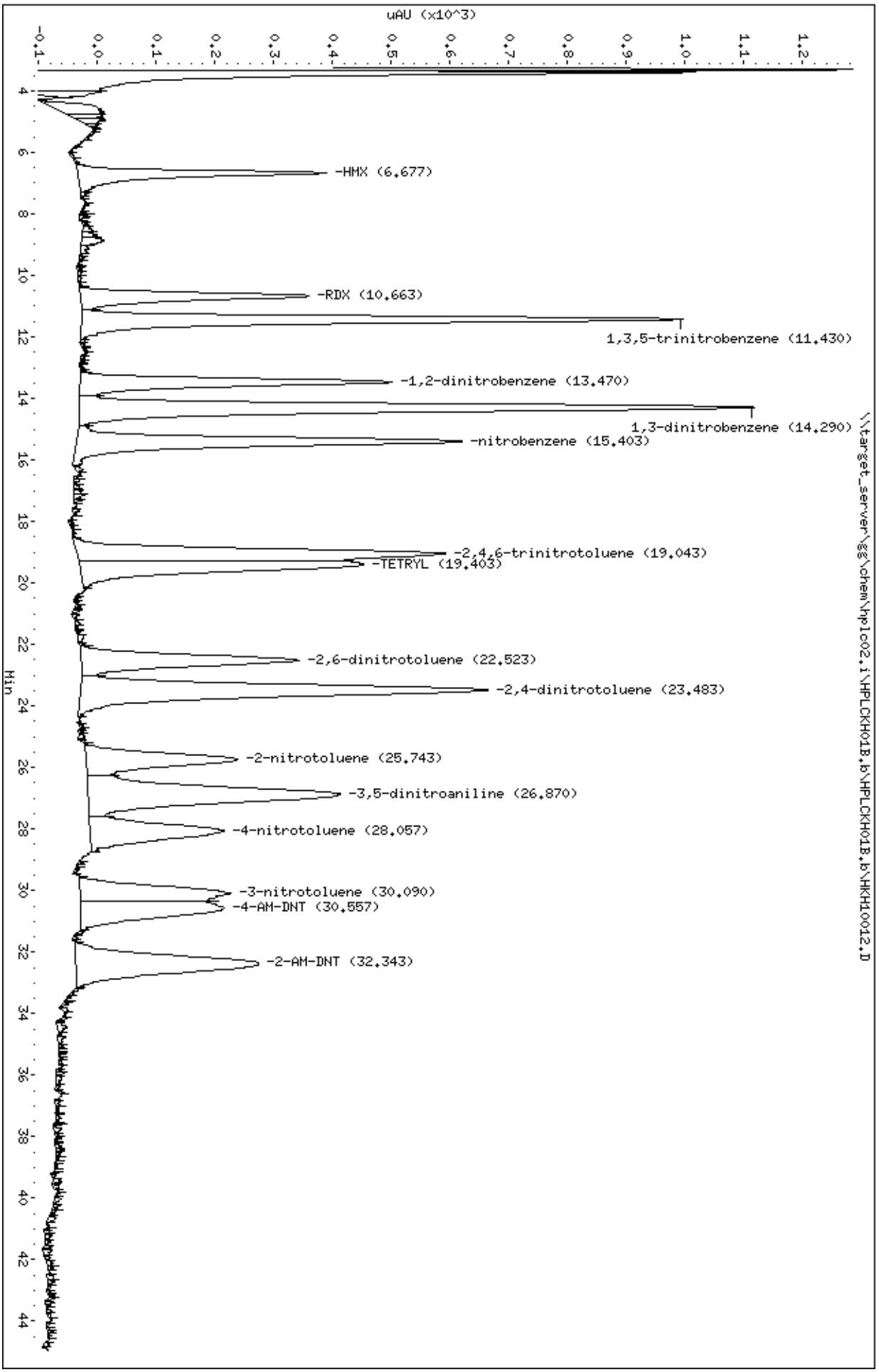
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.676	6.678	-0.002	424	0.10000	0.0860(a)	
4	RDX	10.663	10.684	-0.021	389	0.10000	0.0976(a)	
5	1,3,5-trinitrobenzene	11.430	11.431	-0.001	1024	0.10000	0.0970(a)	
$ 2	1,2-dinitrobenzene	13.470	13.478	-0.008	530	0.10000	0.0968	
6	1,3-dinitrobenzene	14.290	14.304	-0.014	1148	0.10000	0.0963(a)	
7	nitrobenzene	15.403	15.411	-0.008	655	0.10000	0.0956(a)	
10	2,4,6-trinitrotoluene	19.043	19.064	-0.021	627	0.10000	0.0940(a)	
9	TETRYL	19.403	19.424	-0.021	482	0.10000	0.0879(a)	
13	2,6-dinitrotoluene	22.523	22.538	-0.015	369	0.10000	0.0936(a)	
14	2,4-dinitrotoluene	23.483	23.511	-0.028	692	0.10000	0.0940(a)	
15	2-nitrotoluene	25.743	25.764	-0.021	257	0.10000	0.0969(a)	
52	3,5-dinitroaniline	26.870	26.931	-0.061	428	0.10000	0.0906(a)	
16	4-nitrotoluene	28.056	28.058	-0.002	227	0.10000	0.107(a)	
17	3-nitrotoluene	30.090	30.111	-0.021	256	0.10000	0.0912(aM)	M9
11	4-AM-DNT	30.556	30.651	-0.095	244	0.10000	0.0932(aM)	M9
12	2-AM-DNT	32.343	32.464	-0.121	311	0.10000	0.0874(aM)	M9

AAB
10:41 am, Aug 02, 2017

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.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Date : 01-AUG-2017 12:54
Client ID:
Sample Info: WG210620-11
Purge Volume: 0.5
Column phase: Acclaim Exp E2
Instrument: hplc02.i
Operator: AAB
Column diameter: 4.60
\\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10012.D
uAU (x10^3)
Min
-HMX (6.677)
-RDX (10.663)
1,3,5-trinitrobenzene (11.430)
-1,2-dinitrobenzene (13.470)
1,3-dinitrobenzene (14.290)
-nitrobenzene (15.403)
-2,4,6-trinitrotoluene (19.043)
-TETRYL (19.403)
-2,6-dinitrotoluene (22.523)
-2,4-dinitrotoluene (23.483)
-2-nitrotoluene (25.743)
-3,5-dinitroaniline (26.870)
-4-nitrotoluene (28.057)
-3-nitrotoluene (30.090)
-4-AM-DNT (30.557)
-2-AM-DNT (32.343)

Data File: HKH10013.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10013.D
Lab Smp Id: WG210620-10
Inj Date : 01-AUG-2017 13:44
Operator : AAB Inst ID: hplc02.i
Smp Info : WG210620-10
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 13:44 Cal File: HKH10013.D
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

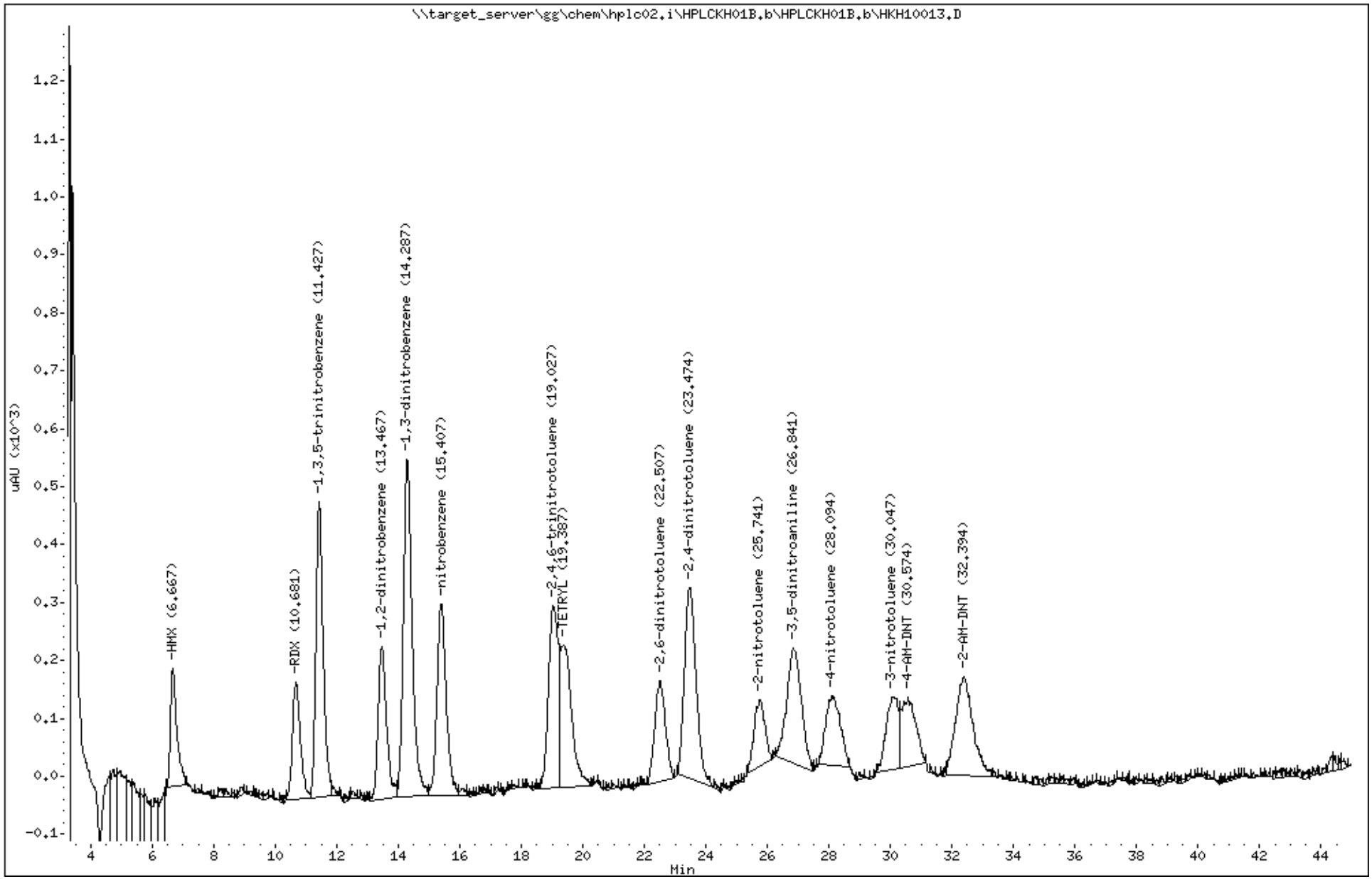
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.667	6.678	-0.011	204	0.05000	0.0456(aM)	M2
4	RDX	10.680	10.684	-0.004	202	0.05000	0.0517(a)	
5	1,3,5-trinitrobenzene	11.427	11.431	-0.004	508	0.05000	0.0473(a)	
$ 2	1,2-dinitrobenzene	13.467	13.478	-0.011	263	0.05000	0.0463(a)	
6	1,3-dinitrobenzene	14.287	14.304	-0.017	581	0.05000	0.0474(a)	
7	nitrobenzene	15.407	15.411	-0.004	331	0.05000	0.0469(a)	
10	2,4,6-trinitrotoluene	19.027	19.064	-0.037	313	0.05000	0.0430(a)	
9	TETRYL	19.387	19.424	-0.037	244	0.05000	0.0365(a)	
13	2,6-dinitrotoluene	22.507	22.538	-0.031	172	0.05000	0.0410(a)	
14	2,4-dinitrotoluene	23.473	23.511	-0.038	329	0.05000	0.0413(a)	
15	2-nitrotoluene	25.740	25.764	-0.024	115	0.05000	0.0385(aM)	M9
52	3,5-dinitroaniline	26.840	26.931	-0.091	199	0.05000	0.0375(a)	
16	4-nitrotoluene	28.093	28.058	0.035	120	0.05000	0.0410(aM)	M9
17	3-nitrotoluene	30.047	30.111	-0.064	124	0.05000	0.0361(aM)	M9
11	4-AM-DNT	30.573	30.651	-0.078	118	0.05000	0.0319(aM)	M9
12	2-AM-DNT	32.393	32.464	-0.071	171	0.05000	0.0429(a)	

AAB
10:41 am, Aug 02, 2017

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10013.D
Date : 01-AUG-2017 13:44
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-10
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000214

REISSUE

Data File: HKH10014.D
Report Date: 02-Aug-2017 09:55

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10014.D
Lab Smp Id: WG210620-9
Inj Date : 01-AUG-2017 14:33
Operator : AAB Inst ID: hplc02.i
Smp Info : WG210620-9
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\E2016A.m\E2016A.m
Meth Date : 02-Aug-2017 09:51 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

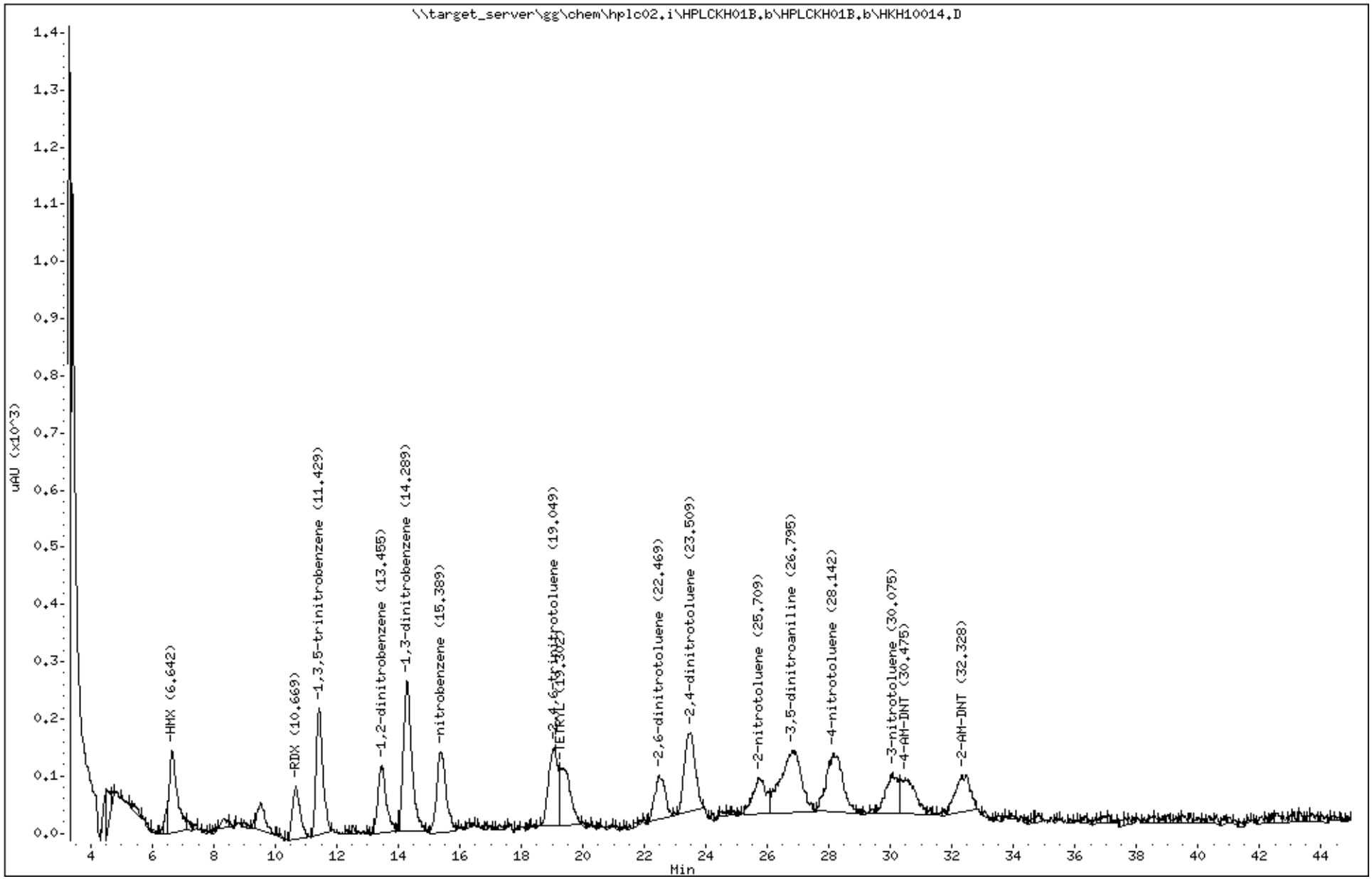
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.641	6.678	-0.037	143	0.02500	0.0300(a)	
4	RDX	10.668	10.684	-0.016	92	0.02500	0.0248(a)	
5	1,3,5-trinitrobenzene	11.428	11.431	-0.003	222	0.02500	0.0207(a)	
$ 2	1,2-dinitrobenzene	13.455	13.478	-0.023	117	0.02500	0.0199(a)	
6	1,3-dinitrobenzene	14.288	14.304	-0.016	264	0.02500	0.0210(a)	
7	nitrobenzene	15.388	15.411	-0.023	142	0.02500	0.0197(a)	
10	2,4,6-trinitrotoluene	19.048	19.064	-0.016	135	0.02500	0.0161(aM)	M9
9	TETRYL	19.301	19.424	-0.123	98	0.02500	0.00888(aM)	M6
13	2,6-dinitrotoluene	22.468	22.538	-0.070	76	0.02500	0.0172(aM)	M9
14	2,4-dinitrotoluene	23.508	23.511	-0.003	136	0.02500	0.0155(aM)	M9
15	2-nitrotoluene	25.708	25.764	-0.056	63	0.02500	0.0199(aM)	M9
52	3,5-dinitroaniline	26.795	26.931	-0.136	109	0.02500	0.0182(aM)	M9
16	4-nitrotoluene	28.141	28.058	0.083	101	0.02500	0.0301(aM)	M9
17	3-nitrotoluene	30.075	30.111	-0.036	72	0.02500	0.0175(aM)	M9
11	4-AM-DNT	30.475	30.651	-0.176	63	0.02500	0.0117(aM)	M6
12	2-AM-DNT	32.328	32.464	-0.136	65	0.02500	0.0123(aM)	M9

AAB
10:41 am, Aug 02, 2017

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCKH01B.b\HPLCKH01B.b\HKH10014.D
Date : 01-AUG-2017 14:33
Client ID:
Instrument: hplc02.i
Sample Info: WG210620-9
Purge Volume: 0.5
Operator: AAB
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000216

REISSUE

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File IDs : HLC10037.D, HLC10036.D, HLC10035.D, HLC10034.D, HLC10033.D, HLC10032.D, HLC10031.D

SDG: SL2133
Instrument ID: HPLC02
Calibration Date(s): 20-MAR-18 14:54, 20-MAR-18 18:05

	0.025000(Level 1	0.050000(Level 2	0.100000(Level 3	0.250000(Level 4	0.500000(Level 5	1.0000 Level 6	2.0000 Level 7	New Crv	b	m1	%RSD	Max %RSD	
NITROGLYCERIN	5440	5685	5280	5392	5454	5917	5425	AVG		5513	3.90686	20.00000	O
PETN	3020	2970	2465	3064	2834	3010	2768	AVG		2876	7.31282	15.00000	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: Explosives
Lab Smp Id: WG225143-8
Level: LOW Operator: AC
Data Type: LC DATA SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: ngpetnedgn.sub
Method File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Misc Info: WG225143,WG225143,WG225143-5,SL2295-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
3 Ethylene Glycol Di	20.0	19.5	97.34	30-150
8 NITROGLYCERIN	20.0	18.5	92.69	80-120
18 PETN	20.0	19.6	97.78	80-120

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Lab Smp Id: WG225143-8
Inj Date : 20-MAR-2018 18:37
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-8,SL2295
Misc Info : WG225143,WG225143,WG225143-5,SL2295-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 15 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

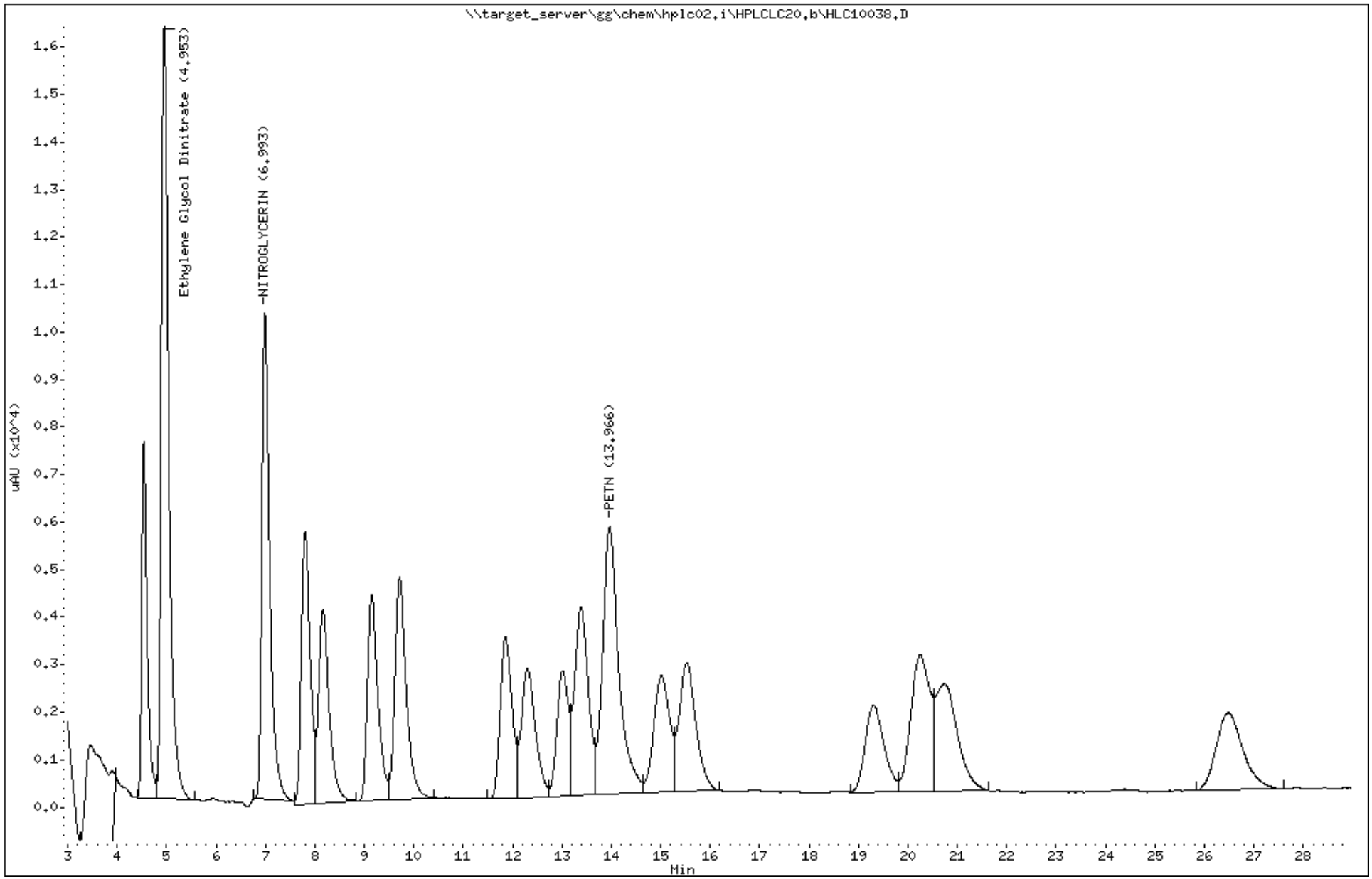
					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	
8 NITROGLYCERIN	6.992	6.997	-0.005	10220	1.85373	18.5(M)	M2
18 PETN	13.966	13.963	0.003	5624	1.95560	19.6	
3 Ethylene Glycol Dinitrate	4.952	4.957	-0.005	16261	1.94680	19.5	

QC Flag Legend

M - Compound response manually integrated.

AAB
2:37 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10038.D
Date : 20-MAR-2018 18:37
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-8,SL2295
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000220

REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

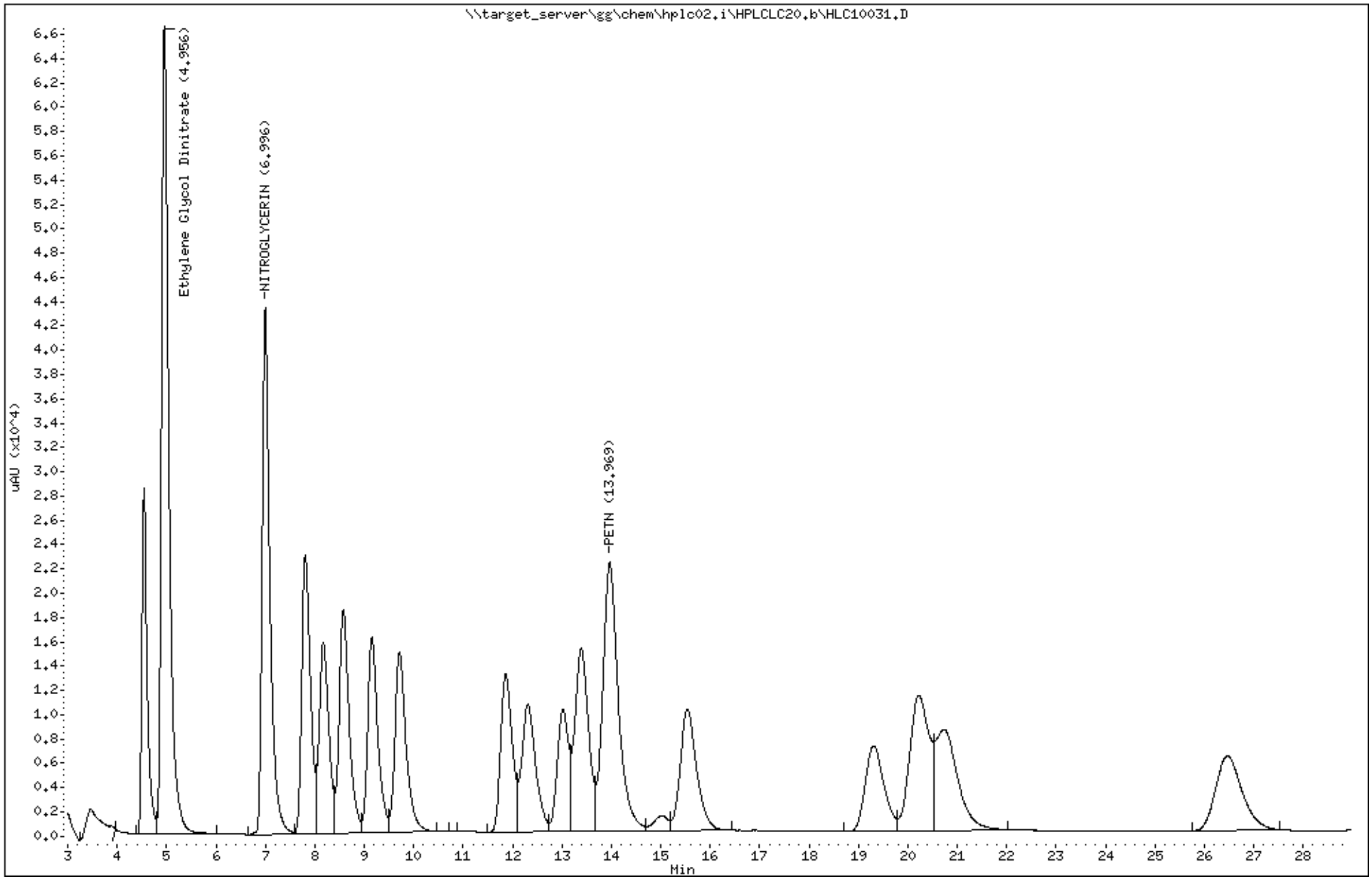
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 14:54   Cal File: HLC10031.D
Als bottle: 8   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.995	6.997	-0.002	43399	8.00000	7.98
18 PETN	13.969	13.963	0.006	22141	8.00000	7.90
3 Ethylene Glycol Dinitrate	4.955	4.957	-0.002	66513	8.00000	8.00

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10031.D
Date : 20-MAR-2018 14:54
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-7
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000222

REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10032.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10032.D
Lab Smp Id: WG225143-6
Inj Date : 20-MAR-2018 15:26
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:26   Cal File: HLC10032.D
Als bottle: 9   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

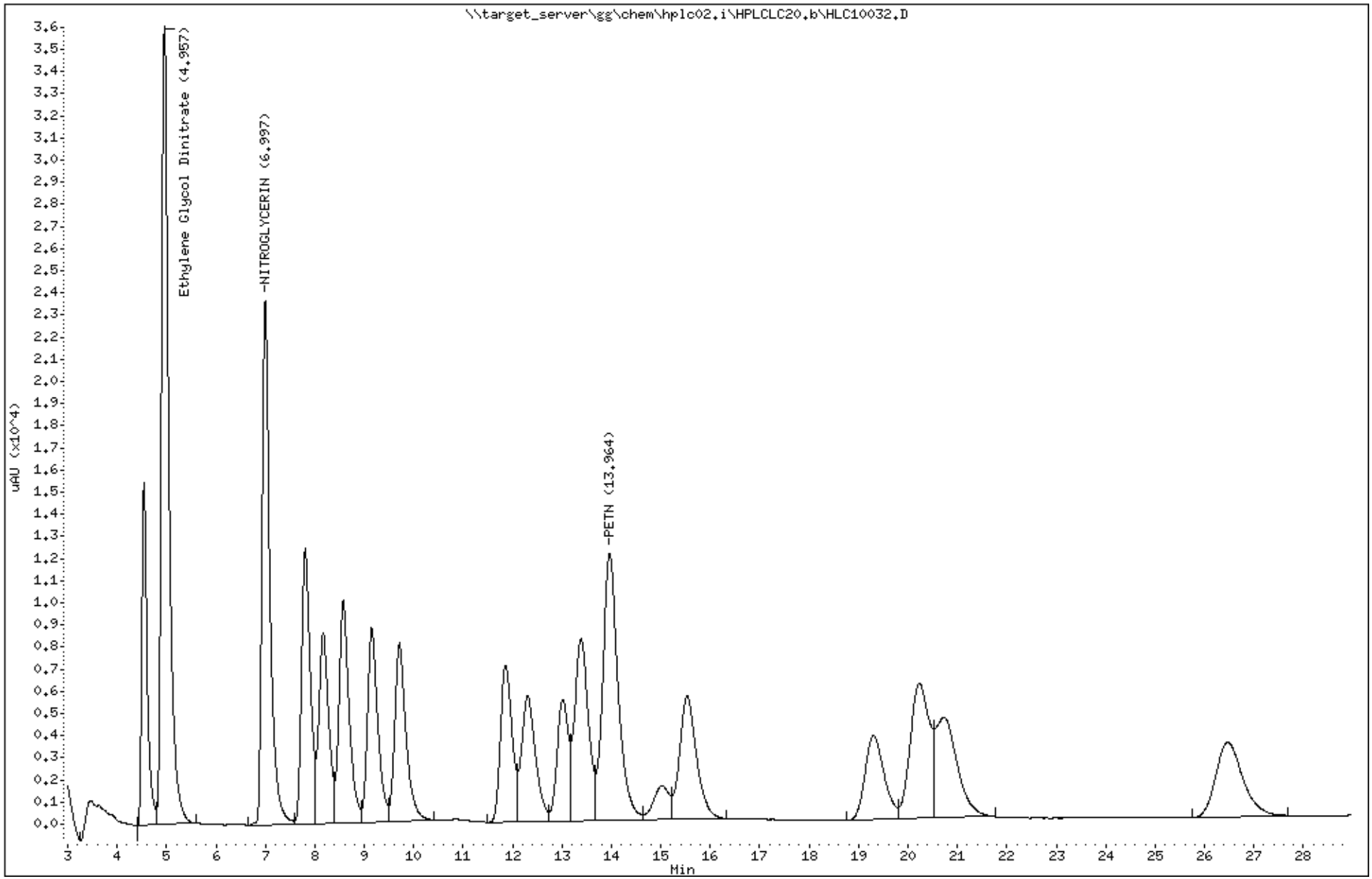
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	23668	4.00000	4.27	
18 PETN	13.963	13.963	0.000	12041	4.00000	4.43	
3 Ethylene Glycol Dinitrate	4.957	4.957	0.000	36056	4.00000	2.84(M)	M2

QC Flag Legend

M - Compound response manually integrated.

2:39 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10032.D
Date : 20-MAR-2018 15:26
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-6
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000224
REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10033.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10033.D
Lab Smp Id: WG225143-5
Inj Date : 20-MAR-2018 15:58
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:58   Cal File: HLC10033.D
Als bottle: 10   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

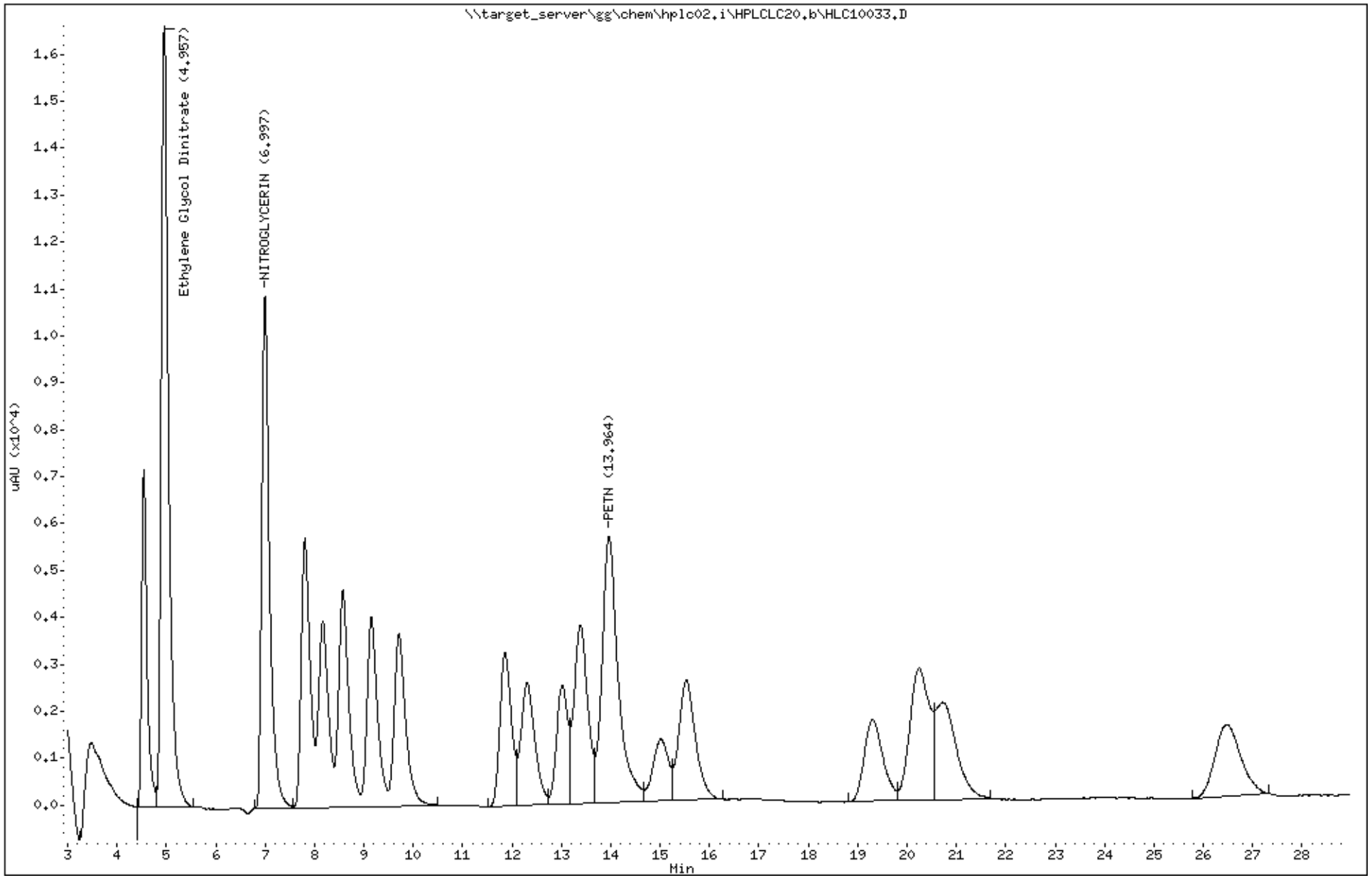
						AMOUNTS		
						CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE		(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.997	6.997	0.000	10907	2.00000	2.00(aM)	M2
18	PETN	13.963	13.963	0.000	5668	2.00000	2.00(a)	
3	Ethylene Glycol Dinitrate	4.957	4.957	0.000	16637	2.00000	2.00(aM)	

2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10033.D
Date : 20-MAR-2018 15:58
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-5
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000226

REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10034.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10034.D
Lab Smp Id: WG225143-4
Inj Date : 20-MAR-2018 16:30
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-4
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 16:30   Cal File: HLC10034.D
Als bottle: 11   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

						AMOUNTS		
						CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE		(ug/mL)	(ug/mL)	
8	NITROGLYCERIN	6.997	6.997	0.000	5392	1.00000	0.974(aM)	M2
18	PETN	13.977	13.963	0.014	3064	1.00000	1.13(a)	
3	Ethylene Glycol Dinitrate	4.950	4.957	-0.007	8157	1.00000	0.705(aM)	

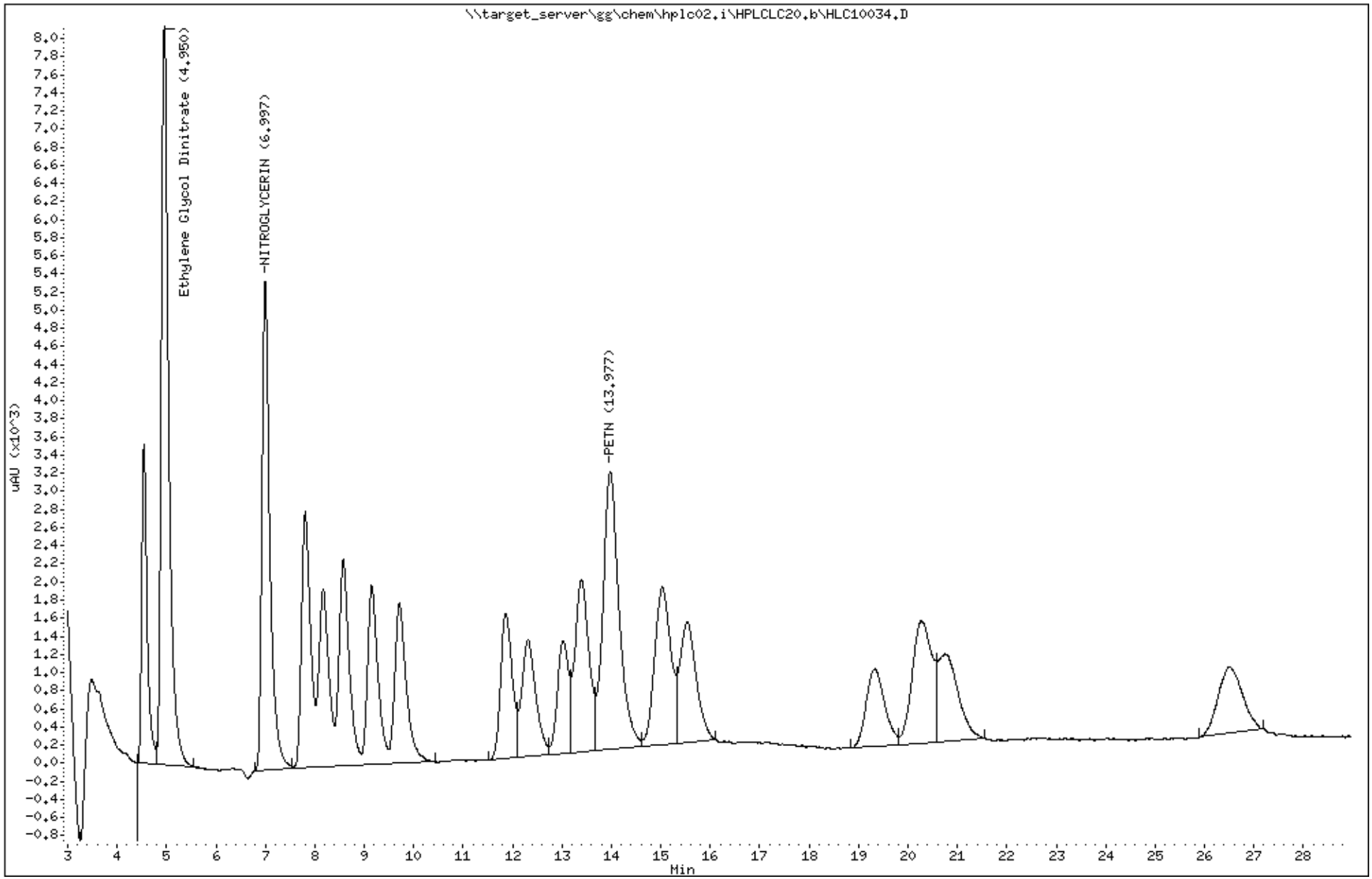


2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10034.D
Date : 20-MAR-2018 16:30
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-4
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000228

REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10035.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10035.D
Lab Smp Id: WG225143-3
Inj Date : 20-MAR-2018 17:01
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-3
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:01   Cal File: HLC10035.D
Als bottle: 12   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

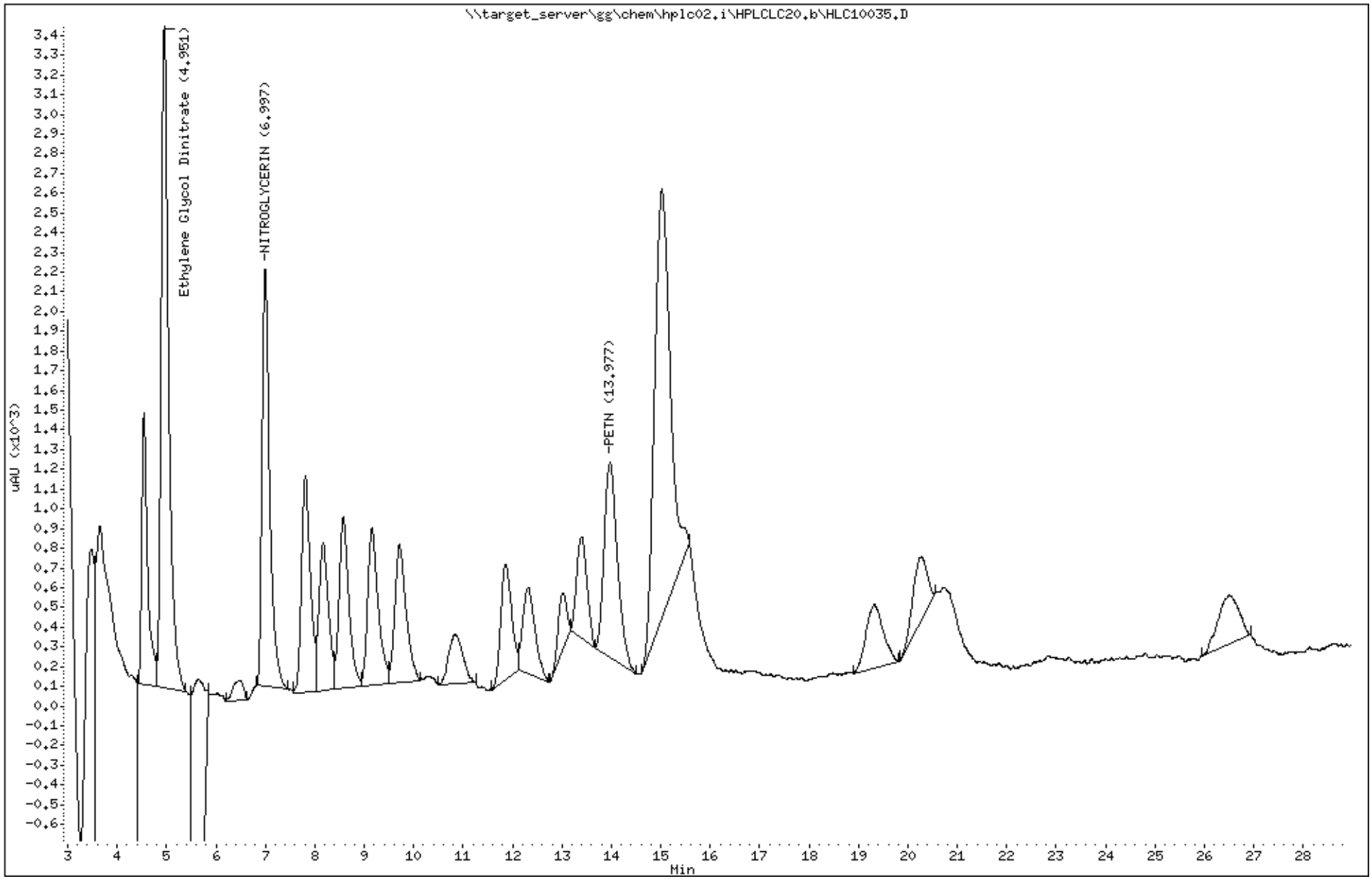
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.997	6.997	0.000	2112	0.40000	0.383(aM)	M2
18 PETN	13.977	13.963	0.014	986	0.40000	0.363(a)	
3 Ethylene Glycol Dinitrate	4.950	4.957	-0.007	3354	0.40000	0.402(aM)	

2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10035.D
Date : 20-MAR-2018 17:01
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-3
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000230
REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10036.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10036.D
Lab Smp Id: WG225143-2
Inj Date : 20-MAR-2018 17:33
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-2
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:33   Cal File: HLC10036.D
Als bottle: 13   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

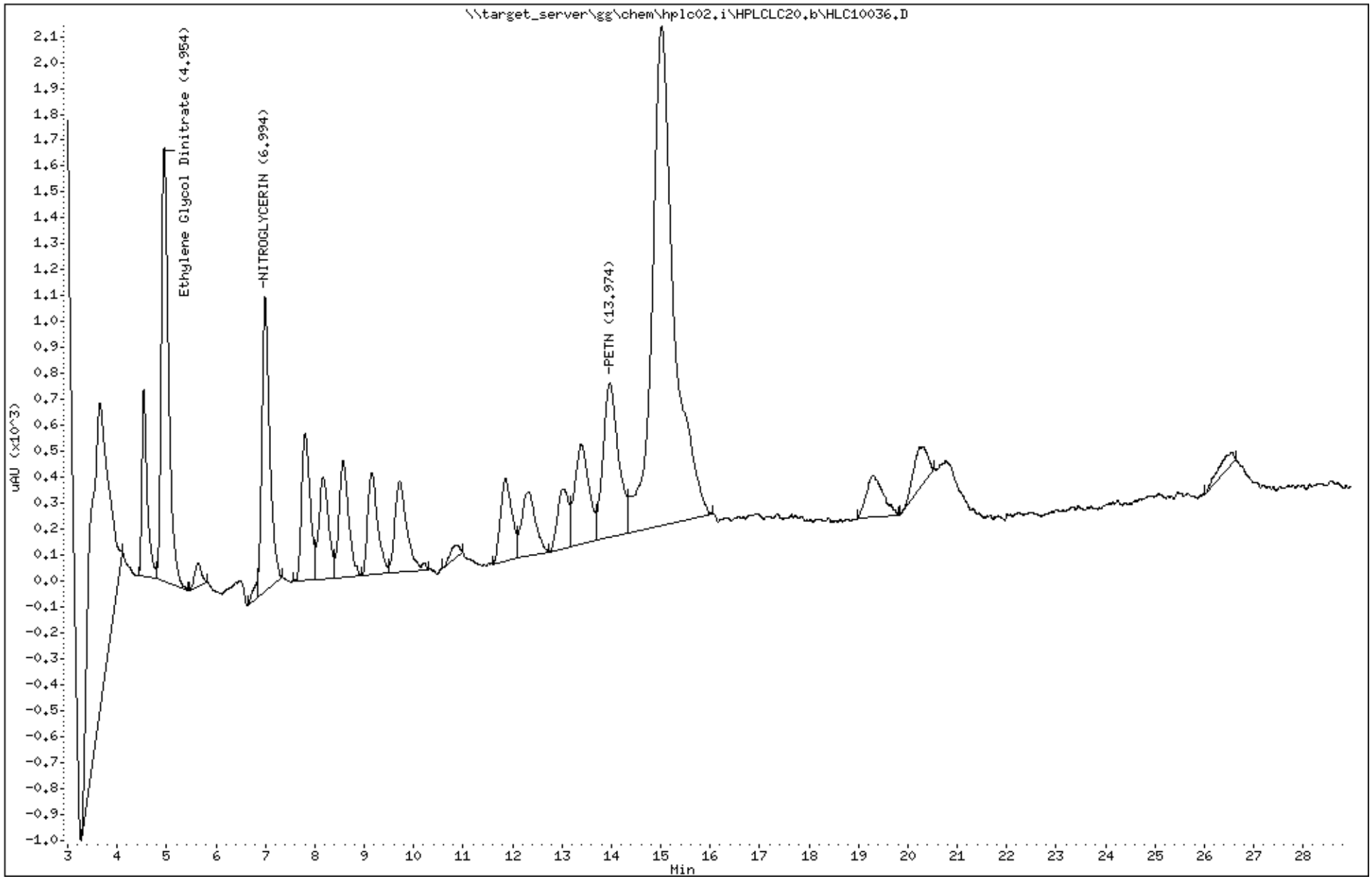
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.994	6.997	-0.003	1137	0.20000	0.206(aM)	M2
18 PETN	13.974	13.963	0.011	594	0.20000	0.218(a)	
3 Ethylene Glycol Dinitrate	4.954	4.957	-0.003	1670	0.20000	0.200(a)	

2:42 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10036.D
Date : 20-MAR-2018 17:33
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-2
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000232
REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10037.D
Report Date: 26-Mar-2018 13:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10037.D
Lab Smp Id: WG225143-1
Inj Date : 20-MAR-2018 18:05
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-1
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 14   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetnedgn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

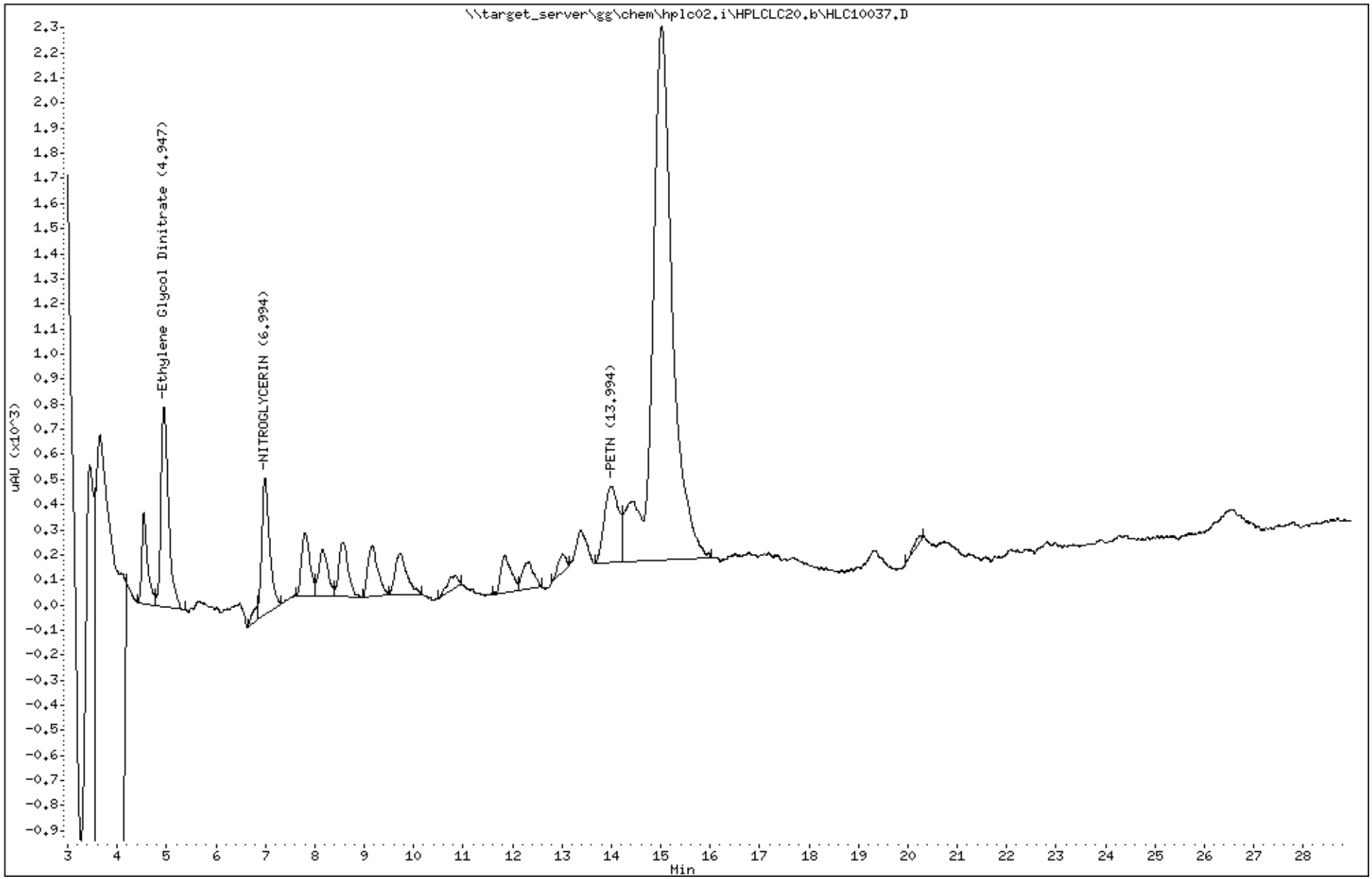
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.993	6.997	-0.004	544	0.10000	0.0987(aM)	M3
18 PETN	13.993	13.963	0.030	302	0.10000	0.105(aM)	
3 Ethylene Glycol Dinitrate	4.947	4.957	-0.010	793	0.10000	0.0949(a)	

2:43 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10037.D
Date : 20-MAR-2018 18:05
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-1
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000234

REISSUE

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2133
Project : Cornhusker Army Ammunition Plant
Instrument ID: HPLC02
Lab File IDs : HLC10037.D HLC10036.D HLC10035.D HLC10034.D HLC10033.D HLC10032.D HLC10031.D
Calibration Date(s): 20-MAR-18 14:54 20-MAR-18 18:05

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7		Crv				Max	
	0.025000(	0.050000(	0.100000(	0.250000(	0.500000(	1.0000	2.0000		New	b	m1	%RSD	%RSD	
HMX	5320	5440	5140	5296	5378	5810	5351		AVG		5391	3.83807	20.00000	O
RDX	75.00000	225	466	1287	2694	5888	10895		LNR	0.00587	5552	0.99828	0.99000	O
1,3,5-trinitrobenzene	3240	3680	3770	3628	3744	4074	3686		AVG		3689	6.66990	20.00000	O
1,3-dinitrobenzene	6680	7280	7410	7508	7512	8198	7518		AVG		7444	5.99405	20.00000	O
TETRYL	2240	2660	2530	2424	2550	2797	2541		AVG		2535	6.90733	20.00000	O
nitrobenzene	6760	6820	6610	6736	6892	7418	6831		AVG		6867	3.77157	20.00000	O
2,4,6-trinitrotoluene	2600	2520	2510	2460	2478	2672	2445		AVG		2526	3.24744	20.00000	O
2-AM-DNT	5360	5700	5640	5720	5838	6280	5787		AVG		5761	4.78978	20.00000	O
4-AM-DNT	4200	4040	4240	4260	4366	4695	4318		AVG		4303	4.68155	20.00000	O
2,6-dinitrotoluene	101	175	345	733	1390	3147	5661		LNR	-0.01275	2869	0.99714	0.99000	O
2,4-dinitrotoluene	4280	4700	4560	4552	4620	5008	4610		AVG		4619	4.68458	20.00000	O
2-nitrotoluene	2520	2760	2900	2944	2952	3214	2937		AVG		2890	7.31192	20.00000	O
3-nitrotoluene	3360	3180	3390	3404	3136	3585	3225		AVG		3326	4.69272	20.00000	O
4-nitrotoluene	2280	1980	2350	2484	2298	2635	2370		AVG		2342	8.60342	20.00000	O
1,2-dinitrobenzene	4680	4500	4480	4532	4640	4978	4582		AVG		4627	3.69030	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00508
Sample Matrix: LIQUID Fraction: Explosives
Lab Smp Id: WG225143-8
Level: LOW Operator: AC
Data Type: LC DATA SampleType: LCS
SpikeList File: IND.spk Quant Type: ESTD
Sublist File: SW8330A.sub
Method File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Misc Info: WG225143,WG225143,WG225143-5,SL2295-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 HMX	5.00	5.25	104.96	80-120
4 RDX	5.00	5.14	102.73	80-120
5 1,3,5-trinitrobenz	5.00	5.21	104.21	80-120
6 1,3-dinitrobenzene	5.00	5.16	103.31	80-120
7 nitrobenzene	5.00	5.09	101.80	80-120
9 TETRYL	5.00	5.52	110.47	80-120
10 2,4,6-trinitrotolu	5.00	5.09	101.89	80-120
11 4-AM-DNT	5.00	5.41	108.21	80-120
12 2-AM-DNT	5.00	5.19	103.77	80-120
13 2,6-dinitrotoluene	5.00	4.91	98.26	80-120
14 2,4-dinitrotoluene	5.00	5.23	104.54	80-120
15 2-nitrotoluene	5.00	5.27	105.48	80-120
16 4-nitrotoluene	5.00	5.12	102.37	80-120
17 3-nitrotoluene	5.00	4.93	98.57	80-120
51 3,5-Dinitroaniline	5.00	4.94	98.91	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 2 1,2-dinitrobenzene	10.0	0.000	*	83-119

Data File: HLC10038.D
Report Date: 26-Mar-2018 14:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10038.D
Lab Smp Id: WG225143-8
Inj Date : 20-MAR-2018 18:37
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-8,SL2295
Misc Info : WG225143,WG225143,WG225143-5,SL2295-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 15 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

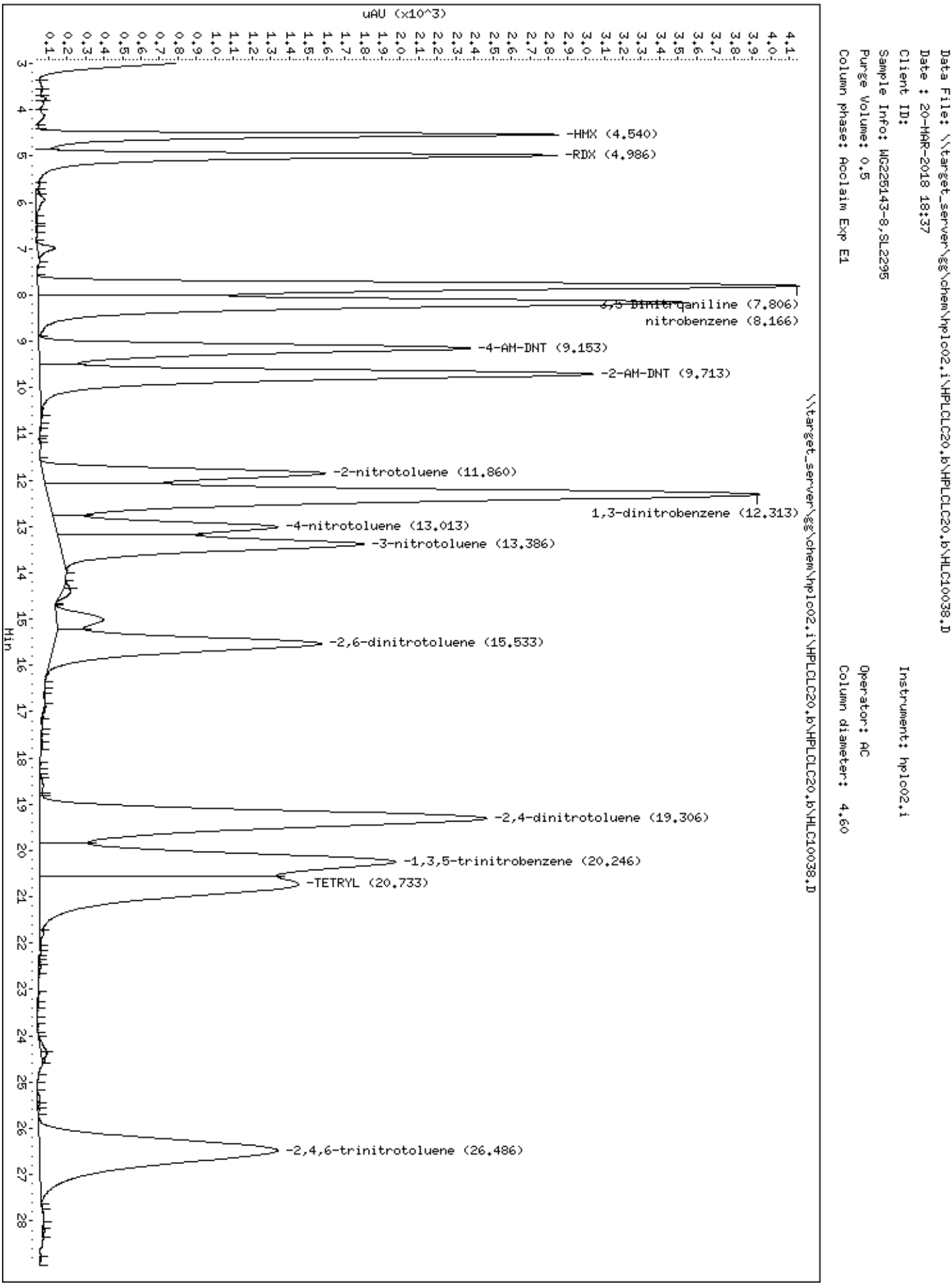
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.539	4.542	-0.003	2829	0.52480	5.25(M)	M5
4	RDX	4.986	4.989	-0.003	2819	0.51364	5.14(M)	
51	3,5-Dinitroaniline	7.806	7.809	-0.003	4113	0.49457	4.94	
7	nitrobenzene	8.166	8.175	-0.009	3495	0.50898	5.09	
11	4-AM-DNT	9.152	9.155	-0.003	2328	0.54105	5.41	
12	2-AM-DNT	9.712	9.715	-0.003	2989	0.51886	5.19	
15	2-nitrotoluene	11.859	11.862	-0.003	1524	0.52741	5.27	
6	1,3-dinitrobenzene	12.312	12.315	-0.003	3845	0.51654	5.16	
16	4-nitrotoluene	13.012	13.022	-0.010	1199	0.51186	5.12	
17	3-nitrotoluene	13.386	13.389	-0.003	1639	0.49284	4.93	
13	2,6-dinitrotoluene	15.532	15.542	-0.010	1446	0.49132	4.91	
14	2,4-dinitrotoluene	19.306	19.309	-0.003	2414	0.52268	5.23	
5	1,3,5-trinitrobenzene	20.246	20.222	0.024	1922	0.52103	5.21	
9	TETRYL	20.732	20.722	0.010	1400	0.55236	5.52	
10	2,4,6-trinitrotoluene	26.486	26.469	0.017	1287	0.50943	5.09	

AAB
2:37 pm, Mar 26, 2018

QC Flag Legend

M - Compound response manually integrated.



REISSUE **Katahdin Analytical Services 2000238**

Data File: HLC10031.D
Report Date: 26-Mar-2018 13:10

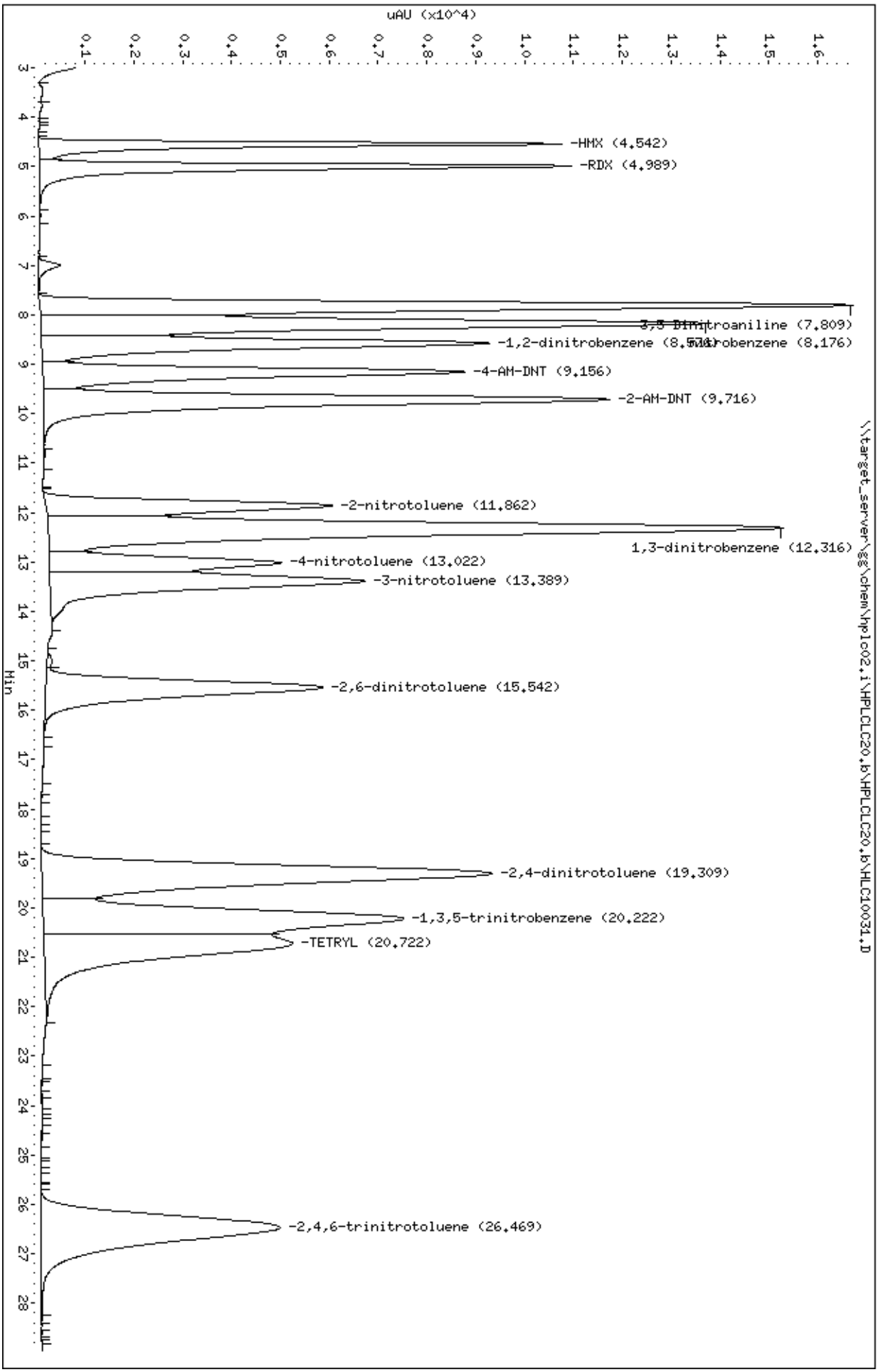
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10031.D
Lab Smp Id: WG225143-7
Inj Date : 20-MAR-2018 14:54
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-7
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 14:54   Cal File: HLC10031.D
Als bottle: 8   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.542	4.542	0.000	10701	2.00000	2.00	
4	RDX	4.989	4.989	0.000	10895	2.00000	2.00	
51	3,5-Dinitroaniline	7.809	7.809	0.000	16640	2.00000	2.00	
7	nitrobenzene	8.175	8.175	0.000	13661	2.00000	2.00	
$ 2	1,2-dinitrobenzene	8.575	8.575	0.000	9164	2.00000	2.00	
11	4-AM-DNT	9.155	9.155	0.000	8636	2.00000	2.00	
12	2-AM-DNT	9.715	9.715	0.000	11574	2.00000	2.00	
15	2-nitrotoluene	11.862	11.862	0.000	5874	2.00000	2.00	
6	1,3-dinitrobenzene	12.315	12.315	0.000	15036	2.00000	2.00	
16	4-nitrotoluene	13.022	13.022	0.000	4740	2.00000	2.00	
17	3-nitrotoluene	13.389	13.389	0.000	6449	2.00000	2.00	
13	2,6-dinitrotoluene	15.542	15.542	0.000	5661	2.00000	2.00	
14	2,4-dinitrotoluene	19.309	19.309	0.000	9219	2.00000	2.00	
5	1,3,5-trinitrobenzene	20.222	20.222	0.000	7372	2.00000	2.00	
9	TETRYL	20.722	20.722	0.000	5082	2.00000	2.00	
10	2,4,6-trinitrotoluene	26.469	26.469	0.000	4889	2.00000	2.00	



REISSUE **Katahdin Analytical Services 2000240**

Data File: HLC10032.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10032.D
Lab Smp Id: WG225143-6
Inj Date : 20-MAR-2018 15:26
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-6
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:26 Cal File: HLC10032.D
Als bottle: 9 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

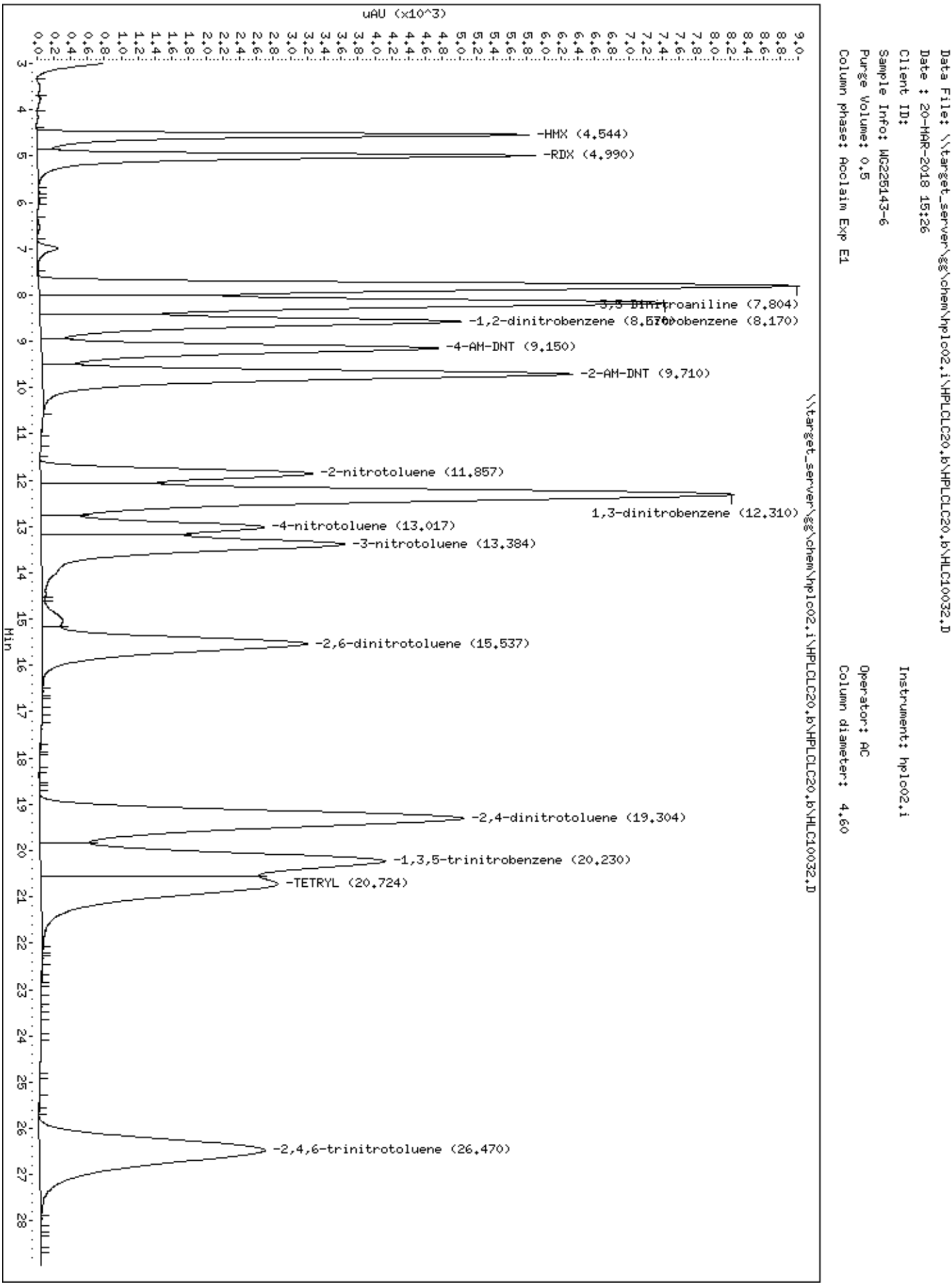
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.543	4.542	0.001	5810	1.00000	1.08(M)	M5
4	RDX	4.990	4.989	0.001	5888	1.00000	1.21(M)	
51	3,5-Dinitroaniline	7.803	7.809	-0.006	8996	1.00000	1.08	
7	nitrobenzene	8.170	8.175	-0.005	7418	1.00000	1.08	
$ 2	1,2-dinitrobenzene	8.570	8.575	-0.005	4978	1.00000	1.08	
11	4-AM-DNT	9.150	9.155	-0.005	4695	1.00000	1.09	
12	2-AM-DNT	9.710	9.715	-0.005	6280	1.00000	1.09	
15	2-nitrotoluene	11.857	11.862	-0.005	3214	1.00000	1.11	
6	1,3-dinitrobenzene	12.310	12.315	-0.005	8198	1.00000	1.11	
16	4-nitrotoluene	13.017	13.022	-0.005	2635	1.00000	1.19	
17	3-nitrotoluene	13.383	13.389	-0.006	3585	1.00000	1.13	
13	2,6-dinitrotoluene	15.537	15.542	-0.005	3147	1.00000	1.06	
14	2,4-dinitrotoluene	19.303	19.309	-0.006	5008	1.00000	1.09	
5	1,3,5-trinitrobenzene	20.230	20.222	0.008	4074	1.00000	1.35	
9	TETRYL	20.723	20.722	0.001	2797	1.00000	1.42	
10	2,4,6-trinitrotoluene	26.470	26.469	0.001	2672	1.00000	1.17	

2:43 pm, Mar 26, 2018

QC Flag Legend

M - Compound response manually integrated.



REISSUE **Katahdin Analytical Services 2000242**

Data File: HLC10033.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

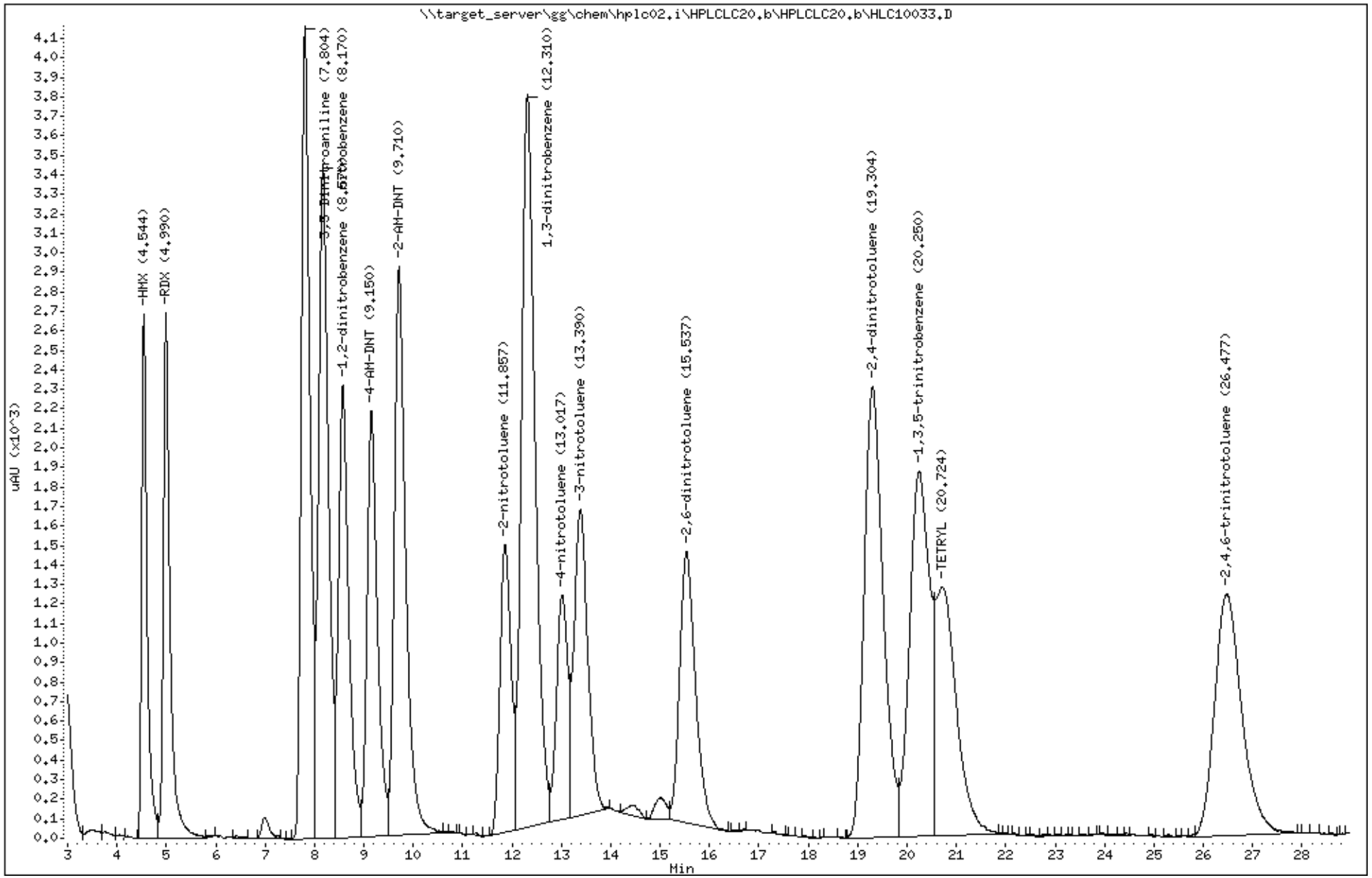
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10033.D
Lab Smp Id: WG225143-5
Inj Date : 20-MAR-2018 15:58
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-5
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 15:58   Cal File: HLC10033.D
Als bottle: 10   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

						AMOUNTS		
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
	1 HMX	4.543	4.542	0.001	2689	0.50000	0.478	
	4 RDX	4.990	4.989	0.001	2694	0.50000	0.477	
	51 3,5-Dinitroaniline	7.803	7.809	-0.006	4166	0.50000	0.487	
	7 nitrobenzene	8.170	8.175	-0.005	3446	0.50000	0.489	
$	2 1,2-dinitrobenzene	8.570	8.575	-0.005	2320	0.50000	0.490	
	11 4-AM-DNT	9.150	9.155	-0.005	2183	0.50000	0.489	
	12 2-AM-DNT	9.710	9.715	-0.005	2919	0.50000	0.489	
	15 2-nitrotoluene	11.857	11.862	-0.005	1476	0.50000	0.486	
	6 1,3-dinitrobenzene	12.310	12.315	-0.005	3756	0.50000	0.485	
	16 4-nitrotoluene	13.017	13.022	-0.005	1149	0.50000	0.472	
	17 3-nitrotoluene	13.390	13.389	0.001	1568	0.50000	0.473	
	13 2,6-dinitrotoluene	15.537	15.542	-0.005	1390	0.50000	0.476	
	14 2,4-dinitrotoluene	19.303	19.309	-0.006	2310	0.50000	0.487	
	5 1,3,5-trinitrobenzene	20.250	20.222	0.028	1872	0.50000	0.488	
	9 TETRYL	20.723	20.722	0.001	1275	0.50000	0.485	
	10 2,4,6-trinitrotoluene	26.477	26.469	0.008	1239	0.50000	0.489	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10033.D
Date : 20-MAR-2018 15:58
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-5
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



REISSUE

Katahdin Analytical Services 2000244

Data File: HLC10034.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10034.D
Lab Smp Id: WG225143-4
Inj Date : 20-MAR-2018 16:30
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-4
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 16:30   Cal File: HLC10034.D
Als bottle: 11   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

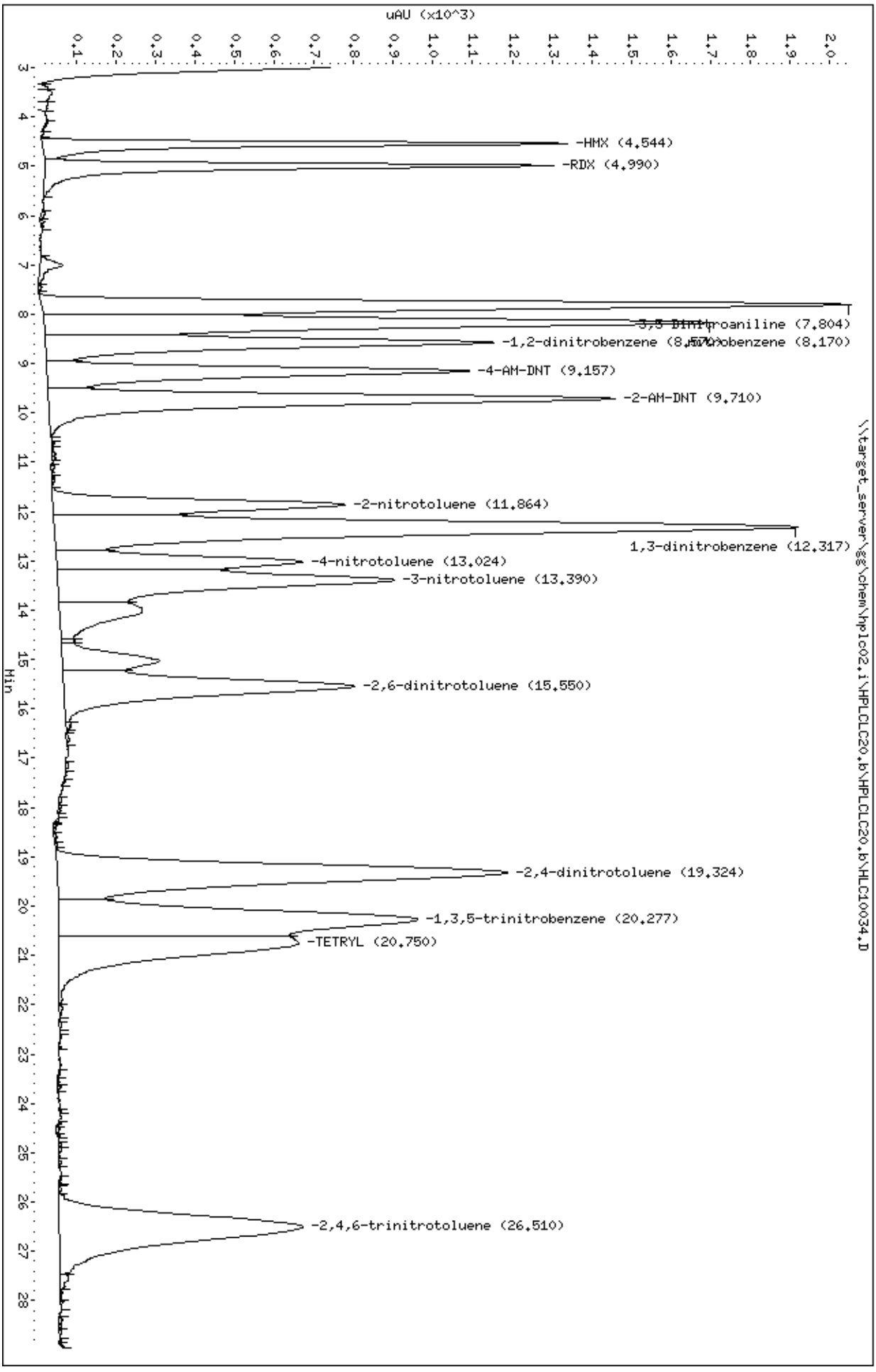
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.543	4.542	0.001	1324	0.25000	0.239(a)	
4	RDX	4.990	4.989	0.001	1287	0.25000	0.233(a)	
51	3,5-Dinitroaniline	7.803	7.809	-0.006	2044	0.25000	0.242(a)	
7	nitrobenzene	8.170	8.175	-0.005	1684	0.25000	0.242(a)	
$ 2	1,2-dinitrobenzene	8.570	8.575	-0.005	1133	0.25000	0.242(a)	
11	4-AM-DNT	9.157	9.155	0.002	1065	0.25000	0.242(a)	
12	2-AM-DNT	9.710	9.715	-0.005	1430	0.25000	0.242(a)	
15	2-nitrotoluene	11.863	11.862	0.001	736	0.25000	0.244(a)	
6	1,3-dinitrobenzene	12.317	12.315	0.002	1877	0.25000	0.244(a)	
16	4-nitrotoluene	13.023	13.022	0.001	621	0.25000	0.254	
17	3-nitrotoluene	13.390	13.389	0.001	851	0.25000	0.255	
13	2,6-dinitrotoluene	15.550	15.542	0.008	733	0.25000	0.251	
14	2,4-dinitrotoluene	19.323	19.309	0.014	1138	0.25000	0.242(a)	
5	1,3,5-trinitrobenzene	20.277	20.222	0.055	907	0.25000	0.240(a)	
9	TETRYL	20.750	20.722	0.028	606	0.25000	0.235(a)	
10	2,4,6-trinitrotoluene	26.510	26.469	0.041	615	0.25000	0.245(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



REISSUE

Katahdin Analytical Services 2000246

Data File: HLC10035.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10035.D
Lab Smp Id: WG225143-3
Inj Date : 20-MAR-2018 17:01
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-3
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:01   Cal File: HLC10035.D
Als bottle: 12   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

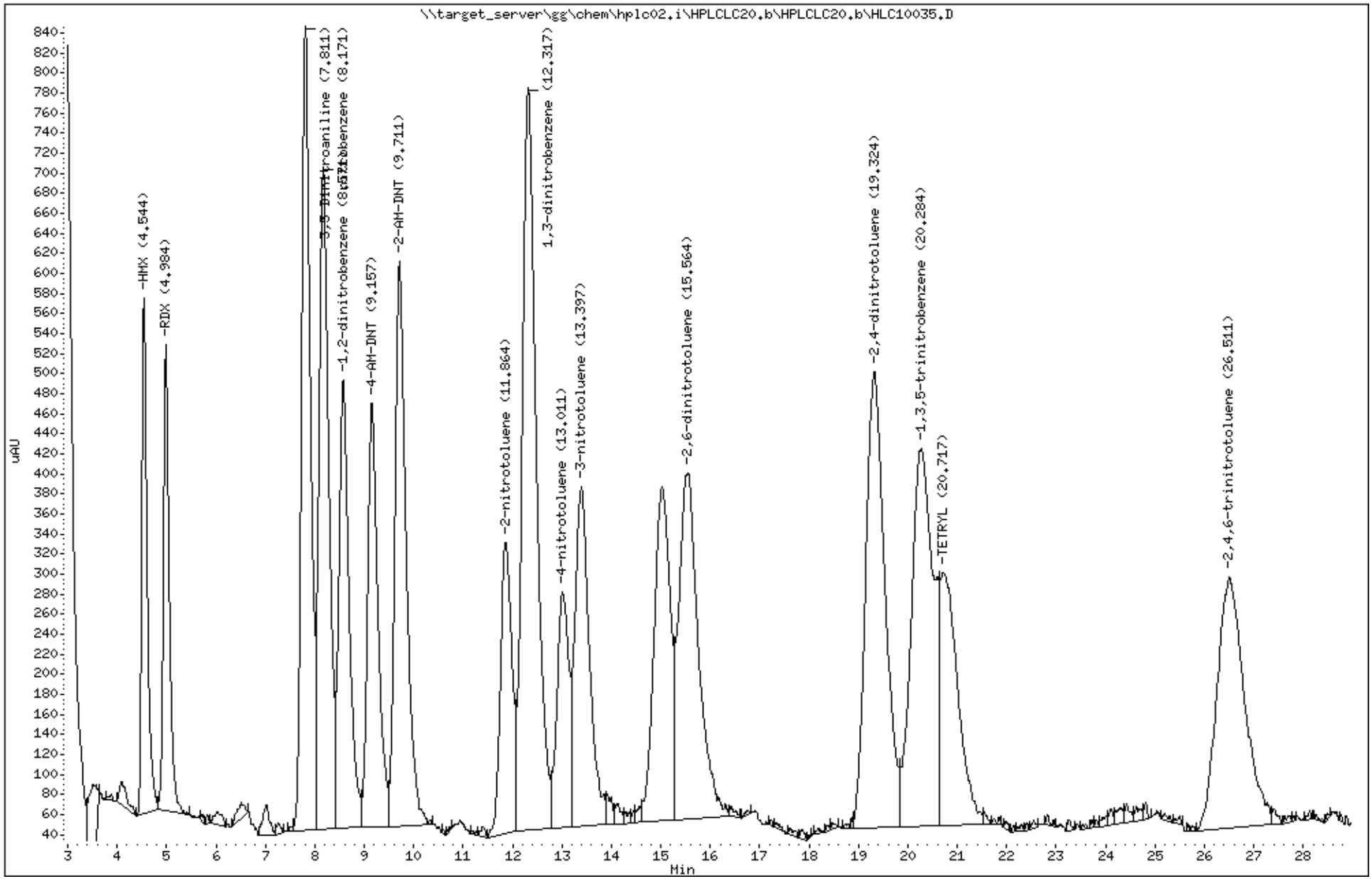
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.544	4.542	0.002	514	0.10000	0.0940(a)	
4	RDX	4.984	4.989	-0.005	466	0.10000	0.0870(a)	
51	3,5-Dinitroaniline	7.810	7.809	0.001	803	0.10000	0.0959(a)	
7	nitrobenzene	8.170	8.175	-0.005	661	0.10000	0.0958(a)	
$ 2	1,2-dinitrobenzene	8.570	8.575	-0.005	448	0.10000	0.0965(a)	
11	4-AM-DNT	9.157	9.155	0.002	424	0.10000	0.0969(a)	
12	2-AM-DNT	9.710	9.715	-0.005	564	0.10000	0.0964(a)	
15	2-nitrotoluene	11.864	11.862	0.002	290	0.10000	0.0970(a)	
6	1,3-dinitrobenzene	12.317	12.315	0.002	741	0.10000	0.0971(a)	
16	4-nitrotoluene	13.010	13.022	-0.012	235	0.10000	0.0968(a)	
17	3-nitrotoluene	13.397	13.389	0.008	339	0.10000	0.101(a)	
13	2,6-dinitrotoluene	15.564	15.542	0.022	345	0.10000	0.114(a)	
14	2,4-dinitrotoluene	19.324	19.309	0.015	456	0.10000	0.0976(a)	
5	1,3,5-trinitrobenzene	20.284	20.222	0.062	377	0.10000	0.0997(a)	
9	TETRYL	20.717	20.722	-0.005	253	0.10000	0.0985(a)	
10	2,4,6-trinitrotoluene	26.510	26.469	0.041	251	0.10000	0.0999(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10035.D
Date : 20-MAR-2018 17:01
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-3
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000248

REISSUE

Data File: HLC10036.D
Report Date: 26-Mar-2018 13:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10036.D
Lab Smp Id: WG225143-2
Inj Date : 20-MAR-2018 17:33
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-2
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 17:33   Cal File: HLC10036.D
Als bottle: 13   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

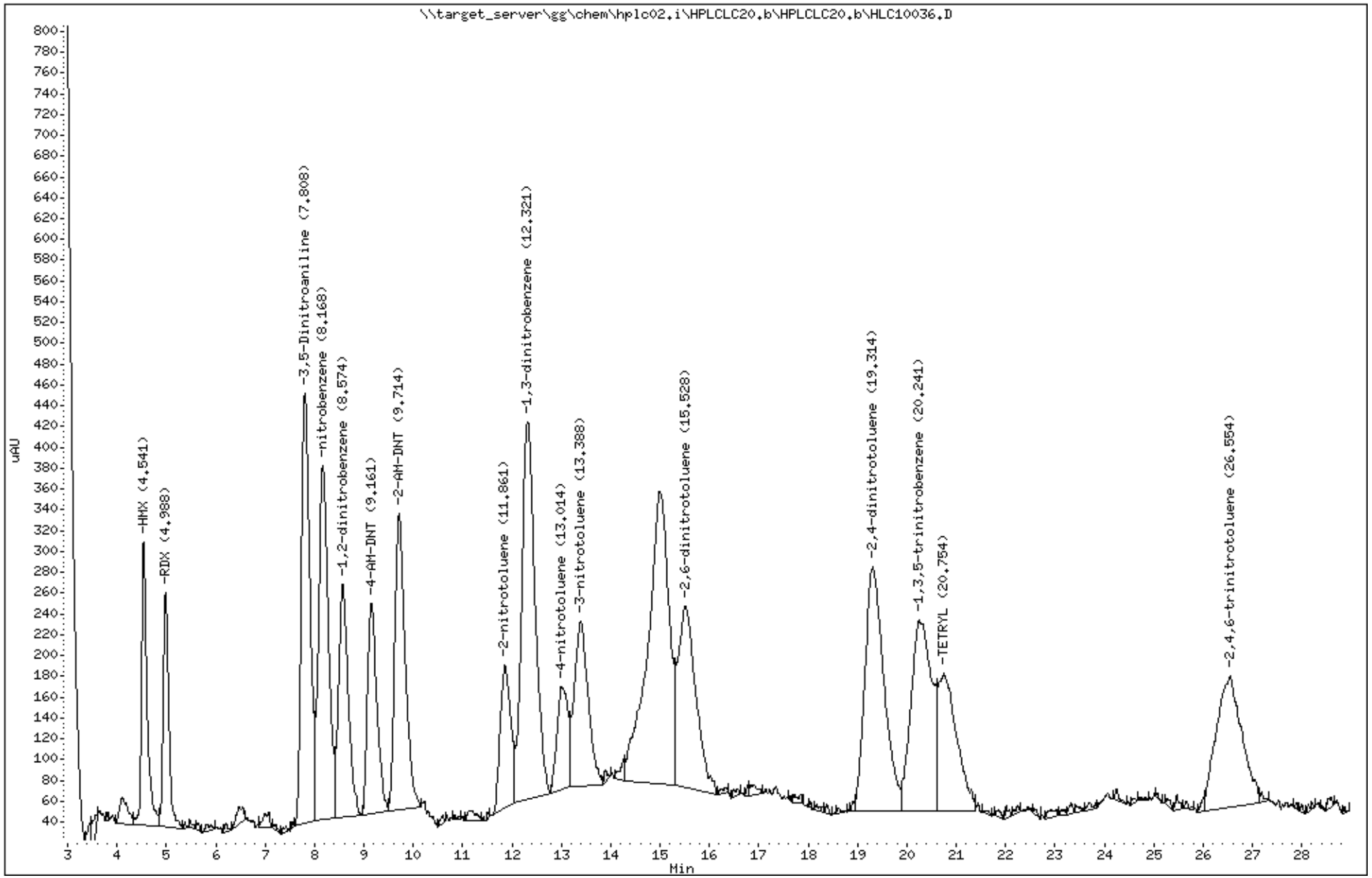
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.541	4.542	-0.001	272	0.05000	0.0504(a)	
4	RDX	4.987	4.989	-0.002	225	0.05000	0.0463(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	414	0.05000	0.0498(a)	
7	nitrobenzene	8.167	8.175	-0.008	341	0.05000	0.0497(a)	
$ 2	1,2-dinitrobenzene	8.574	8.575	-0.001	225	0.05000	0.0486(a)	
11	4-AM-DNT	9.161	9.155	0.006	202	0.05000	0.0469(a)	
12	2-AM-DNT	9.714	9.715	-0.001	285	0.05000	0.0495(a)	
15	2-nitrotoluene	11.861	11.862	-0.001	138	0.05000	0.0478(a)	
6	1,3-dinitrobenzene	12.321	12.315	0.006	364	0.05000	0.0492(a)	
16	4-nitrotoluene	13.014	13.022	-0.008	99	0.05000	0.0449(a)	
17	3-nitrotoluene	13.387	13.389	-0.002	159	0.05000	0.0502(a)	
13	2,6-dinitrotoluene	15.527	15.542	-0.015	175	0.05000	0.0588(a)	
14	2,4-dinitrotoluene	19.307	19.309	-0.002	235	0.05000	0.0508(aM)	M9
5	1,3,5-trinitrobenzene	20.241	20.222	0.019	184	0.05000	0.0548(aM)	M9
9	TETRYL	20.754	20.722	0.032	133	0.05000	0.0593(aM)	M9
10	2,4,6-trinitrotoluene	26.554	26.469	0.085	126	0.05000	0.0551(a)	

2:43 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10036.D
Date : 20-MAR-2018 17:33
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-2
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000250

REISSUE

Data File: HLC10037.D
Report Date: 26-Mar-2018 13:11

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10037.D
Lab Smp Id: WG225143-1
Inj Date : 20-MAR-2018 18:05
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-1
Misc Info :
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 14   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

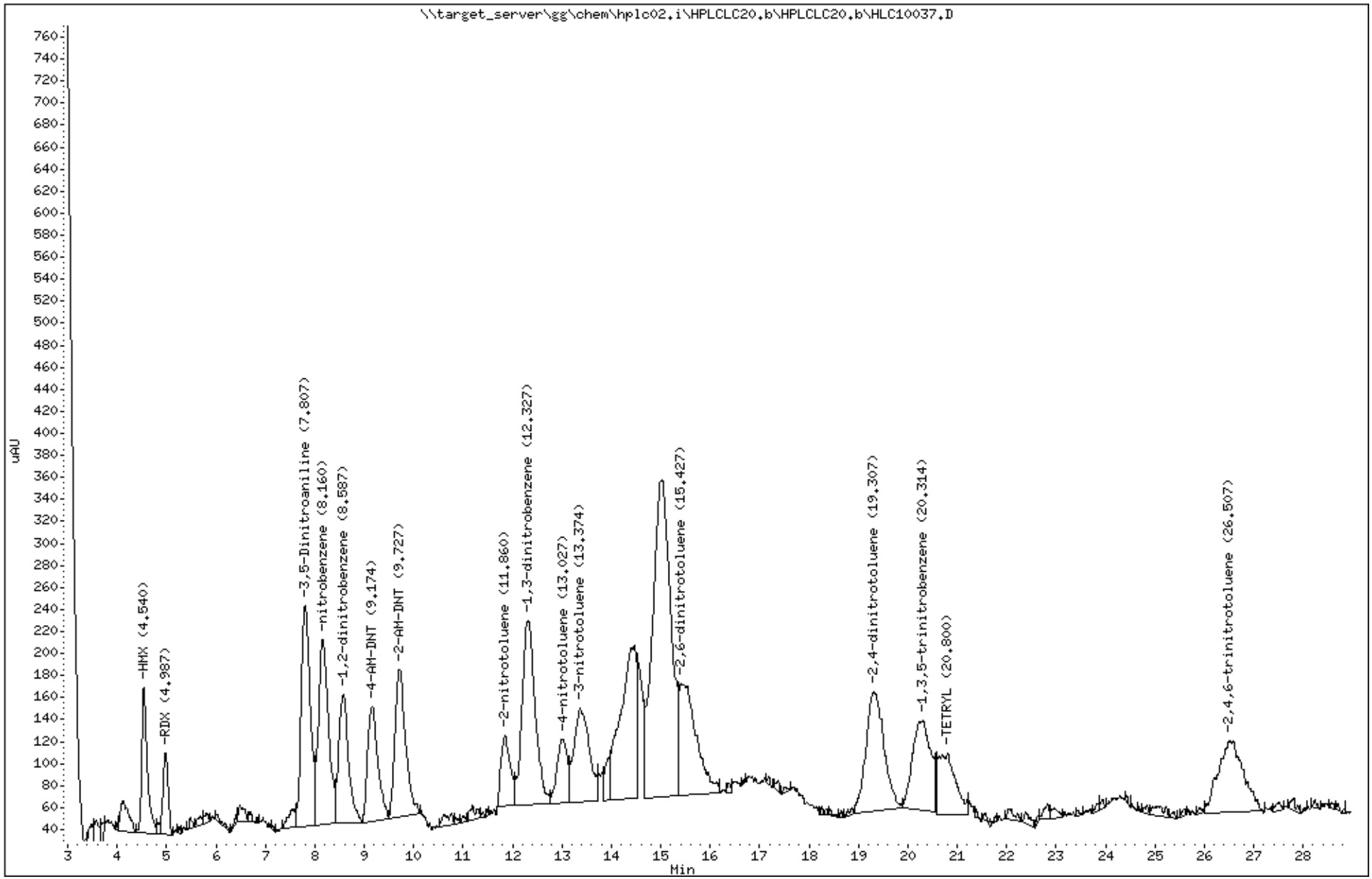
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.540	4.542	-0.002	133	0.02500	0.0247(a)	
4	RDX	4.987	4.989	-0.002	75	0.02500	0.0154(a)	
51	3,5-Dinitroaniline	7.807	7.809	-0.002	202	0.02500	0.0243(a)	
7	nitrobenzene	8.160	8.175	-0.015	169	0.02500	0.0246(a)	
$ 2	1,2-dinitrobenzene	8.587	8.575	0.012	117	0.02500	0.0253(a)	
11	4-AM-DNT	9.173	9.155	0.018	105	0.02500	0.0244(a)	
12	2-AM-DNT	9.727	9.715	0.012	134	0.02500	0.0233(a)	
15	2-nitrotoluene	11.847	11.862	-0.015	63	0.02500	0.0218(aM)	M9
6	1,3-dinitrobenzene	12.327	12.315	0.012	167	0.02500	0.0224(aM)	M9
16	4-nitrotoluene	12.993	13.022	-0.029	57	0.02500	0.0243(aM)	M9
17	3-nitrotoluene	13.373	13.389	-0.016	84	0.02500	0.0252(aM)	M9
13	2,6-dinitrotoluene	15.407	15.542	-0.135	101	0.02500	0.0312(aM)	M5
14	2,4-dinitrotoluene	19.307	19.309	-0.002	107	0.02500	0.0232(aM)	M9
5	1,3,5-trinitrobenzene	20.313	20.222	0.091	81	0.02500	0.0220(aM)	M9
9	TETRYL	20.800	20.722	0.078	56	0.02500	0.0221(aM)	M9
10	2,4,6-trinitrotoluene	26.507	26.469	0.038	65	0.02500	0.0257(aM)	M9

2:43 pm, Mar 26, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10037.D
Date : 20-MAR-2018 18:05
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-1
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000252

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-9
Lab File ID : HLC10049.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 00:26
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5412	0.010	-1.83553	20.00000	Averaged
140 PETN	2876	2882	0.010	0.19684	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10049.D
Report Date: 30-Mar-2018 11:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10049.D
Lab Smp Id: WG225143-9
Inj Date : 21-MAR-2018 00:26
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-9,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 26   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	
8 NITROGLYCERIN	6.987	6.997	-0.010	10824	1.00000	1.96(aM)	M2
18 PETN	13.954	13.963	-0.009	5763	1.00000	2.00(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

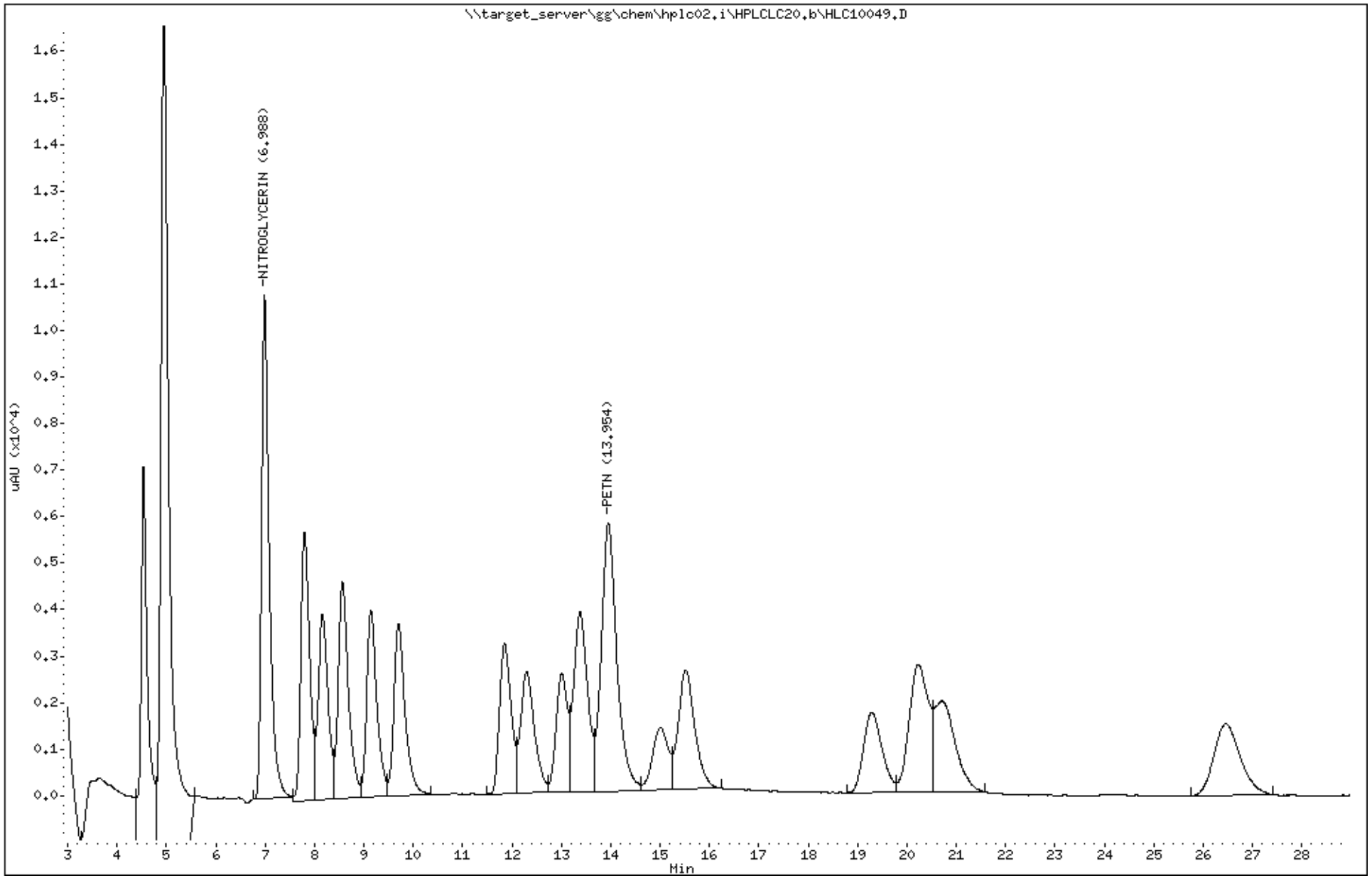
10:35 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10049.D
Date : 21-MAR-2018 00:26
Client ID:
Sample Info: WG225143-9,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000255
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-13
Lab File ID : HLC10081.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 18:38
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5380	0.010	-2.41596	20.00000	Averaged
140 PETN	2876	2806	0.010	-2.42848	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10081.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10081.D
Lab Smp Id: WG225143-13
Inj Date : 21-MAR-2018 18:38
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-13,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 58   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.975	6.975	0.000	5380	1.00000	0.976(a)
18 PETN	13.901	13.902	-0.001	2806	1.00000	0.976(a)

QC Flag Legend

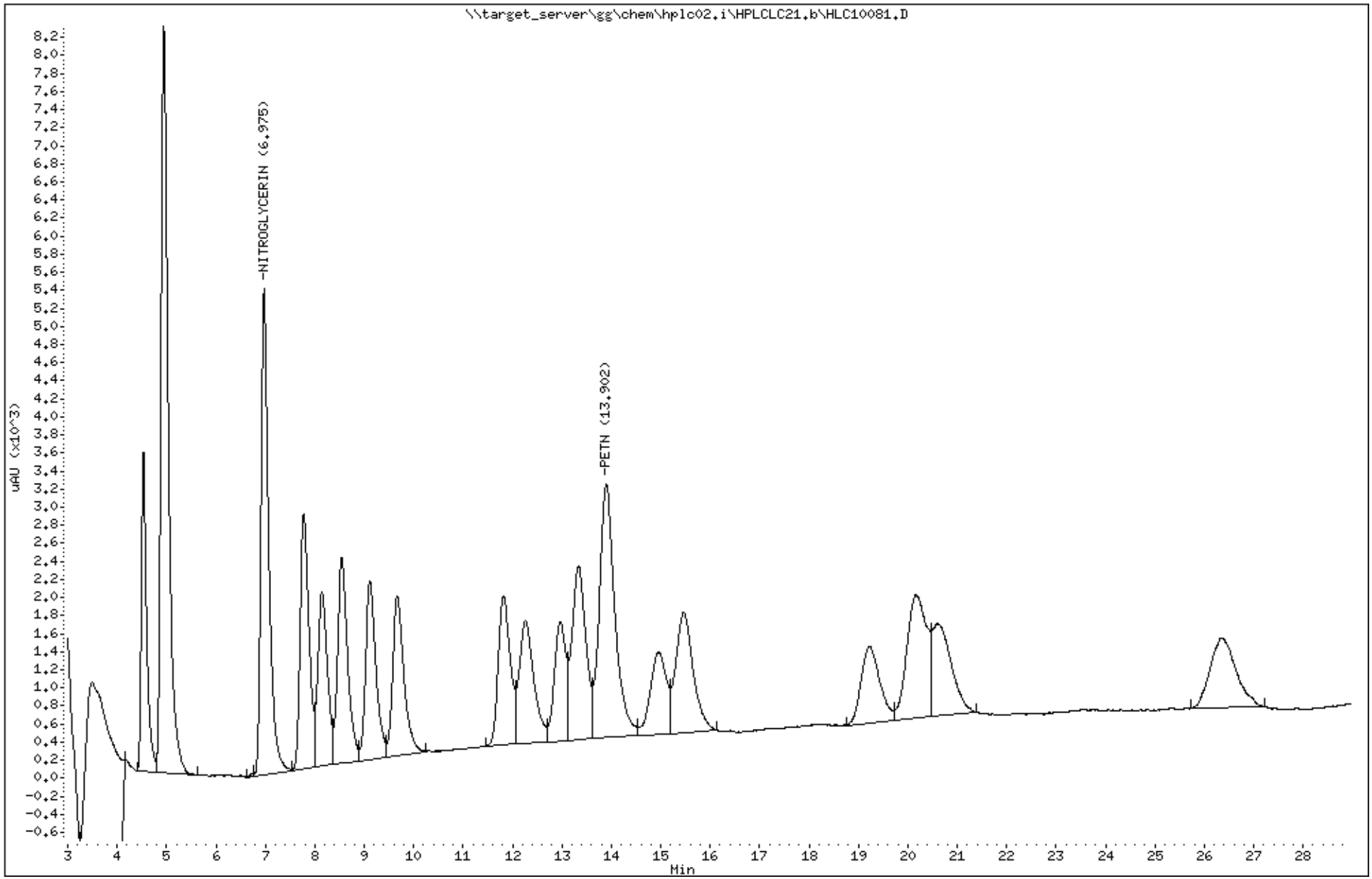
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10081.D
Date : 21-MAR-2018 18:38
Client ID:
Sample Info: WG225143-13,SL2133

Column phase: Acclaim Exp E1

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60



Katahdin Analytical Services 2000258
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-14
Lab File ID : HLC10092.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 00:27
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5396	0.010	-2.12574	20.00000	Averaged
140 PETN	2876	2806	0.010	-2.44587	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10092.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10092.D
Lab Smp Id: WG225143-14
Inj Date : 22-MAR-2018 00:27
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-14,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 69   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

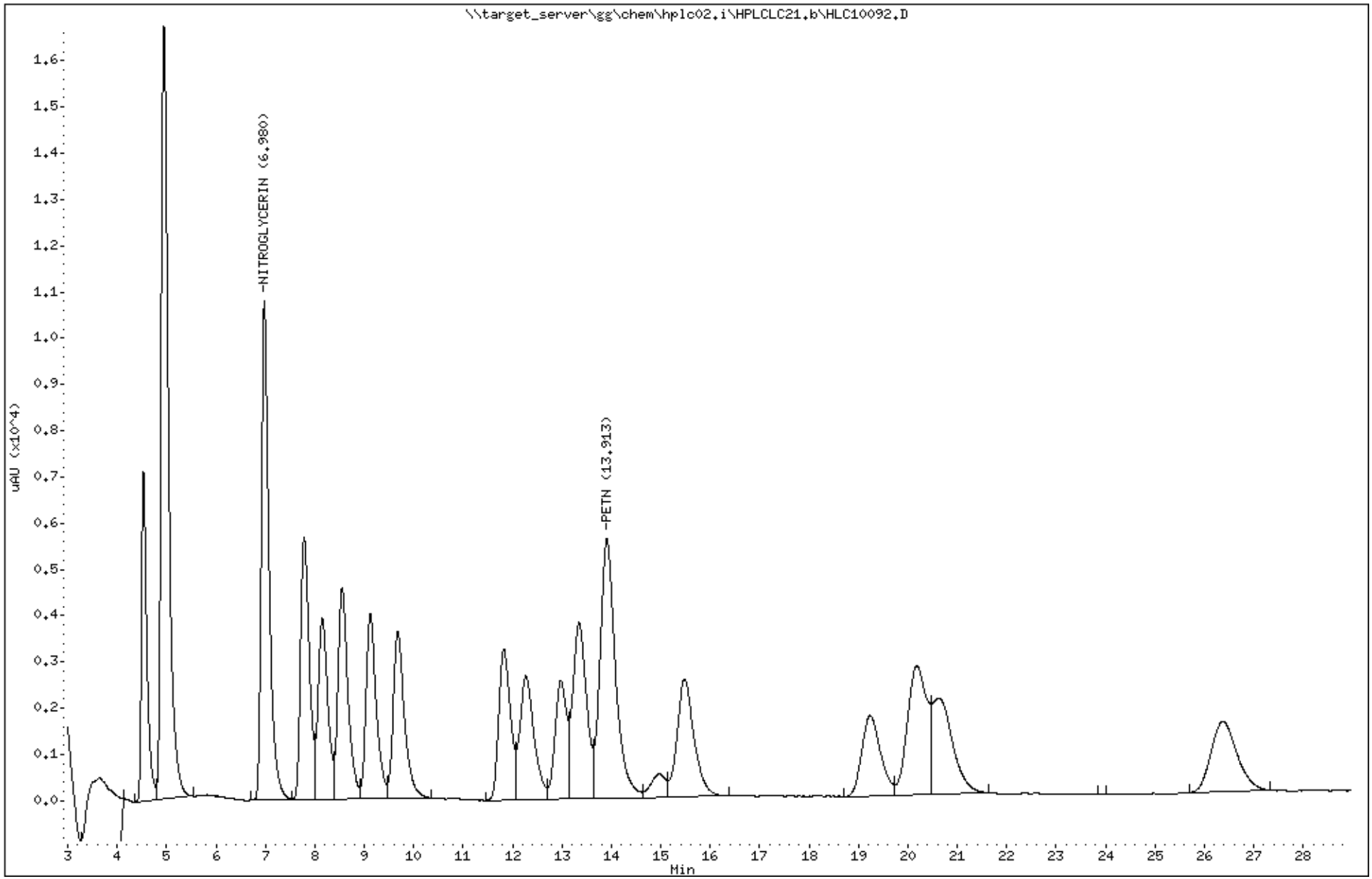
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.979	6.975	0.004	10792	1.00000	1.96(a)
18 PETN	13.913	13.902	0.011	5611	1.00000	1.95(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10092.D
Date : 22-MAR-2018 00:27
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-14,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000261
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-15
Lab File ID : HLC10103.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 09:13
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5384	0.010	-2.34340	20.00000	Averaged
140 PETN	2876	2764	0.010	-3.88893	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10103.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10103.D
Lab Smp Id: WG225143-15
Inj Date : 22-MAR-2018 09:13
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-15,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 80   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.973	6.975	-0.002	5384	1.00000	0.976(a)
18 PETN	13.907	13.902	0.005	2764	1.00000	0.961(a)

QC Flag Legend

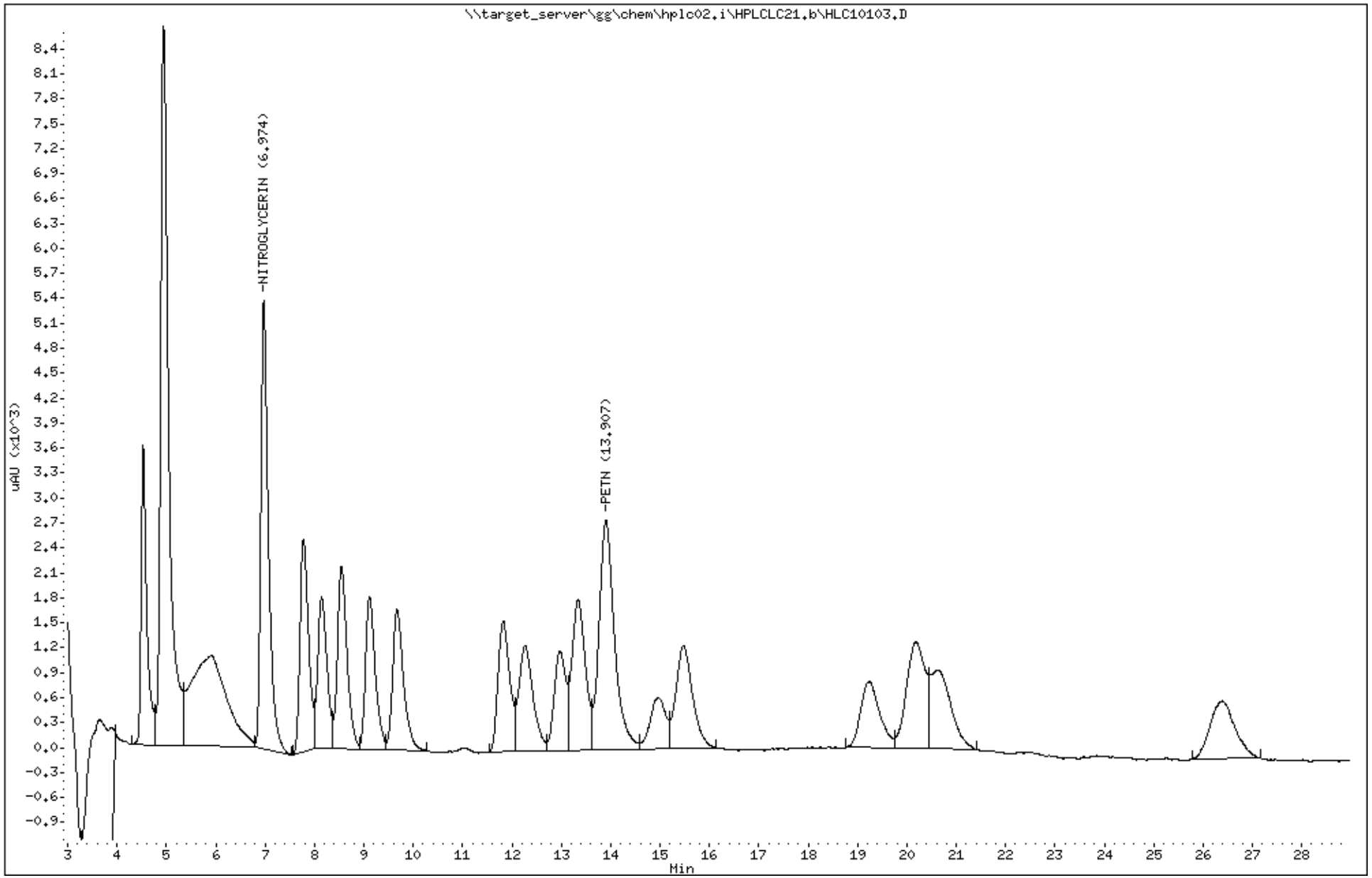
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10103.D
Date : 22-MAR-2018 09:13
Client ID:
Sample Info: WG225143-15,SL2133

Column phase: Acclaim Exp E1

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60



Katahdin Analytical Services 2000264

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-16
Lab File ID : HLC10114.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 16:22
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5446	0.010	-1.22790	20.00000	Averaged
140 PETN	2876	2822	0.010	-1.87212	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10114.D
Report Date: 30-Mar-2018 11:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10114.D
Lab Smp Id: WG225143-16
Inj Date : 22-MAR-2018 16:22
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-16,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 91   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.966	6.966	0.000	10891	1.00000	1.98(a)
18 PETN	13.886	13.886	0.000	5644	1.00000	1.96(a)

QC Flag Legend

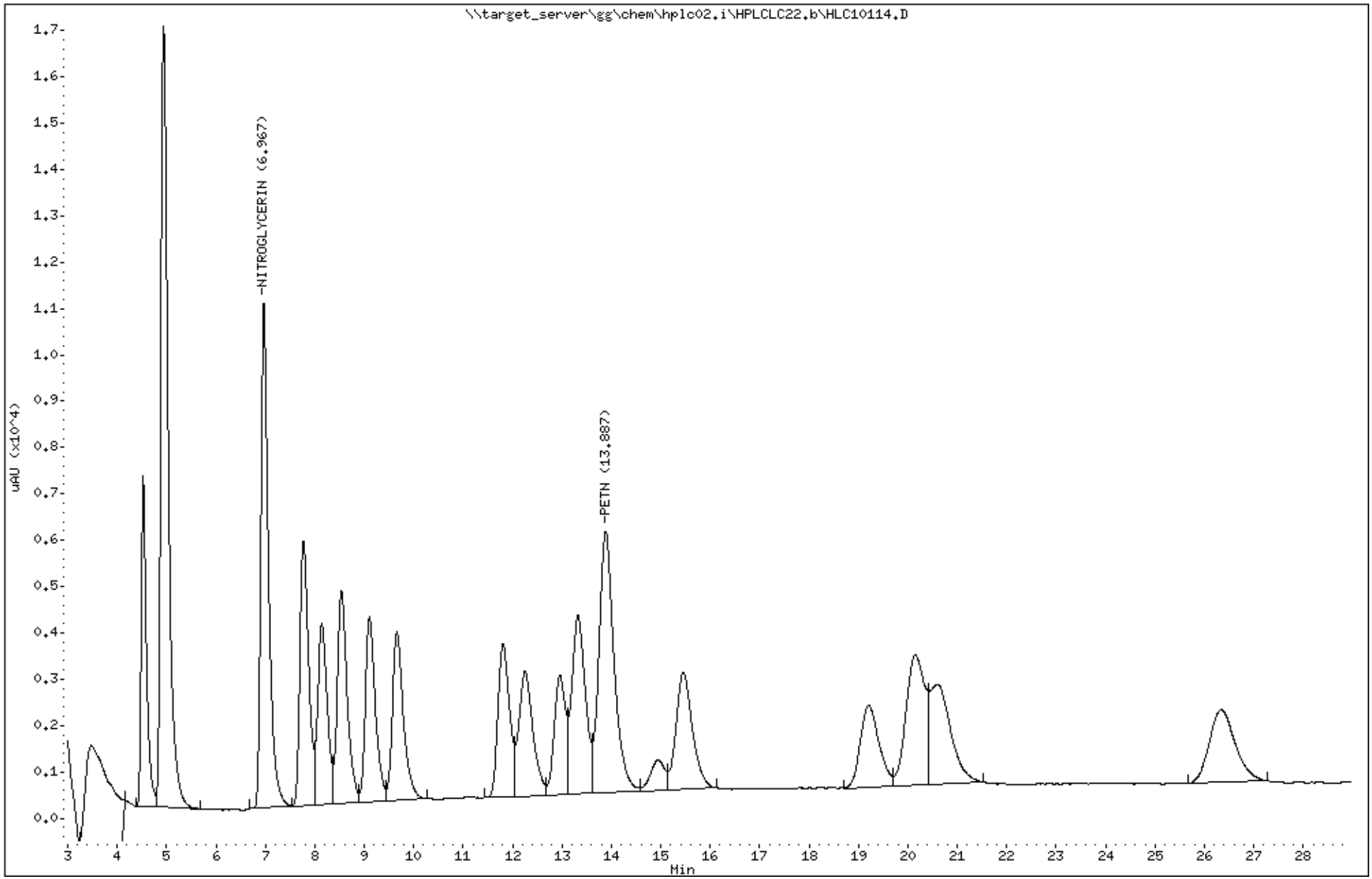
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10114.D
Date : 22-MAR-2018 16:22
Client ID:
Sample Info: WG225143-16,SL2133

Column phase: Acclaim Exp E1

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60



Katahdin Analytical Services 2000267
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-17
Lab File ID : HLC10124.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 21:40
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5344	0.010	-3.06894	20.00000	Averaged
140 PETN	2876	2759	0.010	-4.06279	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10124.D
Report Date: 30-Mar-2018 11:57

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10124.D
Lab Smp Id: WG225143-17
Inj Date : 22-MAR-2018 21:40
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-17,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m
Meth Date : 24-Mar-2018 21:47 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 1   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	6.980	6.966	0.014	5344	1.00000	0.969(a)
18 PETN	13.913	13.886	0.027	2759	1.00000	0.959(a)

QC Flag Legend

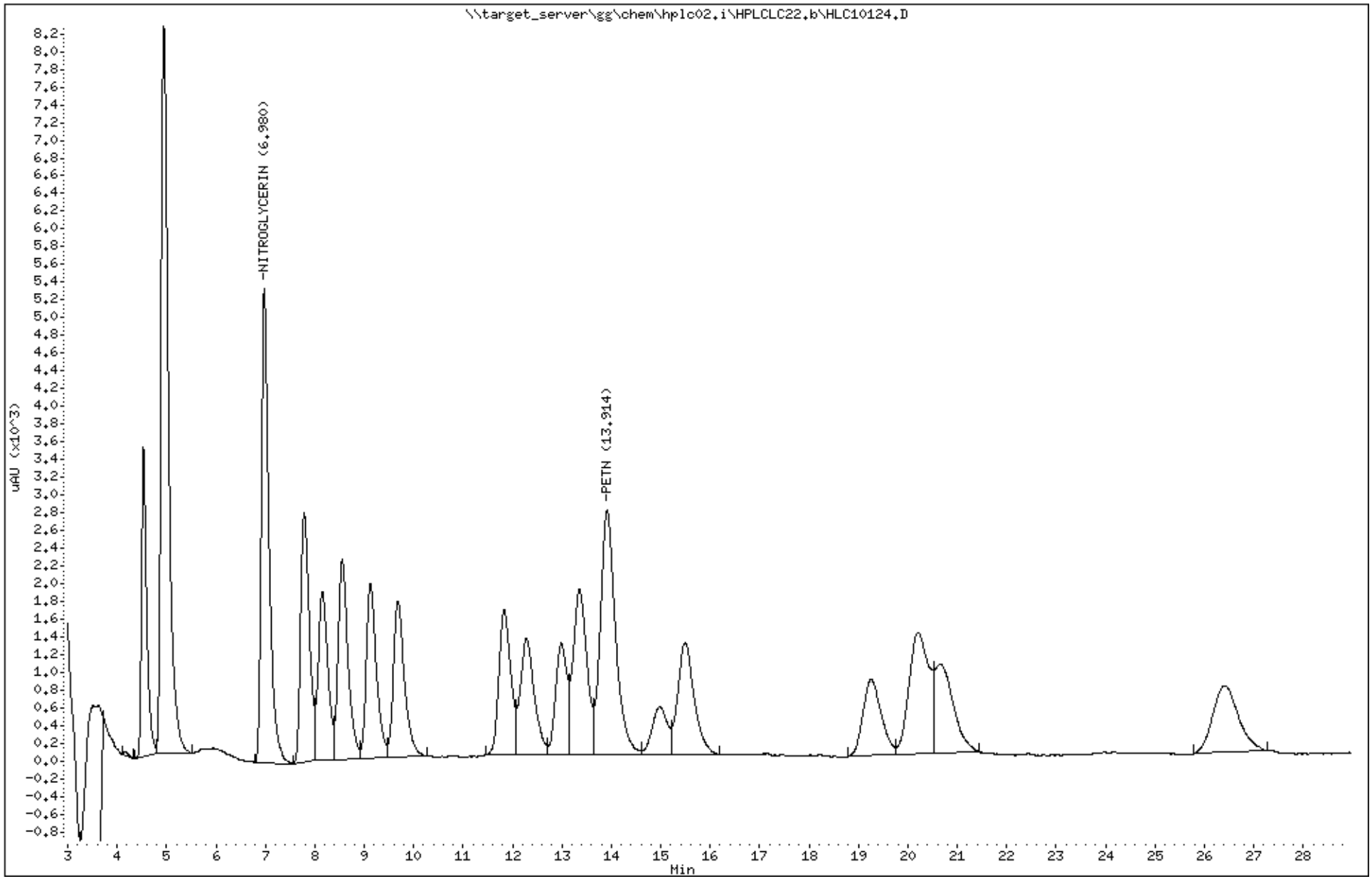
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HLC10124.D
Date : 22-MAR-2018 21:40
Client ID:
Sample Info: WG225143-17,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000270
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-24
Lab File ID : HLC10175.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 08:57
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5513	0.010	-0.01263	20.00000	Averaged
140 PETN	2876	2825	0.010	-1.76781	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10175.D
Report Date: 30-Mar-2018 12:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10175.D
Lab Smp Id: WG225143-24
Inj Date : 27-MAR-2018 08:57
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-24,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m
Meth Date : 29-Mar-2018 00:32 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 1   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	7.021	7.021	0.000	11025	1.00000	2.00(a)
18 PETN	14.061	14.061	0.000	5650	1.00000	1.96(a)

QC Flag Legend

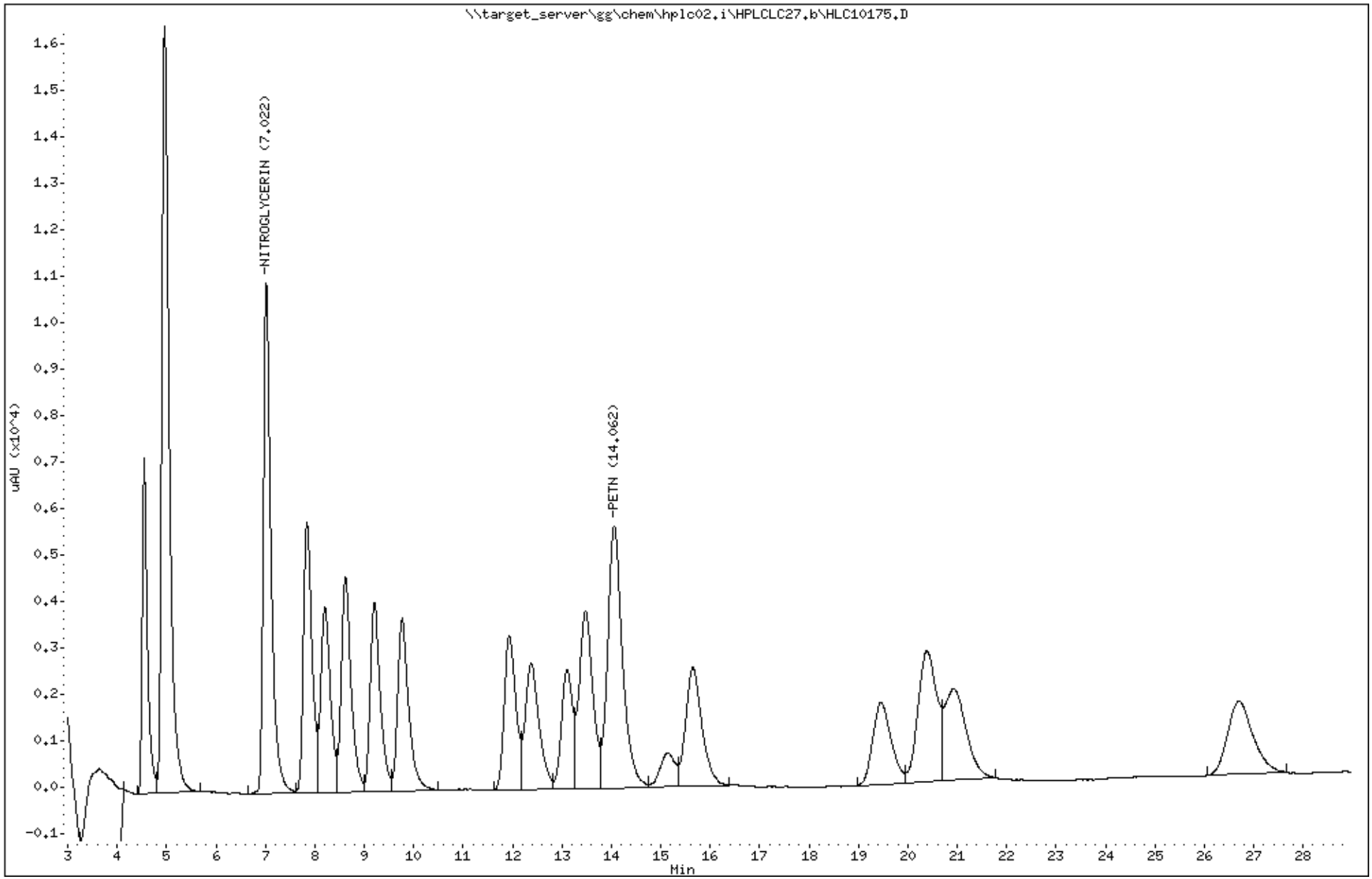
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10175.D
Date : 27-MAR-2018 08:57
Client ID:
Sample Info: WG225143-24,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000273

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-25
Lab File ID : HLC10180.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 12:10
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5481	0.010	-0.58399	20.00000	Averaged
140 PETN	2876	2836	0.010	-1.38531	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10180.D
Report Date: 30-Mar-2018 12:33

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Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10180.D
Lab Smp Id: WG225143-25
Inj Date : 27-MAR-2018 12:10
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-25,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m
Meth Date : 29-Mar-2018 00:32 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 6   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

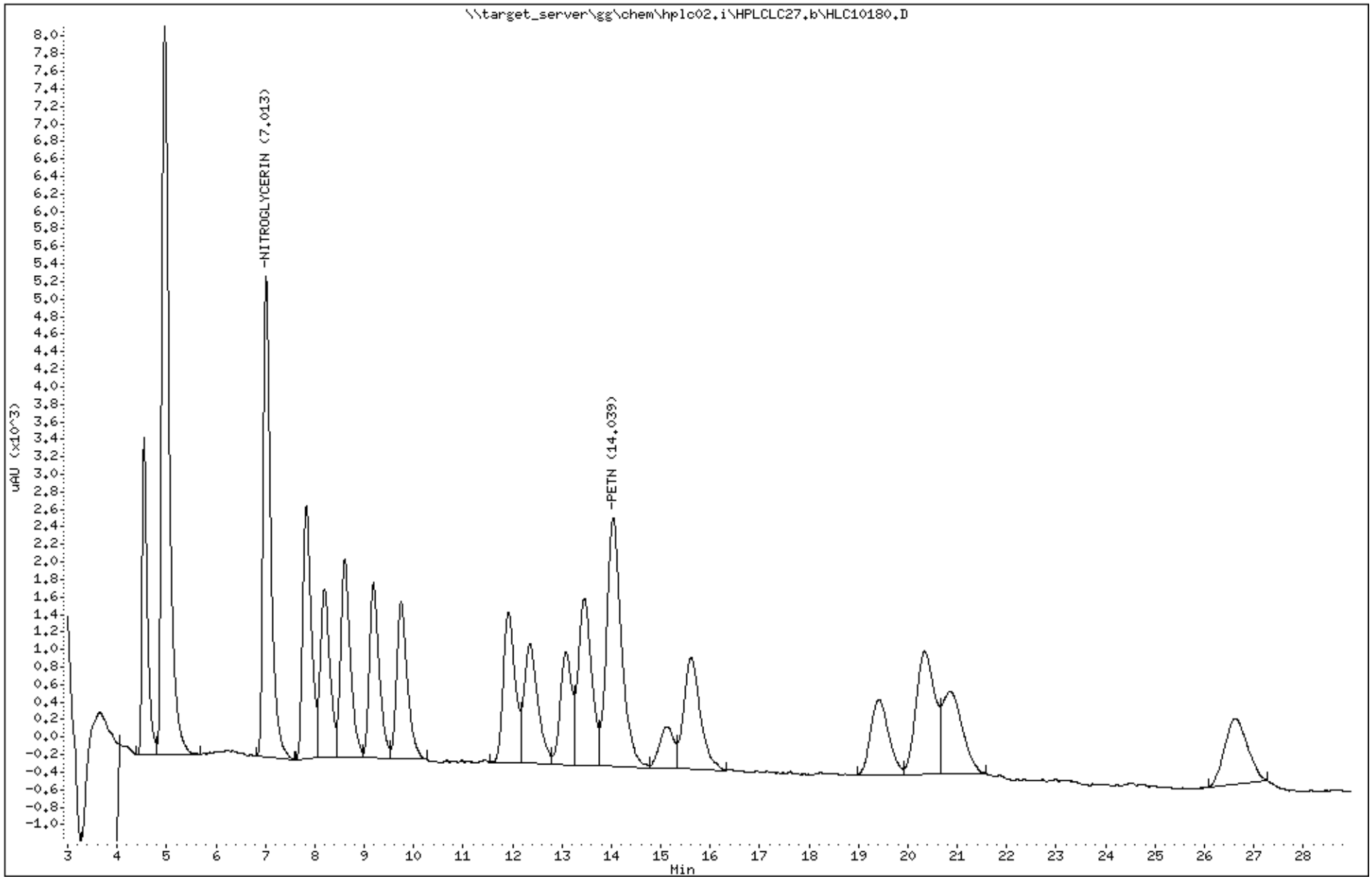
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	7.012	7.021	-0.009	5481	1.00000	0.994(a)
18 PETN	14.039	14.061	-0.022	2836	1.00000	0.986(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10180.D
Date : 27-MAR-2018 12:10
Client ID:
Instrument: hplc02.i
Sample Info: WG225143-25,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000276
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition F
Lab ID : WG225143-26
Lab File ID : HLC10191.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 18:36
Instrument ID: HPLC02
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
130 NITROGLYCERIN	5513	5503	0.010	-0.18495	20.00000	Averaged
140 PETN	2876	2836	0.010	-1.38531	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10191.D
Report Date: 30-Mar-2018 12:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10191.D
Lab Smp Id: WG225143-26
Inj Date : 27-MAR-2018 18:36
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-26,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m
Meth Date : 29-Mar-2018 00:32 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 17   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
8 NITROGLYCERIN	7.021	7.021	0.000	5503	1.00000	0.998(a)
18 PETN	14.041	14.061	-0.020	2836	1.00000	0.986(a)

QC Flag Legend

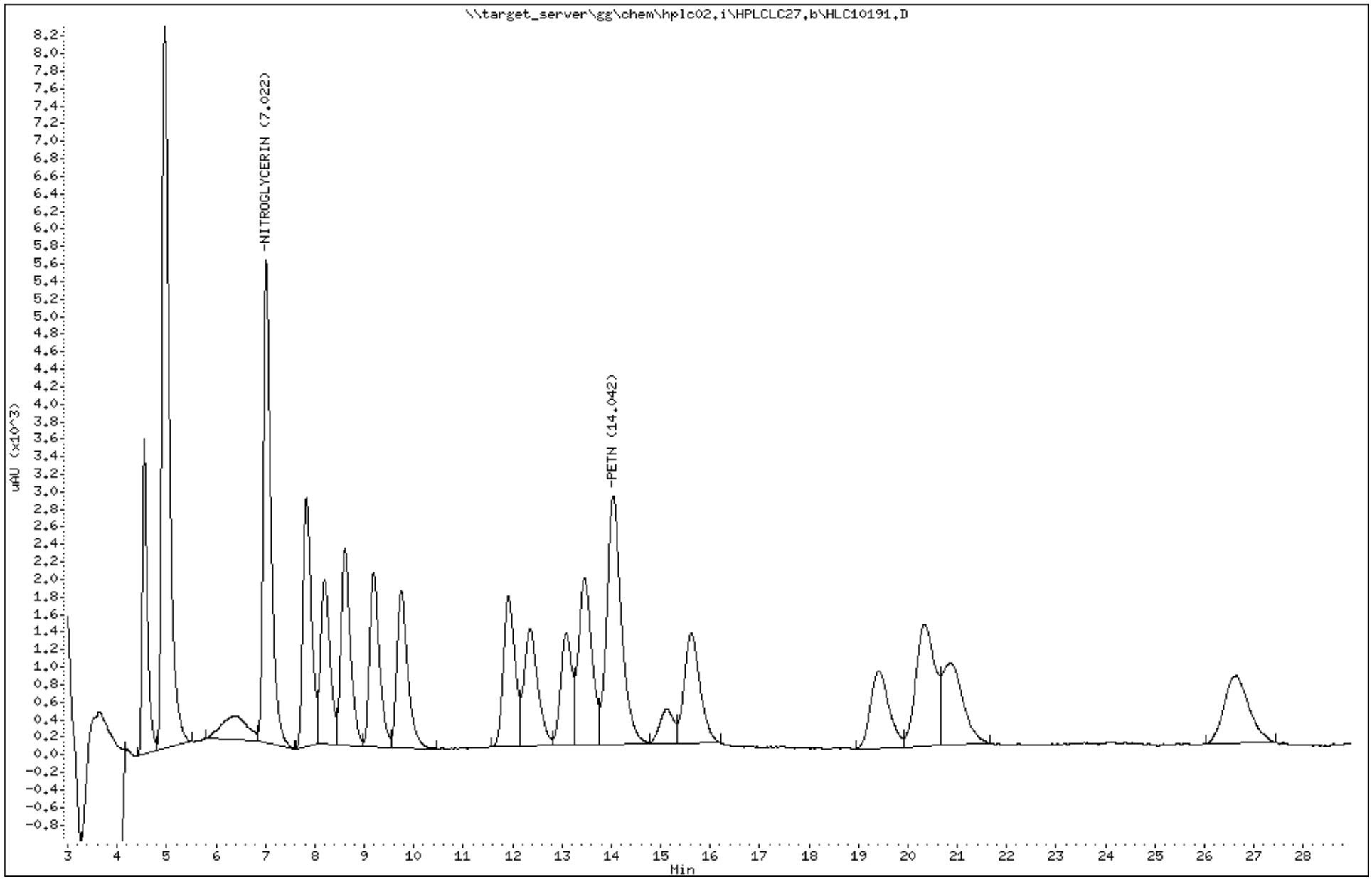
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10191.D
Date : 27-MAR-2018 18:36
Client ID:
Sample Info: WG225143-26,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000279

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-9
Lab File ID : HLC10049.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 00:26
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.50000	0.48680	5340	0.010	-2.64053	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3670	3670	0.010	-0.51119	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7568	7568	0.010	1.66967	20.00000	Averaged
7	nitrobenzene	6867	6846	6846	0.010	-0.30063	20.00000	Averaged
9	TETRYL	2535	2450	2450	0.010	-3.33672	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2460	2460	0.010	-2.62659	20.00000	Averaged
11	4-AM-DNT	4303	4346	4346	0.010	1.00601	20.00000	Averaged
12	2-AM-DNT	5761	5818	5818	0.010	0.99442	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48644	2864	0.010	-2.71162	20.00000	Linear
14	2,4-dinitrotoluene	4619	4600	4600	0.010	-0.40056	20.00000	Averaged
15	2-nitrotoluene	2890	2980	2980	0.010	3.12948	20.00000	Averaged
16	4-nitrotoluene	2342	2480	2480	0.010	5.87303	20.00000	Averaged
17	3-nitrotoluene	3326	3392	3392	0.010	1.99532	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4632	4632	0.010	0.09879	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10049.D
Report Date: 30-Mar-2018 11:37

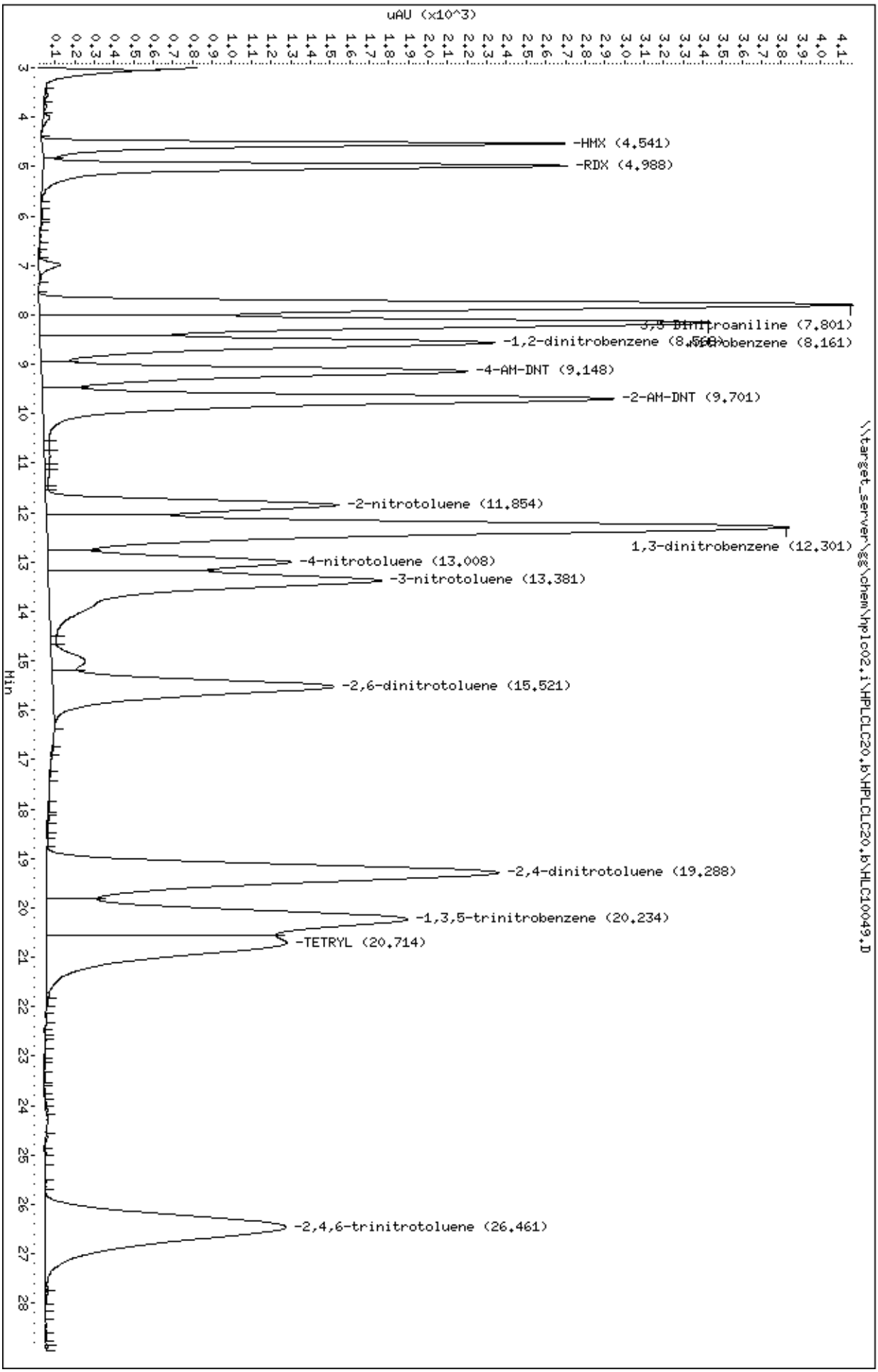
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10049.D
Lab Smp Id: WG225143-9
Inj Date : 21-MAR-2018 00:26
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-9,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 26   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.541	4.542	-0.001	2668	0.25000	0.495	
4	RDX	4.987	4.989	-0.002	2670	0.25000	0.487	
51	3,5-Dinitroaniline	7.801	7.809	-0.008	4148	0.25000	0.499	
7	nitrobenzene	8.161	8.175	-0.014	3423	0.25000	0.498	
$ 2	1,2-dinitrobenzene	8.567	8.575	-0.008	2316	0.25000	0.500	
11	4-AM-DNT	9.147	9.155	-0.008	2173	0.25000	0.505	
12	2-AM-DNT	9.701	9.715	-0.014	2909	0.25000	0.505	
15	2-nitrotoluene	11.854	11.862	-0.008	1490	0.25000	0.516	
6	1,3-dinitrobenzene	12.301	12.315	-0.014	3784	0.25000	0.508	
16	4-nitrotoluene	13.007	13.022	-0.015	1240	0.25000	0.529	
17	3-nitrotoluene	13.381	13.389	-0.008	1696	0.25000	0.510	
13	2,6-dinitrotoluene	15.521	15.542	-0.021	1432	0.25000	0.486	
14	2,4-dinitrotoluene	19.287	19.309	-0.022	2300	0.25000	0.498	
5	1,3,5-trinitrobenzene	20.234	20.222	0.012	1835	0.25000	0.497	
9	TETRYL	20.714	20.722	-0.008	1225	0.25000	0.483	
10	2,4,6-trinitrotoluene	26.461	26.469	-0.008	1230	0.25000	0.487	


Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10049.D
Date : 21-MAR-2018 00:26
Client ID:
Sample Info: WG225143-9,SL2133
Column phase: Acclaim Exp E1
Instrument: hplc02.i
Operator: AC
Column diameter: 4.60
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uAU (x10^3)
Min
-HMX (4.541)
-RDX (4.988)
3,5-Dinitroaniline (7.801)
-1,2-dinitrobenzene (8.568)
-nitrobenzene (8.161)
-4-AM-DNT (9.148)
-2-AM-DNT (9.701)
-2-nitrotoluene (11.854)
1,3-dinitrobenzene (12.301)
-4-nitrotoluene (13.008)
-3-nitrotoluene (13.381)
-2,6-dinitrotoluene (15.521)
-2,4-dinitrotoluene (19.288)
-1,3,5-trinitrobenzene (20.234)
-TETRYL (20.714)
-2,4,6-trinitrotoluene (26.461)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-13
Lab File ID : HLC10081.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/21/18 18:38
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5288	5288	0.010	-1.90409	20.00000	Averaged
4	RDX	0.25000	0.23859	5168	0.010	-4.56414	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3736	3736	0.010	1.27798	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7752	7752	0.010	4.14156	20.00000	Averaged
7	nitrobenzene	6867	6748	6748	0.010	-1.72781	20.00000	Averaged
9	TETRYL	2535	2624	2624	0.010	3.52835	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2464	2464	0.010	-2.46826	20.00000	Averaged
11	4-AM-DNT	4303	4320	4320	0.010	0.40174	20.00000	Averaged
12	2-AM-DNT	5761	5732	5732	0.010	-0.49845	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23859	2884	0.010	-4.56349	20.00000	Linear
14	2,4-dinitrotoluene	4619	4584	4584	0.010	-0.74700	20.00000	Averaged
15	2-nitrotoluene	2890	3120	3120	0.010	7.97449	20.00000	Averaged
16	4-nitrotoluene	2342	2740	2740	0.010	16.97262	20.00000	Averaged
17	3-nitrotoluene	3326	3476	3476	0.010	4.52115	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4576	4576	0.010	-1.11139	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10081.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10081.D
Lab Smp Id: WG225143-13
Inj Date : 21-MAR-2018 18:38
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-13,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 58   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.535	4.529	0.006	1322	0.25000	0.245(a)	
4	RDX	4.975	4.975	0.000	1292	0.25000	0.238(a)	
51	3,5-Dinitroaniline	7.775	7.782	-0.007	2054	0.25000	0.247(a)	
7	nitrobenzene	8.148	8.149	-0.001	1687	0.25000	0.246(a)	
$ 2	1,2-dinitrobenzene	8.541	8.549	-0.008	1144	0.25000	0.247(a)	
11	4-AM-DNT	9.115	9.115	0.000	1080	0.25000	0.251	
12	2-AM-DNT	9.668	9.675	-0.007	1433	0.25000	0.249(a)	
15	2-nitrotoluene	11.821	11.822	-0.001	780	0.25000	0.270	
6	1,3-dinitrobenzene	12.268	12.269	-0.001	1938	0.25000	0.260	
16	4-nitrotoluene	12.968	12.969	-0.001	685	0.25000	0.292	
17	3-nitrotoluene	13.335	13.342	-0.007	869	0.25000	0.261	
13	2,6-dinitrotoluene	15.475	15.475	0.000	721	0.25000	0.238(a)	
14	2,4-dinitrotoluene	19.221	19.235	-0.014	1146	0.25000	0.248(a)	
5	1,3,5-trinitrobenzene	20.168	20.175	-0.007	934	0.25000	0.253	
9	TETRYL	20.595	20.622	-0.027	656	0.25000	0.259	
10	2,4,6-trinitrotoluene	26.355	26.382	-0.027	616	0.25000	0.244(a)	

QC Flag Legend

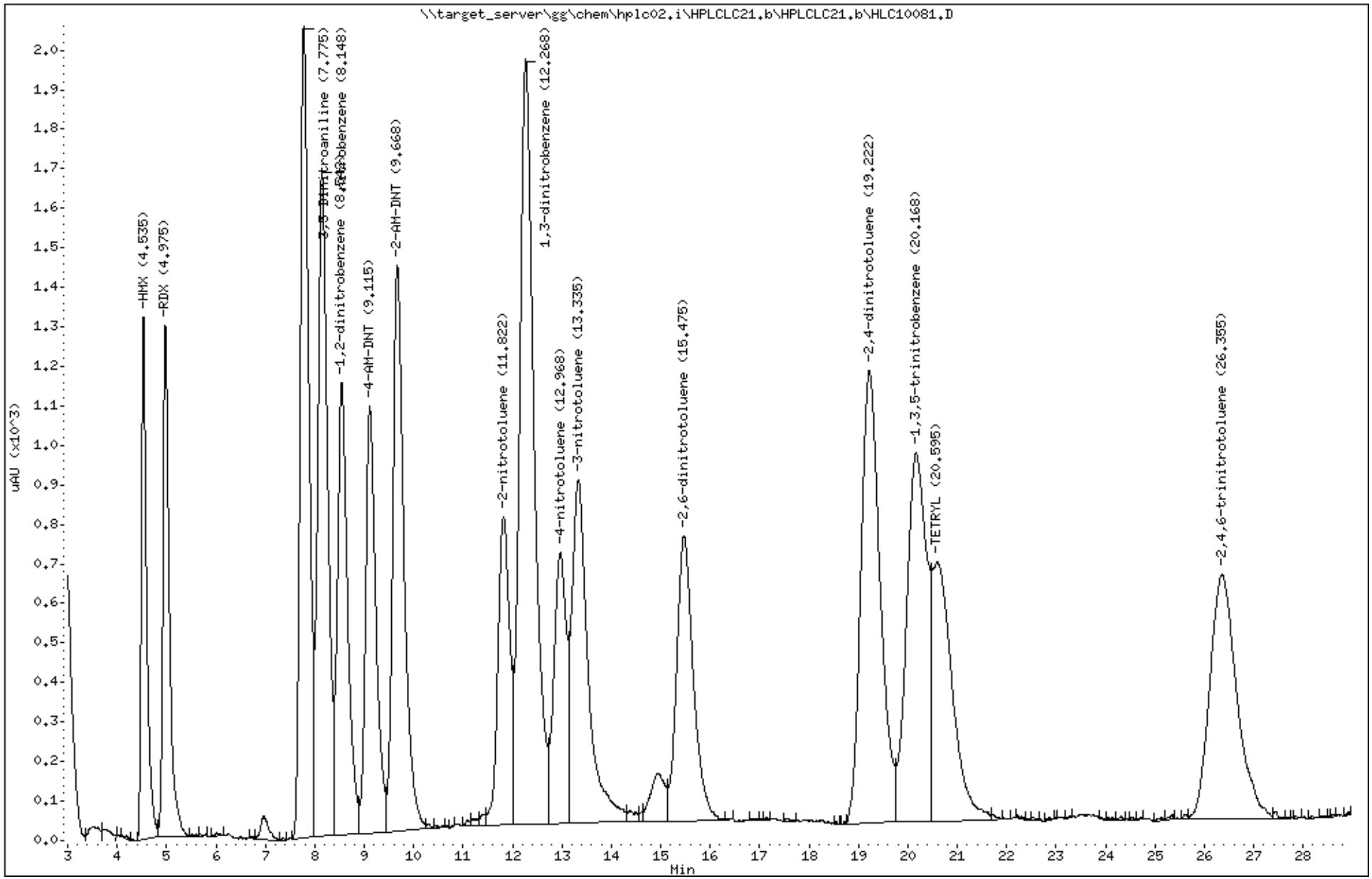
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10081.D
Date : 21-MAR-2018 18:38
Client ID:
Sample Info: WG225143-13,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000285
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-14
Lab File ID : HLC10092.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 00:27
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5370	5370	0.010	-0.38294	20.00000	Averaged
4	RDX	0.50000	0.48842	5358	0.010	-2.31631	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3718	3718	0.010	0.79002	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7578	7578	0.010	1.80401	20.00000	Averaged
7	nitrobenzene	6867	6804	6804	0.010	-0.91228	20.00000	Averaged
9	TETRYL	2535	2586	2586	0.010	2.02908	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2450	2450	0.010	-3.02242	20.00000	Averaged
11	4-AM-DNT	4303	4318	4318	0.010	0.35526	20.00000	Averaged
12	2-AM-DNT	5761	5754	5754	0.010	-0.11655	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48261	2842	0.010	-3.47852	20.00000	Linear
14	2,4-dinitrotoluene	4619	4604	4604	0.010	-0.31395	20.00000	Averaged
15	2-nitrotoluene	2890	2986	2986	0.010	3.33712	20.00000	Averaged
16	4-nitrotoluene	2342	2452	2452	0.010	4.67768	20.00000	Averaged
17	3-nitrotoluene	3326	3306	3306	0.010	-0.59065	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4566	4566	0.010	-1.32749	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10092.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10092.D
Lab Smp Id: WG225143-14
Inj Date : 22-MAR-2018 00:27
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-14,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 69   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.533	4.529	0.004	2685	0.25000	0.498(a)	
4	RDX	4.979	4.975	0.004	2679	0.25000	0.488(a)	
51	3,5-Dinitroaniline	7.786	7.782	0.004	4135	0.25000	0.497(a)	
7	nitrobenzene	8.153	8.149	0.004	3402	0.25000	0.495(a)	
$ 2	1,2-dinitrobenzene	8.553	8.549	0.004	2283	0.25000	0.493(a)	
11	4-AM-DNT	9.126	9.115	0.011	2159	0.25000	0.502(a)	
12	2-AM-DNT	9.679	9.675	0.004	2877	0.25000	0.499(a)	
15	2-nitrotoluene	11.826	11.822	0.004	1493	0.25000	0.517(a)	
6	1,3-dinitrobenzene	12.279	12.269	0.010	3789	0.25000	0.509(a)	
16	4-nitrotoluene	12.979	12.969	0.010	1226	0.25000	0.523(a)	
17	3-nitrotoluene	13.346	13.342	0.004	1653	0.25000	0.497(a)	
13	2,6-dinitrotoluene	15.486	15.475	0.011	1421	0.25000	0.483(a)	
14	2,4-dinitrotoluene	19.239	19.235	0.004	2302	0.25000	0.498(a)	
5	1,3,5-trinitrobenzene	20.186	20.175	0.011	1859	0.25000	0.504(a)	
9	TETRYL	20.619	20.622	-0.003	1293	0.25000	0.510(a)	
10	2,4,6-trinitrotoluene	26.366	26.382	-0.016	1225	0.25000	0.485(a)	

QC Flag Legend

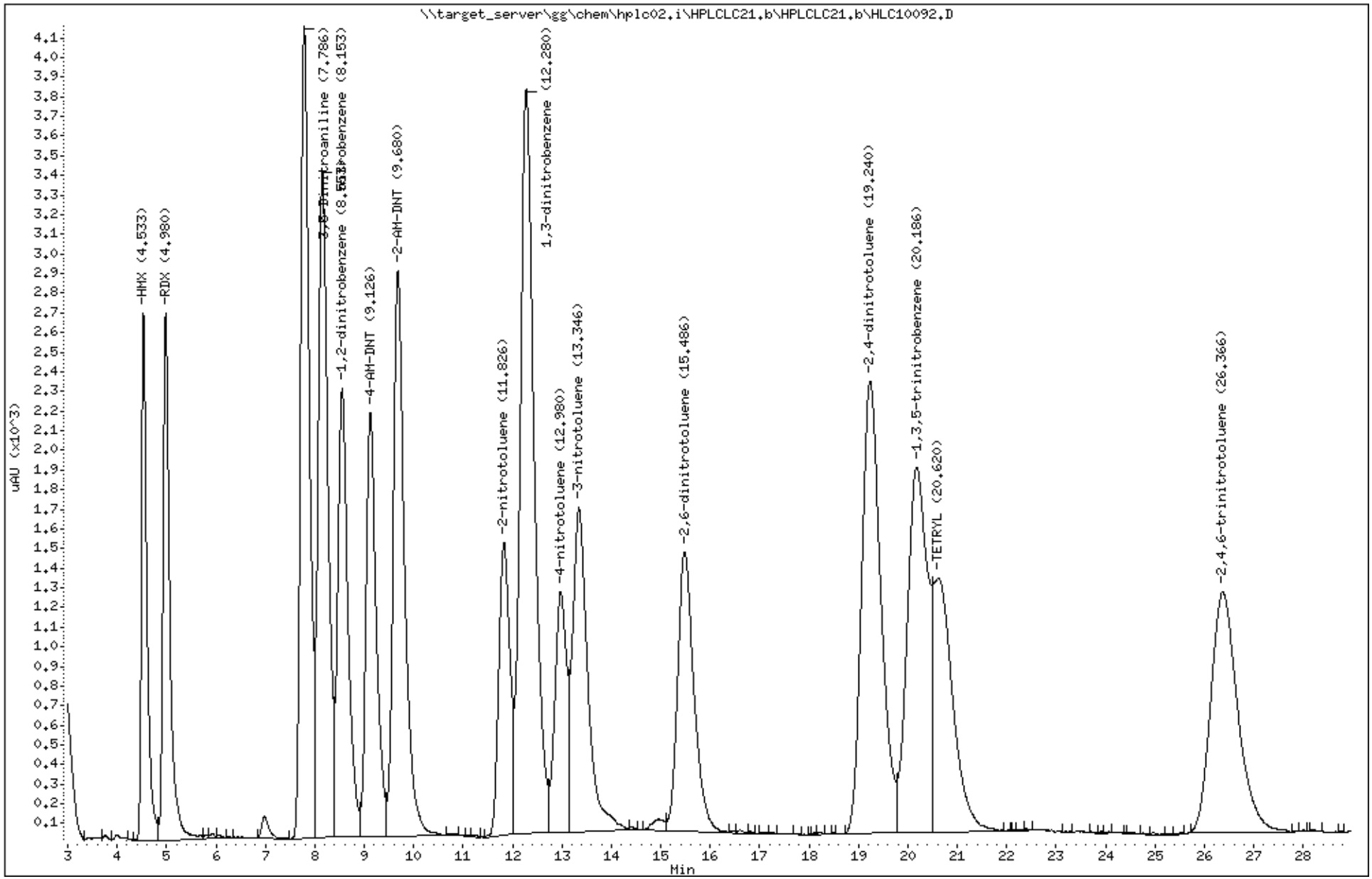
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10092.D
Date : 22-MAR-2018 00:27
Client ID:
Sample Info: WG225143-14,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000288
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-15
Lab File ID : HLC10103.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 09:13
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{\text{RRF}}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5312	5312	0.010	-1.45888	20.00000	Averaged
4	RDX	0.25000	0.24633	5340	0.010	-1.46605	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3384	3384	0.010	-8.26427	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7072	7072	0.010	-4.99367	20.00000	Averaged
7	nitrobenzene	6867	6608	6608	0.010	-3.76666	20.00000	Averaged
9	TETRYL	2535	2344	2344	0.010	-7.51888	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2276	2276	0.010	-9.90981	20.00000	Averaged
11	4-AM-DNT	4303	4096	4096	0.010	-4.80428	20.00000	Averaged
12	2-AM-DNT	5761	5412	5412	0.010	-6.05332	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.22883	2772	0.010	-8.46775	20.00000	Linear
14	2,4-dinitrotoluene	4619	4236	4236	0.010	-8.28191	20.00000	Averaged
15	2-nitrotoluene	2890	2876	2876	0.010	-0.46967	20.00000	Averaged
16	4-nitrotoluene	2342	2248	2248	0.010	-4.03123	20.00000	Averaged
17	3-nitrotoluene	3326	3072	3072	0.010	-7.62688	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4552	4552	0.010	-1.63003	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10103.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10103.D
Lab Smp Id: WG225143-15
Inj Date : 22-MAR-2018 09:13
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-15,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 80   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

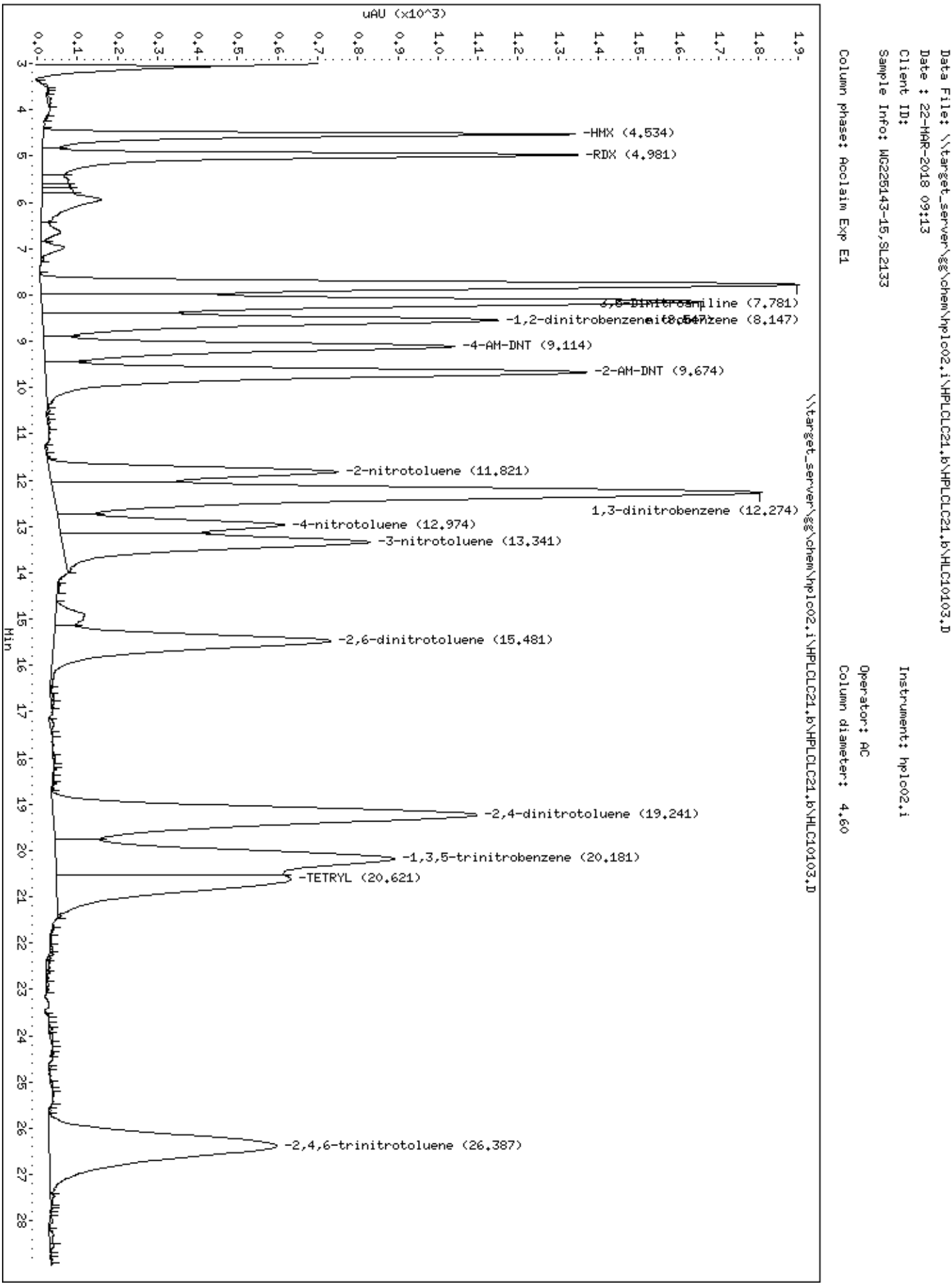
Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.533	4.529	0.004	1328	0.25000	0.246(a)	
4	RDX	4.980	4.975	0.005	1335	0.25000	0.246(a)	
51	3,5-Dinitroaniline	7.780	7.782	-0.002	1893	0.25000	0.228(a)	
7	nitrobenzene	8.147	8.149	-0.002	1652	0.25000	0.240(a)	
$ 2	1,2-dinitrobenzene	8.547	8.549	-0.002	1138	0.25000	0.246(a)	
11	4-AM-DNT	9.113	9.115	-0.002	1024	0.25000	0.238(a)	
12	2-AM-DNT	9.673	9.675	-0.002	1353	0.25000	0.235(a)	
15	2-nitrotoluene	11.820	11.822	-0.002	719	0.25000	0.249(a)	
6	1,3-dinitrobenzene	12.273	12.269	0.004	1768	0.25000	0.238(a)	
16	4-nitrotoluene	12.973	12.969	0.004	562	0.25000	0.240(a)	
17	3-nitrotoluene	13.340	13.342	-0.002	768	0.25000	0.231(a)	
13	2,6-dinitrotoluene	15.480	15.475	0.005	693	0.25000	0.229(a)	
14	2,4-dinitrotoluene	19.240	19.235	0.005	1059	0.25000	0.229(a)	
5	1,3,5-trinitrobenzene	20.180	20.175	0.005	846	0.25000	0.229(a)	
9	TETRYL	20.620	20.622	-0.002	586	0.25000	0.231(a)	
10	2,4,6-trinitrotoluene	26.387	26.382	0.005	569	0.25000	0.225(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



REISSUE **Katahdin Analytical Services 2000291**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-16
Lab File ID : HLC10114.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 16:22
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5362	5362	0.010	-0.53134	20.00000	Averaged
4	RDX	0.50000	0.49076	5384	0.010	-1.84799	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3764	3764	0.010	2.03702	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7644	7644	0.010	2.69067	20.00000	Averaged
7	nitrobenzene	6867	6814	6814	0.010	-0.76665	20.00000	Averaged
9	TETRYL	2535	2698	2698	0.010	6.44798	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2510	2510	0.010	-0.64746	20.00000	Averaged
11	4-AM-DNT	4303	4344	4344	0.010	0.95953	20.00000	Averaged
12	2-AM-DNT	5761	5812	5812	0.010	0.89027	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.48714	2868	0.010	-2.57218	20.00000	Linear
14	2,4-dinitrotoluene	4619	4648	4648	0.010	0.63874	20.00000	Averaged
15	2-nitrotoluene	2890	2990	2990	0.010	3.47555	20.00000	Averaged
16	4-nitrotoluene	2342	2460	2460	0.010	5.01921	20.00000	Averaged
17	3-nitrotoluene	3326	3336	3336	0.010	0.31143	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4602	4602	0.010	-0.54952	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10114.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10114.D
Lab Smp Id: WG225143-16
Inj Date : 22-MAR-2018 16:22
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-16,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 91   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

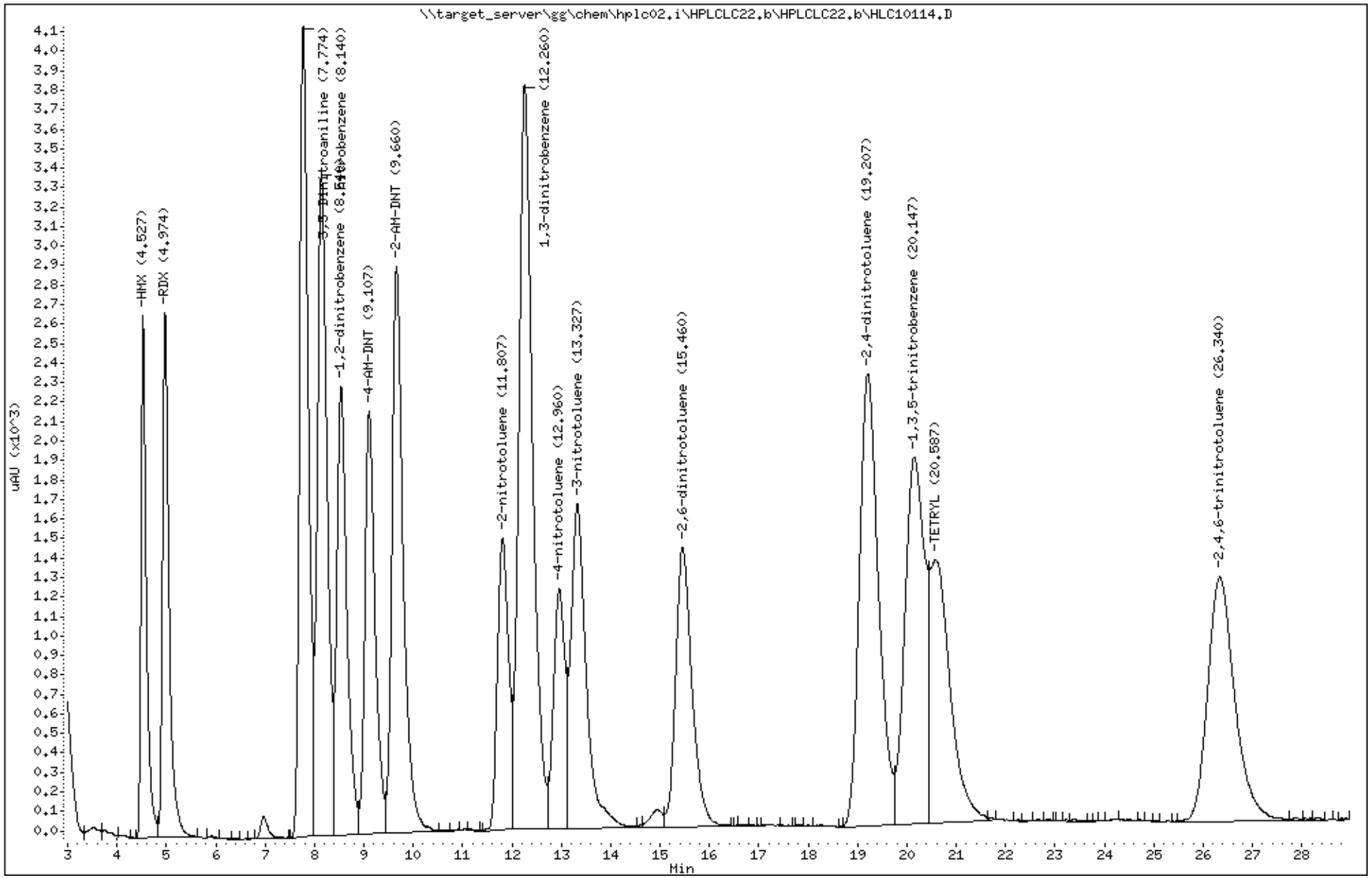
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.526	4.526	0.000	2681	0.25000	0.497	
4	RDX	4.973	4.973	0.000	2692	0.25000	0.491	
51	3,5-Dinitroaniline	7.773	7.773	0.000	4160	0.25000	0.500	
7	nitrobenzene	8.140	8.140	0.000	3407	0.25000	0.496	
$ 2	1,2-dinitrobenzene	8.540	8.540	0.000	2301	0.25000	0.497	
11	4-AM-DNT	9.106	9.106	0.000	2172	0.25000	0.505	
12	2-AM-DNT	9.660	9.660	0.000	2906	0.25000	0.504	
15	2-nitrotoluene	11.806	11.806	0.000	1495	0.25000	0.517	
6	1,3-dinitrobenzene	12.260	12.260	0.000	3822	0.25000	0.513	
16	4-nitrotoluene	12.960	12.960	0.000	1230	0.25000	0.525	
17	3-nitrotoluene	13.326	13.326	0.000	1668	0.25000	0.502	
13	2,6-dinitrotoluene	15.460	15.460	0.000	1434	0.25000	0.487	
14	2,4-dinitrotoluene	19.206	19.206	0.000	2324	0.25000	0.503	
5	1,3,5-trinitrobenzene	20.146	20.146	0.000	1882	0.25000	0.510	
9	TETRYL	20.586	20.586	0.000	1349	0.25000	0.532	
10	2,4,6-trinitrotoluene	26.340	26.340	0.000	1255	0.25000	0.497	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10114.D
Date : 22-MAR-2018 16:22
Client ID:
Sample Info: WG225143-16,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000294
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-17
Lab File ID : HLC10124.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/22/18 21:40
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5300	5300	0.010	-1.68149	20.00000	Averaged
4	RDX	0.25000	0.24021	5204	0.010	-3.91570	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3664	3664	0.010	-0.67384	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7540	7540	0.010	1.29352	20.00000	Averaged
7	nitrobenzene	6867	6712	6712	0.010	-2.25209	20.00000	Averaged
9	TETRYL	2535	2508	2508	0.010	-1.04836	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2448	2448	0.010	-3.10159	20.00000	Averaged
11	4-AM-DNT	4303	4308	4308	0.010	0.12285	20.00000	Averaged
12	2-AM-DNT	5761	5736	5736	0.010	-0.42901	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23301	2820	0.010	-6.79449	20.00000	Linear
14	2,4-dinitrotoluene	4619	4588	4588	0.010	-0.66039	20.00000	Averaged
15	2-nitrotoluene	2890	3016	3016	0.010	4.37534	20.00000	Averaged
16	4-nitrotoluene	2342	2448	2448	0.010	4.50692	20.00000	Averaged
17	3-nitrotoluene	3326	3264	3264	0.010	-1.85356	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4568	4568	0.010	-1.28427	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10124.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10124.D
Lab Smp Id: WG225143-17
Inj Date : 22-MAR-2018 21:40
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-17,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 1   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

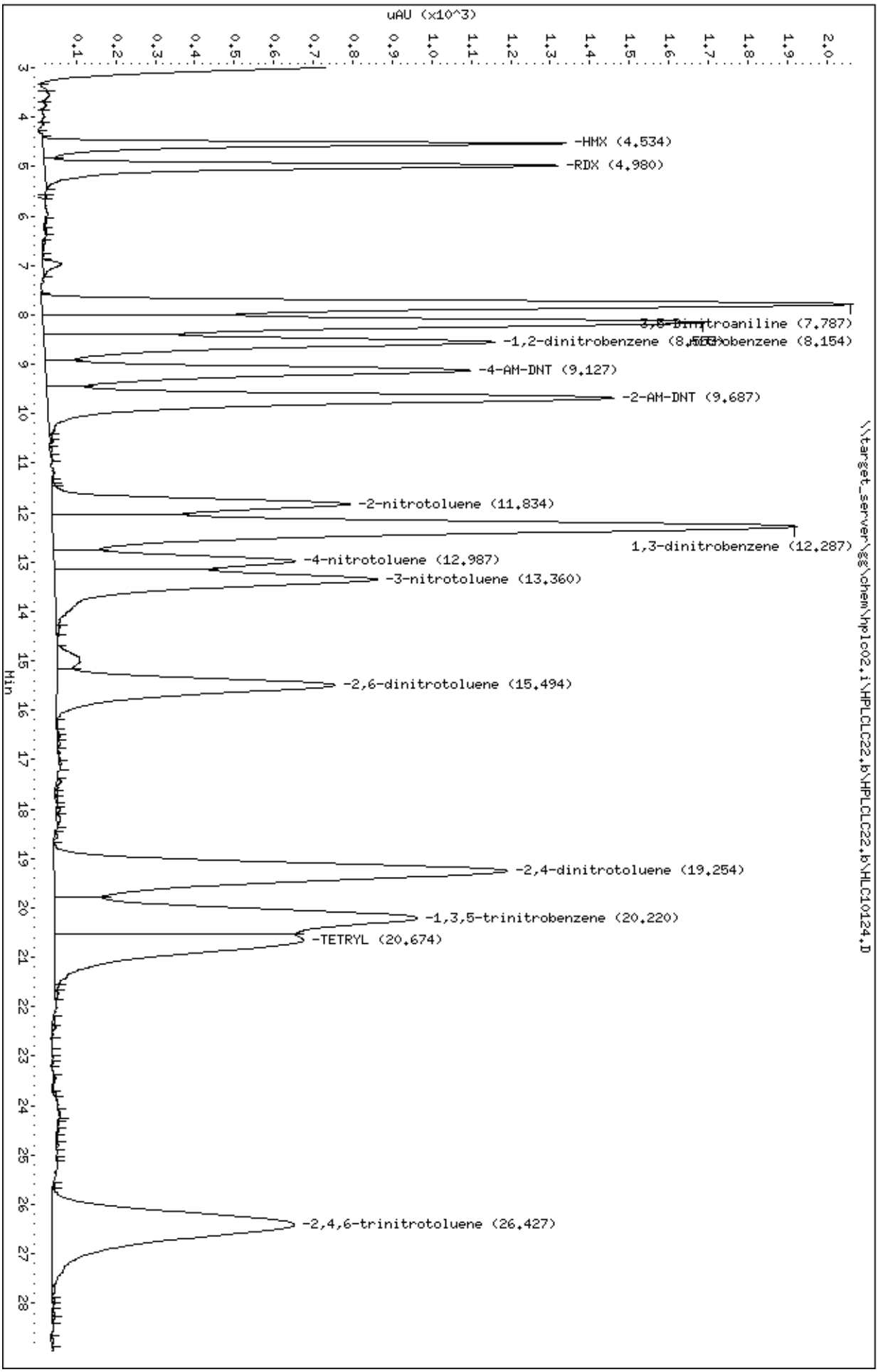
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.533	4.526	0.007	1325	0.25000	0.246(aM)	M2
4	RDX	4.980	4.973	0.007	1301	0.25000	0.240(aM)	M2
51	3,5-Dinitroaniline	7.786	7.773	0.013	2055	0.25000	0.247(a)	
7	nitrobenzene	8.153	8.140	0.013	1678	0.25000	0.244(a)	
$ 2	1,2-dinitrobenzene	8.553	8.540	0.013	1142	0.25000	0.247(a)	
11	4-AM-DNT	9.126	9.106	0.020	1077	0.25000	0.250	
12	2-AM-DNT	9.686	9.660	0.026	1434	0.25000	0.249(a)	
15	2-nitrotoluene	11.833	11.806	0.027	754	0.25000	0.261	
6	1,3-dinitrobenzene	12.286	12.260	0.026	1885	0.25000	0.253	
16	4-nitrotoluene	12.986	12.960	0.026	612	0.25000	0.261	
17	3-nitrotoluene	13.360	13.326	0.034	816	0.25000	0.245(a)	
13	2,6-dinitrotoluene	15.493	15.460	0.033	705	0.25000	0.233(a)	
14	2,4-dinitrotoluene	19.253	19.206	0.047	1147	0.25000	0.248(a)	
5	1,3,5-trinitrobenzene	20.220	20.146	0.074	916	0.25000	0.248(a)	
9	TETRYL	20.673	20.586	0.087	627	0.25000	0.247(a)	
10	2,4,6-trinitrotoluene	26.426	26.340	0.086	612	0.25000	0.242(a)	

10:36 am, Apr 02, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\hplc02,i\HPLCLC22,b\HPLCLC22,b\HLC10124,D
Date : 22-MAR-2018 21:40
Client ID:
Sample Info: WG225143-17,SL2133
Column phase: Acclaim Exp E1
Instrument: hplc02,i
Operator: AC
Column diameter: 4.60
uAU (x10^3)
Min
\\target_server\gg\chem\hplc02,i\HPLCLC22,b\HPLCLC22,b\HLC10124,D
-HMX (4.534)
-RDX (4.980)
-1,2-dinitrobenzene (8.154)
-4-AM-DNT (9.127)
-2-AM-DNT (9.687)
-2-nitrotoluene (11.834)
1,3-dinitrobenzene (12.287)
-4-nitrotoluene (12.987)
-3-nitrotoluene (13.360)
-2,6-dinitrotoluene (15.494)
-2,4-dinitrotoluene (19.254)
-1,3,5-trinitrobenzene (20.220)
-TETRYL (20.674)
-2,4,6-trinitrotoluene (26.427)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-19
Lab File ID : HLC10146.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/23/18 09:19
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5336	5336	0.010	-1.01366	20.00000	Averaged
4	RDX	0.25000	0.23967	5192	0.010	-4.13185	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3720	3720	0.010	0.84424	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7664	7664	0.010	2.95935	20.00000	Averaged
7	nitrobenzene	6867	6832	6832	0.010	-0.50451	20.00000	Averaged
9	TETRYL	2535	2480	2480	0.010	-2.15308	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2420	2420	0.010	-4.20990	20.00000	Averaged
11	4-AM-DNT	4303	4392	4392	0.010	2.07510	20.00000	Averaged
12	2-AM-DNT	5761	5836	5836	0.010	1.30688	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.24208	2924	0.010	-3.16911	20.00000	Linear
14	2,4-dinitrotoluene	4619	4664	4664	0.010	0.98517	20.00000	Averaged
15	2-nitrotoluene	2890	3076	3076	0.010	6.45177	20.00000	Averaged
16	4-nitrotoluene	2342	2504	2504	0.010	6.89760	20.00000	Averaged
17	3-nitrotoluene	3326	3404	3404	0.010	2.35615	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4640	4640	0.010	0.27167	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10146.D
Report Date: 30-Mar-2018 12:05

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10146.D
Lab Smp Id: WG225143-19
Inj Date : 23-MAR-2018 09:19
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-19,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:05 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 23   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.540	4.526	0.014	1334	0.25000	0.247(a)	
4	RDX	4.987	4.973	0.014	1298	0.25000	0.240(a)	
51	3,5-Dinitroaniline	7.800	7.773	0.027	2087	0.25000	0.251(a)	
7	nitrobenzene	8.167	8.140	0.027	1708	0.25000	0.249(a)	
$ 2	1,2-dinitrobenzene	8.567	8.540	0.027	1160	0.25000	0.251(a)	
11	4-AM-DNT	9.140	9.106	0.034	1098	0.25000	0.255(a)	
12	2-AM-DNT	9.700	9.660	0.040	1459	0.25000	0.253(a)	
15	2-nitrotoluene	11.854	11.806	0.048	769	0.25000	0.266(a)	
6	1,3-dinitrobenzene	12.307	12.260	0.047	1916	0.25000	0.257(a)	
16	4-nitrotoluene	13.014	12.960	0.054	626	0.25000	0.267(a)	
17	3-nitrotoluene	13.380	13.326	0.054	851	0.25000	0.256(a)	
13	2,6-dinitrotoluene	15.527	15.460	0.067	731	0.25000	0.242(a)	
14	2,4-dinitrotoluene	19.300	19.206	0.094	1166	0.25000	0.252(a)	
5	1,3,5-trinitrobenzene	20.254	20.146	0.108	930	0.25000	0.252(a)	
9	TETRYL	20.700	20.586	0.114	620	0.25000	0.245(a)	
10	2,4,6-trinitrotoluene	26.467	26.340	0.127	605	0.25000	0.239(a)	

QC Flag Legend

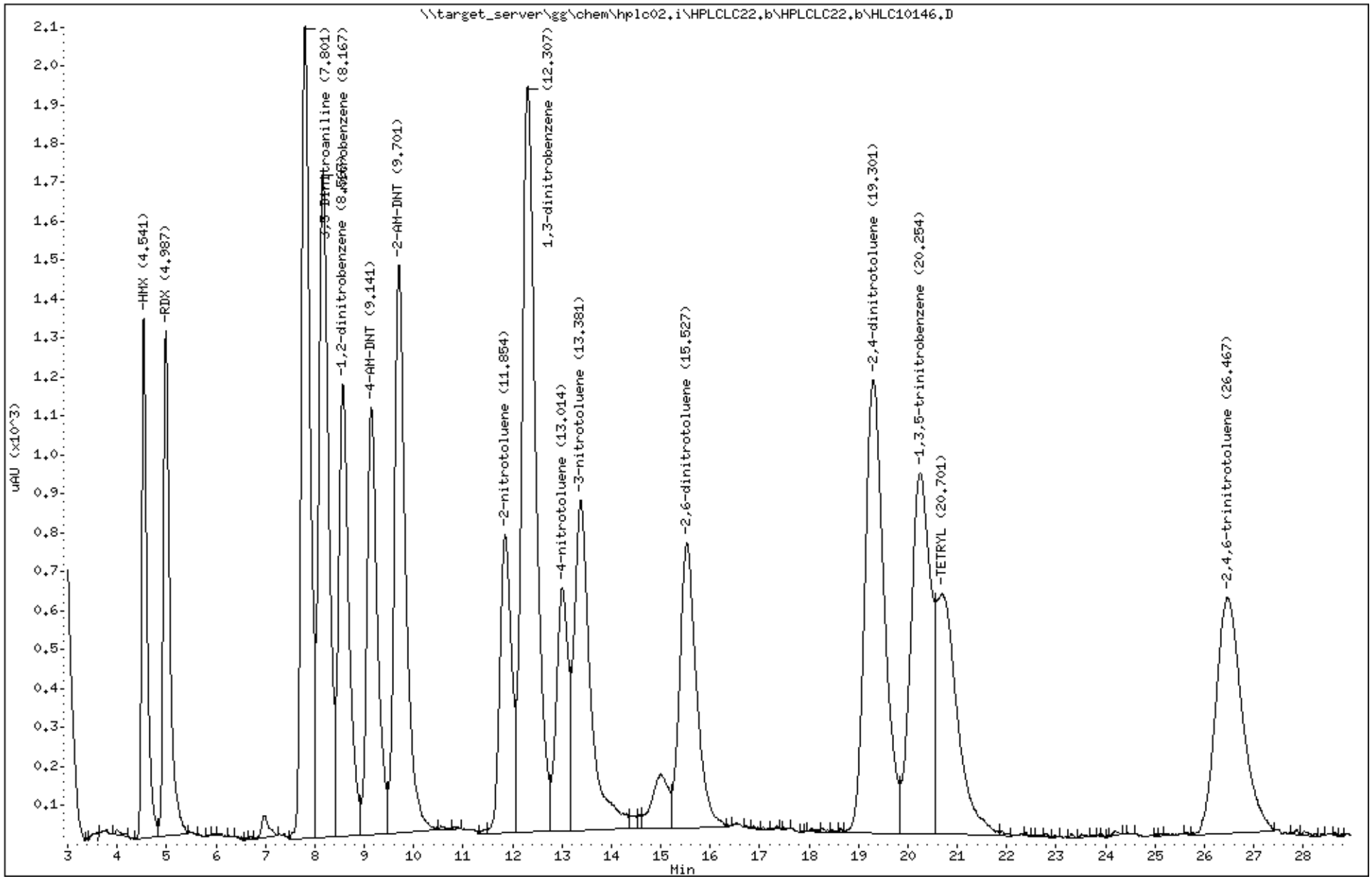
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10146.D
Date : 23-MAR-2018 09:19
Client ID:
Sample Info: WG225143-19,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000300

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-20
Lab File ID : HLC10151.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/23/18 13:44
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5462	5462	0.010	1.32372	20.00000	Averaged
4	RDX	0.50000	0.50175	5506	0.010	0.34949	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3856	3856	0.010	4.53102	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7814	7814	0.010	4.97448	20.00000	Averaged
7	nitrobenzene	6867	6904	6904	0.010	0.54404	20.00000	Averaged
9	TETRYL	2535	2766	2766	0.010	9.13088	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2550	2550	0.010	0.93585	20.00000	Averaged
11	4-AM-DNT	4303	4444	4444	0.010	3.28364	20.00000	Averaged
12	2-AM-DNT	5761	5922	5922	0.010	2.79975	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.49655	2922	0.010	-0.68977	20.00000	Linear
14	2,4-dinitrotoluene	4619	4756	4756	0.010	2.97716	20.00000	Averaged
15	2-nitrotoluene	2890	3056	3056	0.010	5.75963	20.00000	Averaged
16	4-nitrotoluene	2342	2526	2526	0.010	7.83680	20.00000	Averaged
17	3-nitrotoluene	3326	3396	3396	0.010	2.11560	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4682	4682	0.010	1.17930	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10151.D
Report Date: 30-Mar-2018 12:04

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\HPLCLC22.b\HLC10151.D
Lab Smp Id: WG225143-20
Inj Date : 23-MAR-2018 13:44
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-20,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC22.b\EXPB05A.m\EXPB05A.m
Meth Date : 30-Mar-2018 12:03 hplc02.i   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 28   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12

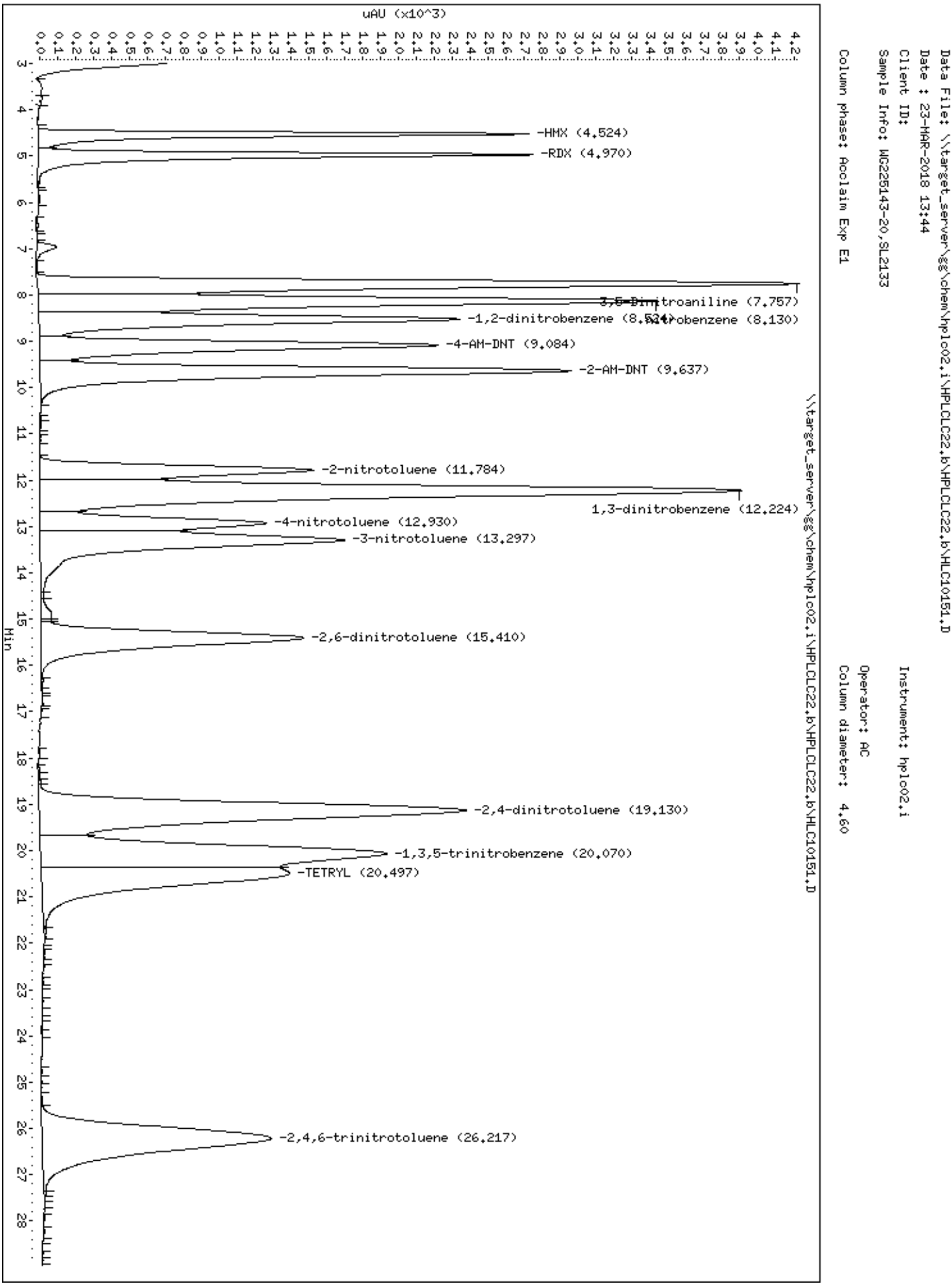
Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.523	4.526	-0.003	2731	0.25000	0.507(a)	
4	RDX	4.970	4.973	-0.003	2753	0.25000	0.502(a)	
51	3,5-Dinitroaniline	7.756	7.773	-0.017	4242	0.25000	0.510(a)	
7	nitrobenzene	8.130	8.140	-0.010	3452	0.25000	0.503(a)	
$ 2	1,2-dinitrobenzene	8.523	8.540	-0.017	2341	0.25000	0.506(a)	
11	4-AM-DNT	9.083	9.106	-0.023	2222	0.25000	0.516(a)	
12	2-AM-DNT	9.636	9.660	-0.024	2961	0.25000	0.514(a)	
15	2-nitrotoluene	11.783	11.806	-0.023	1528	0.25000	0.529(a)	
6	1,3-dinitrobenzene	12.223	12.260	-0.037	3907	0.25000	0.525(a)	
16	4-nitrotoluene	12.930	12.960	-0.030	1263	0.25000	0.539(a)	
17	3-nitrotoluene	13.296	13.326	-0.030	1698	0.25000	0.510(a)	
13	2,6-dinitrotoluene	15.410	15.460	-0.050	1461	0.25000	0.496(a)	
14	2,4-dinitrotoluene	19.130	19.206	-0.076	2378	0.25000	0.515(a)	
5	1,3,5-trinitrobenzene	20.070	20.146	-0.076	1928	0.25000	0.523(a)	
9	TETRYL	20.496	20.586	-0.090	1383	0.25000	0.546(a)	
10	2,4,6-trinitrotoluene	26.216	26.340	-0.124	1275	0.25000	0.505(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Date : 23-MAR-2018 13:44
Client ID:
Sample Info: WG225143-20,SL2133
Column phase: Acclaim Exp E1
Instrument: hplc02,i
Operator: AC
Column diameter: 4.60
uAU (x10^3)
Min
\\target_server\gg\chem\hplc02,i\HPLCLC22,b\HPLCLC22,b\HLC10151,D
-HMX (4.524)
-RDX (4.970)
3,5-Dinitroaniline (7.757)
-1,2-dinitrobenzene (8.524)
Nitrobenzene (8.130)
-4-AM-DNT (9.084)
-2-AM-DNT (9.637)
-2-nitrotoluene (11.784)
1,3-dinitrobenzene (12.224)
-4-nitrotoluene (12.930)
-3-nitrotoluene (13.297)
-2,6-dinitrotoluene (15.410)
-2,4-dinitrotoluene (19.130)
-1,3,5-trinitrobenzene (20.070)
-TETRYL (20.497)
-2,4,6-trinitrotoluene (26.217)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-21
Lab File ID : HLC10152.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/23/18 16:02
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.48050	4070	0.010	-3.89900	20.00000	Linear
4	RDX	0.50000	0.48510	3932	0.010	-2.98042	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.48336	10042	0.010	-3.32837	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.48542	11306	0.010	-2.91564	20.00000	Linear
7	nitrobenzene	0.50000	0.49051	6554	0.010	-1.89752	20.00000	Linear
9	TETRYL	0.50000	0.46169	4402	0.010	-7.66164	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.47679	5946	0.010	-4.64253	20.00000	Linear
11	4-AM-DNT	0.50000	0.46220	2246	0.010	-7.55951	20.00000	Linear
12	2-AM-DNT	0.50000	0.48448	3110	0.010	-3.10305	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.48602	3668	0.010	-2.79503	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.48666	6774	0.010	-2.66846	20.00000	Linear
15	2-nitrotoluene	0.50000	0.48948	2596	0.010	-2.10312	20.00000	Linear
16	4-nitrotoluene	0.50000	0.55414	2242	0.010	10.82721	20.00000	Linear
17	3-nitrotoluene	0.50000	0.46920	2458	0.010	-6.15969	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.45816	4868	0.010	-8.36808	20.00000	Linear

*** = Compound out of QC criteria**

Data File: HLC10152.D
Report Date: 30-Mar-2018 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10152.D
Lab Smp Id: WG225143-21
Inj Date : 23-MAR-2018 16:02
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-21,SL2133
Misc Info : WG225143,WG225027,WG210620-13,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 13:45 hplc02.i   Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 29   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

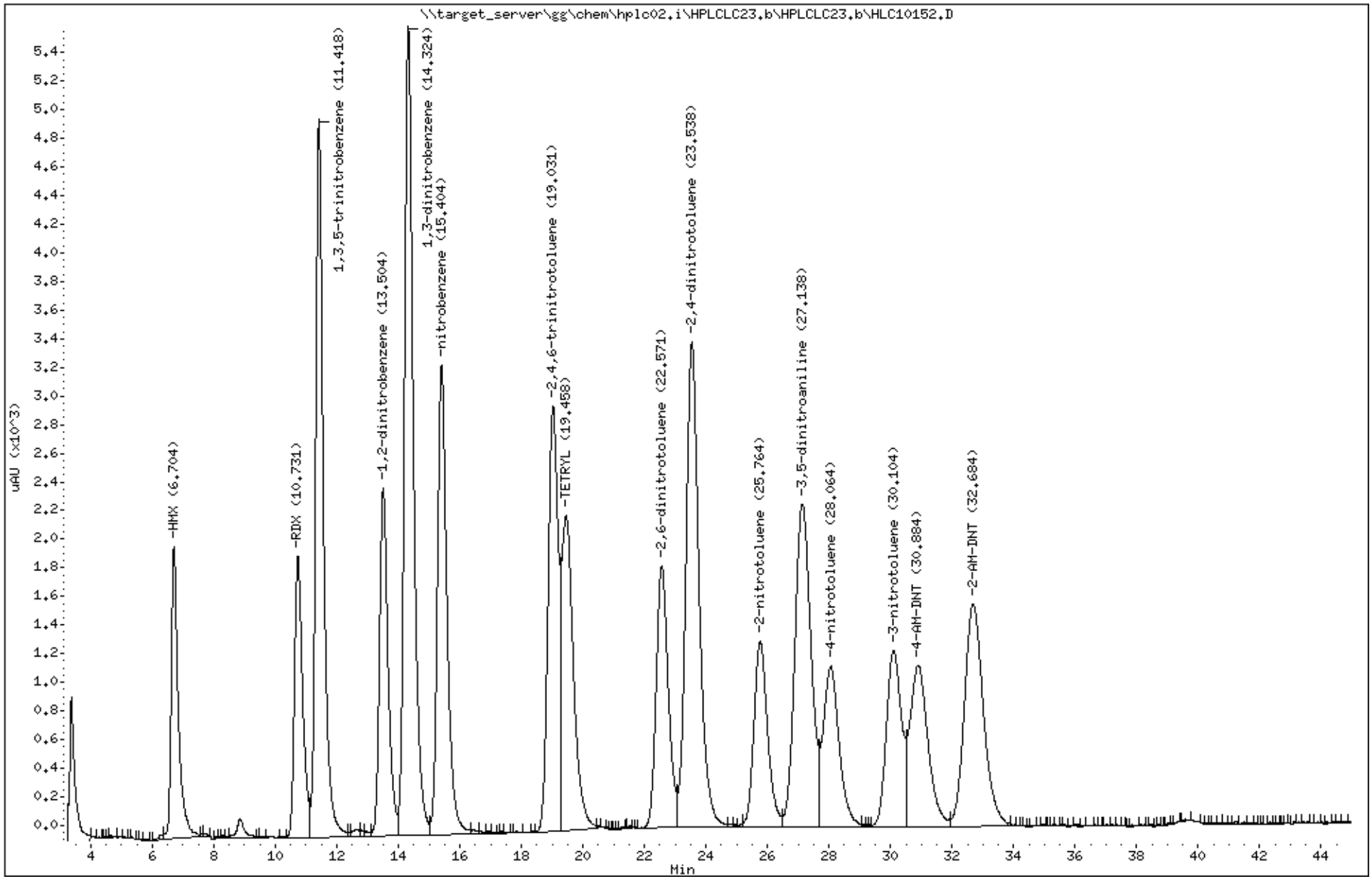
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.704	6.704	0.000	2035	0.25000	0.480	
4	RDX	10.730	10.730	0.000	1966	0.25000	0.485	
5	1,3,5-trinitrobenzene	11.417	11.417	0.000	5021	0.25000	0.483	
$ 2	1,2-dinitrobenzene	13.504	13.504	0.000	2434	0.25000	0.458	
6	1,3-dinitrobenzene	14.324	14.324	0.000	5653	0.25000	0.485	
7	nitrobenzene	15.404	15.404	0.000	3277	0.25000	0.490	
10	2,4,6-trinitrotoluene	19.030	19.030	0.000	2973	0.25000	0.477	
9	TETRYL	19.457	19.457	0.000	2201	0.25000	0.462	
13	2,6-dinitrotoluene	22.570	22.570	0.000	1834	0.25000	0.486	
14	2,4-dinitrotoluene	23.537	23.537	0.000	3387	0.25000	0.487	
15	2-nitrotoluene	25.764	25.764	0.000	1298	0.25000	0.489	
52	3,5-dinitroaniline	27.137	27.137	0.000	2253	0.25000	0.515	
16	4-nitrotoluene	28.064	28.064	0.000	1121	0.25000	0.554	
17	3-nitrotoluene	30.104	30.104	0.000	1229	0.25000	0.469	
11	4-AM-DNT	30.884	30.884	0.000	1123	0.25000	0.462	
12	2-AM-DNT	32.684	32.684	0.000	1555	0.25000	0.484	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10152.D
Date : 23-MAR-2018 16:02
Client ID:
Sample Info: WG225143-21,SL2133

Column phase: Acclaim Exp E2

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60



Katahdin Analytical Services 2000306

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-22
Lab File ID : HLC10163.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/24/18 01:03
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.23405	4000	0.010	-6.37877	20.00000	Linear
4	RDX	0.25000	0.23650	3816	0.010	-5.39947	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23375	9728	0.010	-6.49814	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.23575	11024	0.010	-5.69813	20.00000	Linear
7	nitrobenzene	0.25000	0.23823	6388	0.010	-4.70632	20.00000	Linear
9	TETRYL	0.25000	0.20482	4032	0.010	-18.07241	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.22974	5804	0.010	-8.10444	20.00000	Linear
11	4-AM-DNT	0.25000	0.21612	2176	0.010	-13.55128	20.00000	Linear
12	2-AM-DNT	0.25000	0.23190	3032	0.010	-7.23912	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.23668	3596	0.010	-5.32659	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.23492	6600	0.010	-6.03047	20.00000	Linear
15	2-nitrotoluene	0.25000	0.24159	2584	0.010	-3.36431	20.00000	Linear
16	4-nitrotoluene	0.25000	0.27415	2304	0.010	9.65919	20.00000	Linear
17	3-nitrotoluene	0.25000	0.22286	2392	0.010	-10.85737	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22416	4788	0.010	-10.33490	20.00000	Linear

*** = Compound out of QC criteria**

Data File: HLC10163.D
Report Date: 30-Mar-2018 12:28

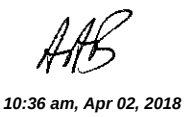
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10163.D
Lab Smp Id: WG225143-22
Inj Date : 24-MAR-2018 01:03
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-22,SL2133
Misc Info : WG225143,WG225027,WG210620-13,SL2133-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 13:45 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 40 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

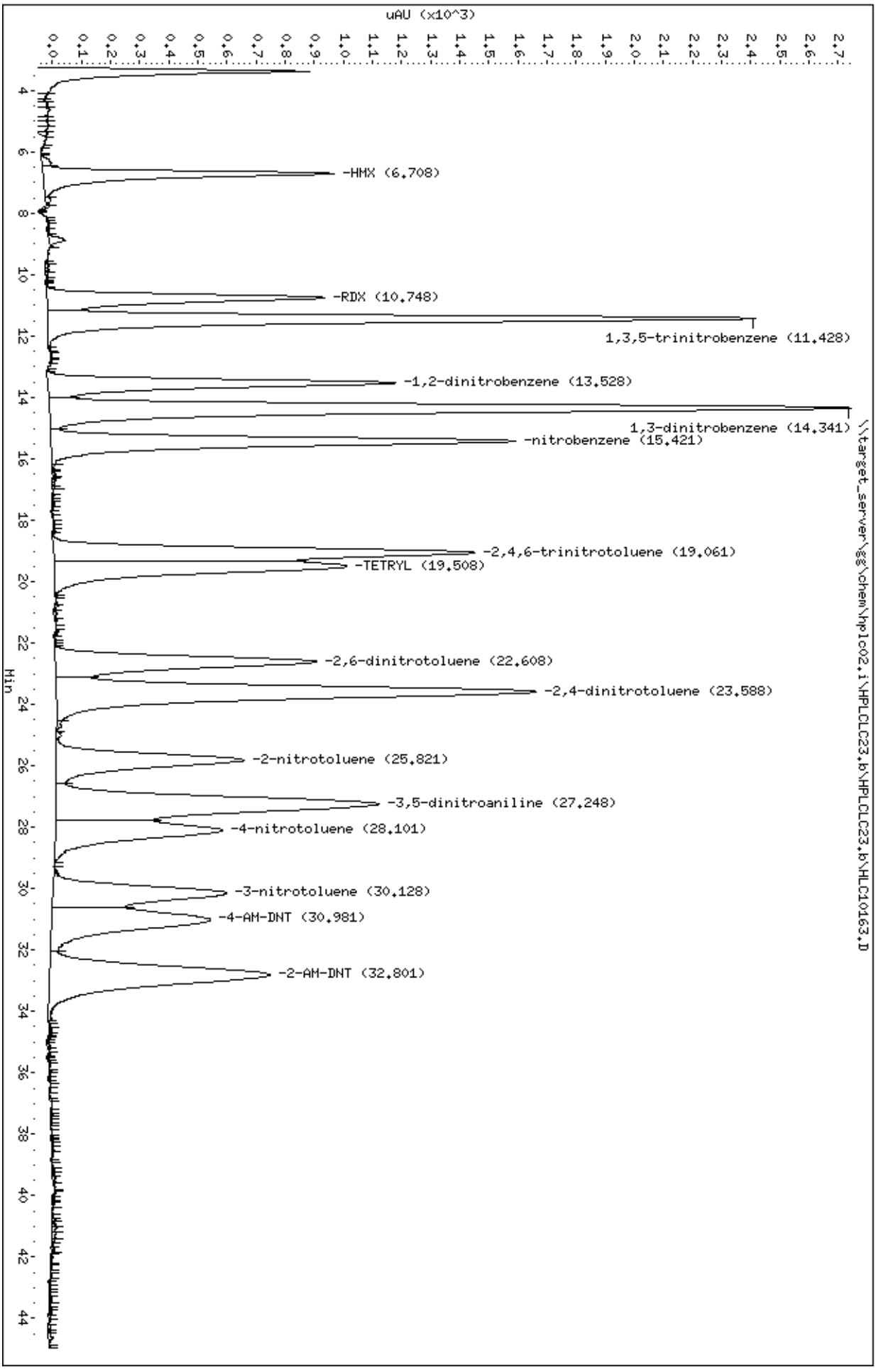
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.707	6.704	0.003	1000	0.25000	0.234(a)	
4	RDX	10.747	10.730	0.017	954	0.25000	0.236(a)	
5	1,3,5-trinitrobenzene	11.427	11.417	0.010	2432	0.25000	0.234(a)	
$ 2	1,2-dinitrobenzene	13.527	13.504	0.023	1197	0.25000	0.224	
6	1,3-dinitrobenzene	14.341	14.324	0.017	2756	0.25000	0.236(a)	
7	nitrobenzene	15.421	15.404	0.017	1597	0.25000	0.238(a)	
10	2,4,6-trinitrotoluene	19.061	19.030	0.031	1451	0.25000	0.230(a)	
9	TETRYL	19.507	19.457	0.050	1008	0.25000	0.205(a)	
13	2,6-dinitrotoluene	22.607	22.570	0.037	899	0.25000	0.237(a)	
14	2,4-dinitrotoluene	23.587	23.537	0.050	1650	0.25000	0.235(a)	
15	2-nitrotoluene	25.821	25.764	0.057	646	0.25000	0.242(aM)	M9
52	3,5-dinitroaniline	27.247	27.137	0.110	1114	0.25000	0.251(M)	M9
16	4-nitrotoluene	28.101	28.064	0.037	576	0.25000	0.274(M)	M9
17	3-nitrotoluene	30.127	30.104	0.023	598	0.25000	0.223(aM)	M9
11	4-AM-DNT	30.981	30.884	0.097	544	0.25000	0.216(aM)	M9
12	2-AM-DNT	32.801	32.684	0.117	758	0.25000	0.232(aM)	M9



10:36 am, Apr 02, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\hplc02,i\HPLCLC23,b\HPLCLC23,b\HLC10163,D
Date : 24-MAR-2018 01:03
Client ID:
Sample Info: WG225143-22,SL2133
Instrument: hplc02,i
Operator: AC
Column diameter: 4.60
Column phase: Acclaim Exp E2
uAU (x10^3)
Min
-HMX (6.708)
-RDX (10.748)
1,3,5-trinitrobenzene (11.428)
-1,2-dinitrobenzene (13.528)
1,3-dinitrobenzene (14.341)
-nitrobenzene (15.421)
-2,4,6-trinitrotoluene (19.061)
-TETRYL (19.508)
-2,6-dinitrotoluene (22.608)
-2,4-dinitrotoluene (23.588)
-2-nitrotoluene (25.821)
-3,5-dinitroaniline (27.248)
-4-nitrotoluene (28.101)
-3-nitrotoluene (30.128)
-4-AM-DNT (30.981)
-2-AM-DNT (32.801)
\\target_server\gg\chem\hplc02,i\HPLCLC23,b\HPLCLC23,b\HLC10163,D

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-24
Lab File ID : HLC10175.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 08:57
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5420	5420	0.010	0.54459	20.00000	Averaged
4	RDX	0.50000	0.49238	5402	0.010	-1.52377	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3778	3778	0.010	2.41654	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7760	7760	0.010	4.24903	20.00000	Averaged
7	nitrobenzene	6867	6904	6904	0.010	0.54404	20.00000	Averaged
9	TETRYL	2535	2450	2450	0.010	-3.33672	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2516	2516	0.010	-0.40996	20.00000	Averaged
11	4-AM-DNT	4303	4382	4382	0.010	1.84269	20.00000	Averaged
12	2-AM-DNT	5761	5868	5868	0.010	1.86237	20.00000	Averaged
13	2,6-dinitrotoluene	0.50000	0.50945	2996	0.010	1.88983	20.00000	Linear
14	2,4-dinitrotoluene	4619	4694	4694	0.010	1.63473	20.00000	Averaged
15	2-nitrotoluene	2890	3056	3056	0.010	5.75963	20.00000	Averaged
16	4-nitrotoluene	2342	2492	2492	0.010	6.38531	20.00000	Averaged
17	3-nitrotoluene	3326	3386	3386	0.010	1.81490	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4602	4602	0.010	-0.54952	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10175.D
Report Date: 30-Mar-2018 12:38

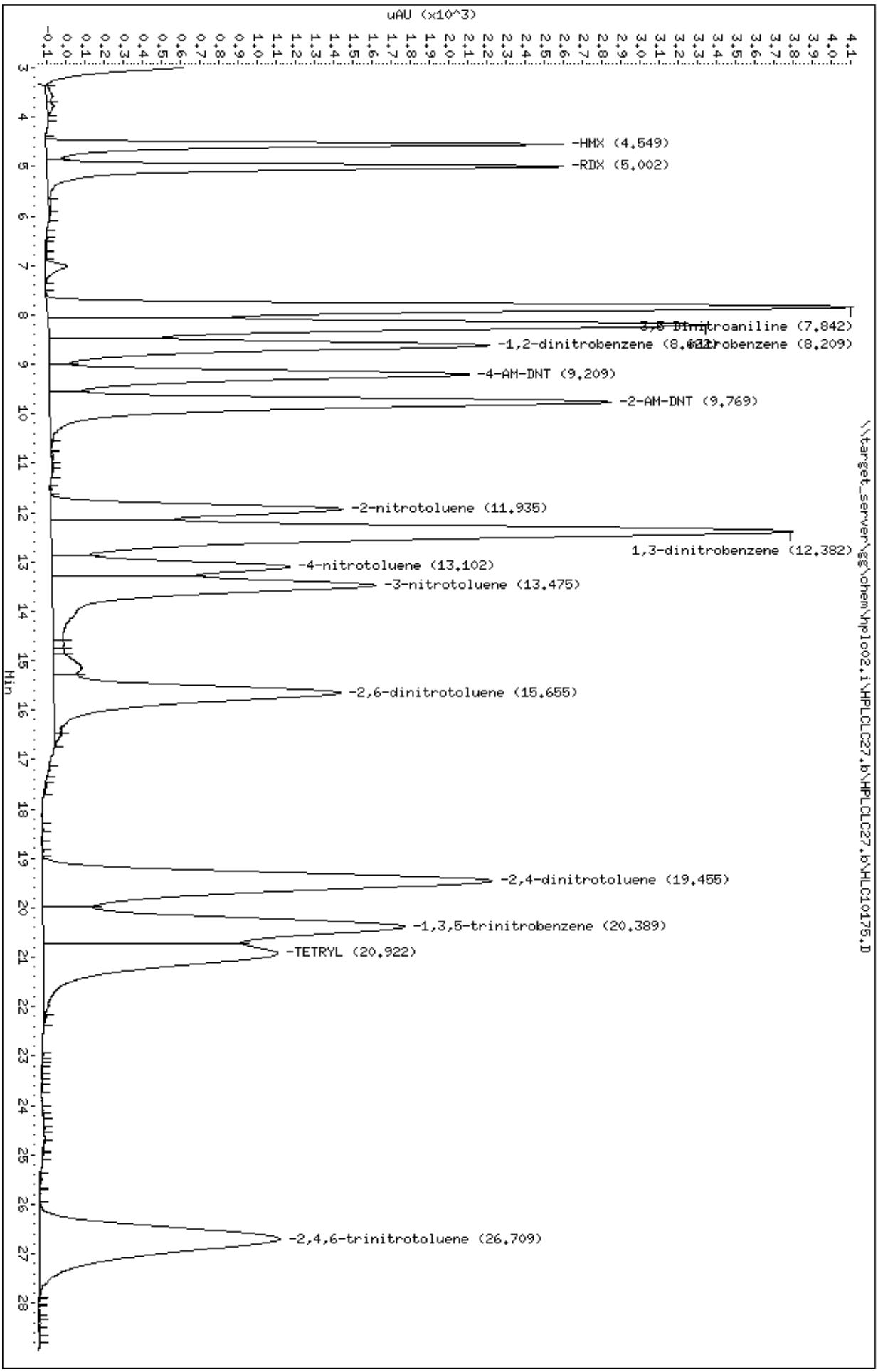
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10175.D
Lab Smp Id: WG225143-24
Inj Date : 27-MAR-2018 08:57
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-24,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m\EXPB05A.m
Meth Date : 28-Mar-2018 10:48 acronin   Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05   Cal File: HLC10037.D
Als bottle: 1   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.548	4.548	0.000	2710	0.25000	0.503	
4	RDX	5.001	5.001	0.000	2701	0.25000	0.492	
51	3,5-Dinitroaniline	7.841	7.841	0.000	4215	0.25000	0.507	
7	nitrobenzene	8.208	8.208	0.000	3452	0.25000	0.503	
$ 2	1,2-dinitrobenzene	8.621	8.621	0.000	2301	0.25000	0.497	
11	4-AM-DNT	9.208	9.208	0.000	2191	0.25000	0.509	
12	2-AM-DNT	9.768	9.768	0.000	2934	0.25000	0.509	
15	2-nitrotoluene	11.935	11.935	0.000	1528	0.25000	0.529	
6	1,3-dinitrobenzene	12.381	12.381	0.000	3880	0.25000	0.521	
16	4-nitrotoluene	13.101	13.101	0.000	1246	0.25000	0.532	
17	3-nitrotoluene	13.475	13.475	0.000	1693	0.25000	0.509	
13	2,6-dinitrotoluene	15.655	15.655	0.000	1498	0.25000	0.509	
14	2,4-dinitrotoluene	19.455	19.455	0.000	2347	0.25000	0.508	
5	1,3,5-trinitrobenzene	20.388	20.388	0.000	1889	0.25000	0.512	
9	TETRYL	20.921	20.921	0.000	1225	0.25000	0.483	
10	2,4,6-trinitrotoluene	26.708	26.708	0.000	1258	0.25000	0.498	


Data File: \\target_server\gg\chem\hplc02,i\HPLCLC27,b\HPLCLC27,b\HLC10175,D
Date : 27-MAR-2018 08:57
Client ID:
Sample Info: WG225143-24,SL2133
Column phase: Acclaim Exp E1
Instrument: hplc02,i
Operator: AC
Column diameter: 4.60
uAU (x10^3)
Min
\\target_server\gg\chem\hplc02,i\HPLCLC27,b\HPLCLC27,b\HLC10175,D
-HMX (4.549)
-RDX (5.002)
3,5-Dinitroaniline (7.842)
-1,2-dinitrobenzene (8.209)
-4-AM-DNT (9.209)
-2-AM-DNT (9.769)
-2-nitrotoluene (11.935)
1,3-dinitrobenzene (12.382)
-4-nitrotoluene (13.102)
-3-nitrotoluene (13.475)
-2,6-dinitrotoluene (15.655)
-2,4-dinitrotoluene (19.455)
-1,3,5-trinitrobenzene (20.389)
-TETRYL (20.922)
-2,4,6-trinitrotoluene (26.709)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-25
Lab File ID : HLC10180.D
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05

SDG: SL2133
Analytical Date: 03/27/18 12:10
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5424	5424	0.010	0.61880	20.00000	Averaged
4	RDX	0.25000	0.24345	5276	0.010	-2.61883	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3816	3816	0.010	3.44667	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7764	7764	0.010	4.30277	20.00000	Averaged
7	nitrobenzene	6867	6840	6840	0.010	-0.38800	20.00000	Averaged
9	TETRYL	2535	2424	2424	0.010	-4.36253	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2568	2568	0.010	1.64834	20.00000	Averaged
11	4-AM-DNT	4303	4408	4408	0.010	2.44696	20.00000	Averaged
12	2-AM-DNT	5761	5876	5876	0.010	2.00124	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23650	2860	0.010	-5.40011	20.00000	Linear
14	2,4-dinitrotoluene	4619	4676	4676	0.010	1.24499	20.00000	Averaged
15	2-nitrotoluene	2890	3160	3160	0.010	9.35878	20.00000	Averaged
16	4-nitrotoluene	2342	2480	2480	0.010	5.87303	20.00000	Averaged
17	3-nitrotoluene	3326	3336	3336	0.010	0.31143	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4608	4608	0.010	-0.41986	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10180.D
Report Date: 30-Mar-2018 12:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10180.D
Lab Smp Id: WG225143-25
Inj Date : 27-MAR-2018 12:10
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-25,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m\EXPB05A.m
Meth Date : 28-Mar-2018 10:48 acronin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 6 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.546	4.548	-0.002	1356	0.25000	0.252	
4	RDX	4.999	5.001	-0.002	1319	0.25000	0.243(a)	
51	3,5-Dinitroaniline	7.826	7.841	-0.015	2111	0.25000	0.254	
7	nitrobenzene	8.192	8.208	-0.016	1710	0.25000	0.249(a)	
$ 2	1,2-dinitrobenzene	8.606	8.621	-0.015	1152	0.25000	0.249(a)	
11	4-AM-DNT	9.186	9.208	-0.022	1102	0.25000	0.256	
12	2-AM-DNT	9.746	9.768	-0.022	1469	0.25000	0.255	
15	2-nitrotoluene	11.919	11.935	-0.016	790	0.25000	0.273(M)	M8
6	1,3-dinitrobenzene	12.359	12.381	-0.022	1941	0.25000	0.261(M)	M8
16	4-nitrotoluene	13.086	13.101	-0.015	620	0.25000	0.265(M)	M8
17	3-nitrotoluene	13.452	13.475	-0.023	834	0.25000	0.251(M)	M8
13	2,6-dinitrotoluene	15.619	15.655	-0.036	715	0.25000	0.236(a)	
14	2,4-dinitrotoluene	19.412	19.455	-0.043	1169	0.25000	0.253	
5	1,3,5-trinitrobenzene	20.339	20.388	-0.049	954	0.25000	0.259	
9	TETRYL	20.859	20.921	-0.062	606	0.25000	0.239(a)	
10	2,4,6-trinitrotoluene	26.646	26.708	-0.062	642	0.25000	0.254	

10:36 am, Apr 02, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: HLC10180.D
Report Date: 30-Mar-2018 12:38

QC Flag Legend

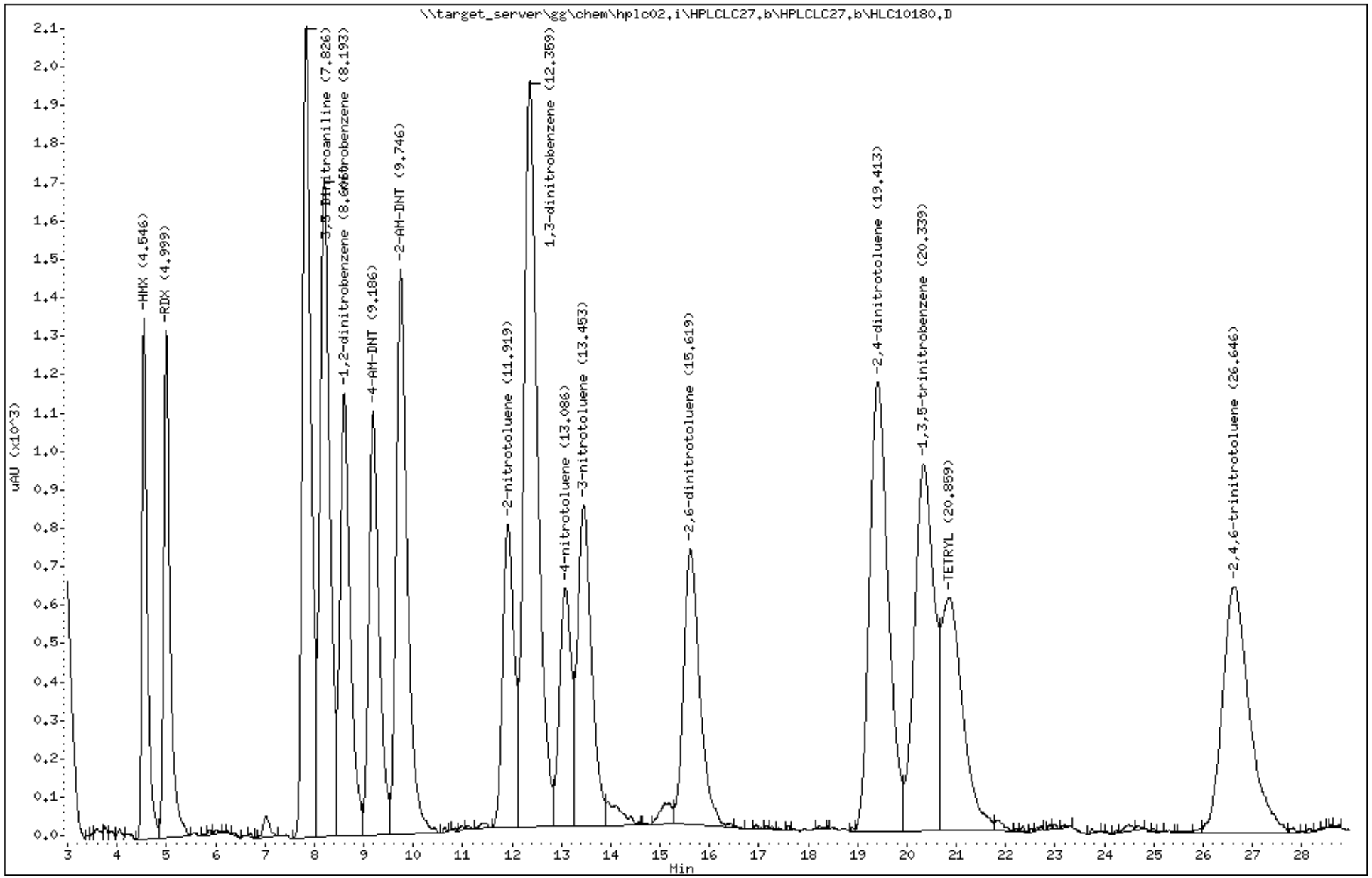
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10180.D
Date : 27-MAR-2018 12:10
Client ID:
Sample Info: WG225143-25,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000316

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2133
Lab ID : WG225143-26
Analytical Date: 03/27/18 18:36
Lab File ID : HLC10191.D
Instrument ID: HPLC02
Initial Calibration Date(s): 03/20/18 14:54 03/20/18 18:05
Column ID: B

	Compound	RRF/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	5391	5424	5424	0.010	0.61880	20.00000	Averaged
4	RDX	0.25000	0.24201	5244	0.010	-3.19522	20.00000	Linear
5	1,3,5-trinitrobenzene	3689	3732	3732	0.010	1.16955	20.00000	Averaged
6	1,3-dinitrobenzene	7444	7708	7708	0.010	3.55045	20.00000	Averaged
7	nitrobenzene	6867	6784	6784	0.010	-1.20354	20.00000	Averaged
9	TETRYL	2535	2352	2352	0.010	-7.20325	20.00000	Averaged
10	2,4,6-trinitrotoluene	2526	2488	2488	0.010	-1.51828	20.00000	Averaged
11	4-AM-DNT	4303	4372	4372	0.010	1.61028	20.00000	Averaged
12	2-AM-DNT	5761	5836	5836	0.010	1.30688	20.00000	Averaged
13	2,6-dinitrotoluene	0.25000	0.23929	2892	0.010	-4.28461	20.00000	Linear
14	2,4-dinitrotoluene	4619	4700	4700	0.010	1.76464	20.00000	Averaged
15	2-nitrotoluene	2890	3152	3152	0.010	9.08192	20.00000	Averaged
16	4-nitrotoluene	2342	2496	2496	0.010	6.55608	20.00000	Averaged
17	3-nitrotoluene	3326	3372	3372	0.010	1.39393	20.00000	Averaged
2	1,2-dinitrobenzene	4627	4584	4584	0.010	-0.93850	20.00000	Averaged

*** = Compound out of QC criteria**

Data File: HLC10191.D
Report Date: 30-Mar-2018 12:38

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10191.D
Lab Smp Id: WG225143-26
Inj Date : 27-MAR-2018 18:36
Operator : AC Inst ID: hplc02.i
Smp Info : WG225143-26,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m\EXPB05A.m
Meth Date : 28-Mar-2018 10:48 acronin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 17 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	4.548	4.548	0.000	1356	0.25000	0.252	
4	RDX	5.001	5.001	0.000	1311	0.25000	0.242(a)	
51	3,5-Dinitroaniline	7.834	7.841	-0.007	2088	0.25000	0.251	
7	nitrobenzene	8.201	8.208	-0.007	1696	0.25000	0.247(a)	
$ 2	1,2-dinitrobenzene	8.608	8.621	-0.013	1146	0.25000	0.248(a)	
11	4-AM-DNT	9.188	9.208	-0.020	1093	0.25000	0.254	
12	2-AM-DNT	9.748	9.768	-0.020	1459	0.25000	0.253	
15	2-nitrotoluene	11.921	11.935	-0.014	788	0.25000	0.273(M)	M8
6	1,3-dinitrobenzene	12.361	12.381	-0.020	1927	0.25000	0.259(M)	
16	4-nitrotoluene	13.081	13.101	-0.020	624	0.25000	0.266(M)	
17	3-nitrotoluene	13.454	13.475	-0.021	843	0.25000	0.253(M)	
13	2,6-dinitrotoluene	15.621	15.655	-0.034	723	0.25000	0.239(a)	
14	2,4-dinitrotoluene	19.414	19.455	-0.041	1175	0.25000	0.254	
5	1,3,5-trinitrobenzene	20.348	20.388	-0.040	933	0.25000	0.253	
9	TETRYL	20.848	20.921	-0.073	588	0.25000	0.232(a)	
10	2,4,6-trinitrotoluene	26.648	26.708	-0.060	622	0.25000	0.246(a)	

10:36 am, Apr 02, 2018

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: HLC10191.D
Report Date: 30-Mar-2018 12:38

QC Flag Legend

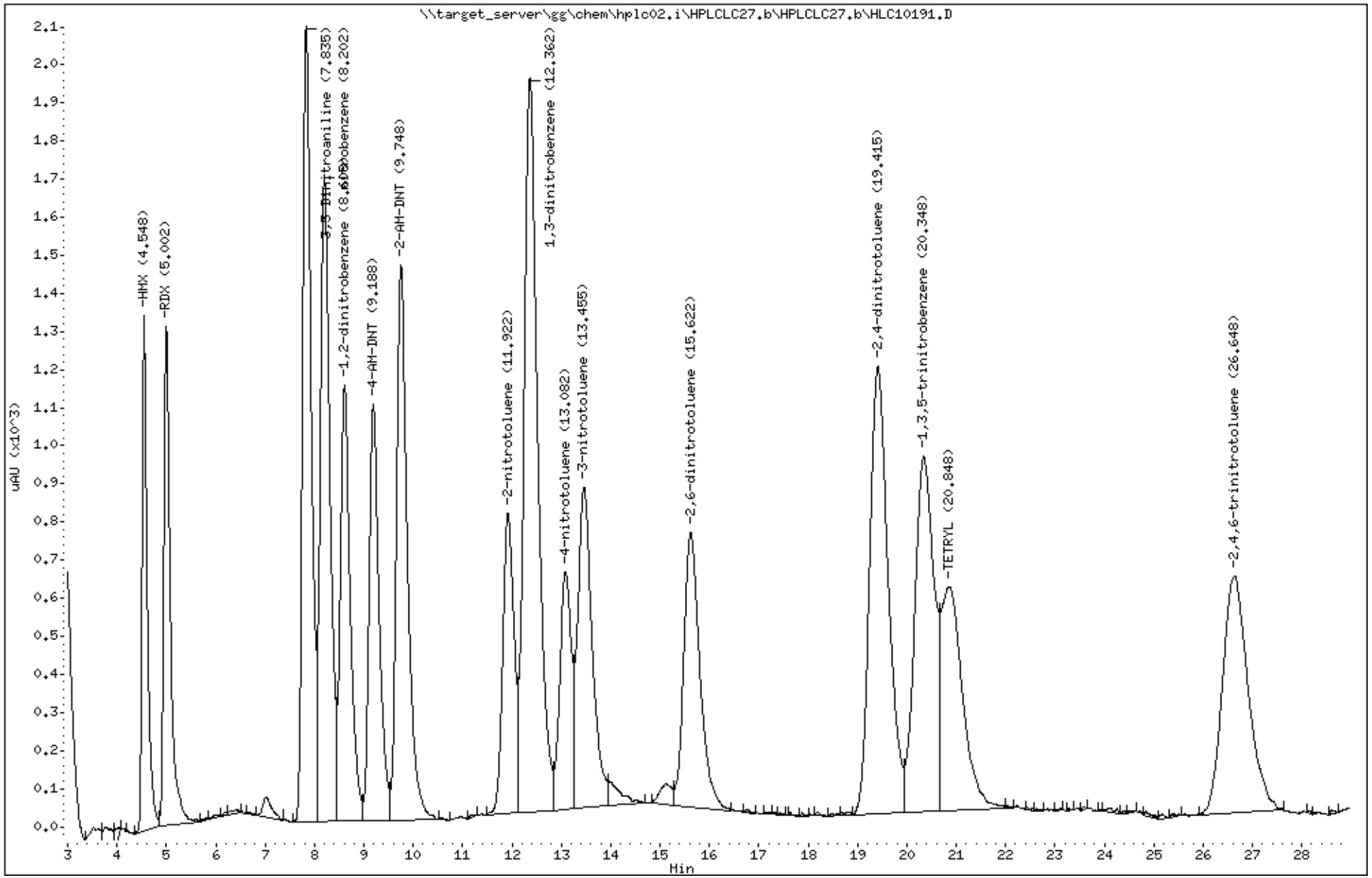
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10191.D
Date : 27-MAR-2018 18:36
Client ID:
Sample Info: WG225143-26,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000320

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-28
Lab File ID : HLC10200.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/28/18 10:07
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.48431	4102	0.010	-3.13702	20.00000	Linear
4	RDX	0.50000	0.49124	3982	0.010	-1.75218	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.48683	10114	0.010	-2.63422	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.49102	11436	0.010	-1.79528	20.00000	Linear
7	nitrobenzene	0.50000	0.49592	6626	0.010	-0.81633	20.00000	Linear
9	TETRYL	0.50000	0.49787	4738	0.010	-0.42700	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.49237	6138	0.010	-1.52602	20.00000	Linear
11	4-AM-DNT	0.50000	0.48388	2348	0.010	-3.22441	20.00000	Linear
12	2-AM-DNT	0.50000	0.49811	3196	0.010	-0.37757	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.49776	3756	0.010	-0.44829	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.49709	6918	0.010	-0.58155	20.00000	Linear
15	2-nitrotoluene	0.50000	0.50279	2666	0.010	0.55833	20.00000	Linear
16	4-nitrotoluene	0.50000	0.54232	2196	0.010	8.46401	20.00000	Linear
17	3-nitrotoluene	0.50000	0.49106	2570	0.010	-1.78716	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46289	4918	0.010	-7.42226	20.00000	Linear

*** = Compound out of QC criteria**

Data File: HLC10200.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10200.D
Lab Smp Id: WG225143-28
Inj Date : 28-MAR-2018 10:07
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-28,SL2133
Misc Info : WG225143,WG225028,WG210620-13,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i   Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 26   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: CV.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

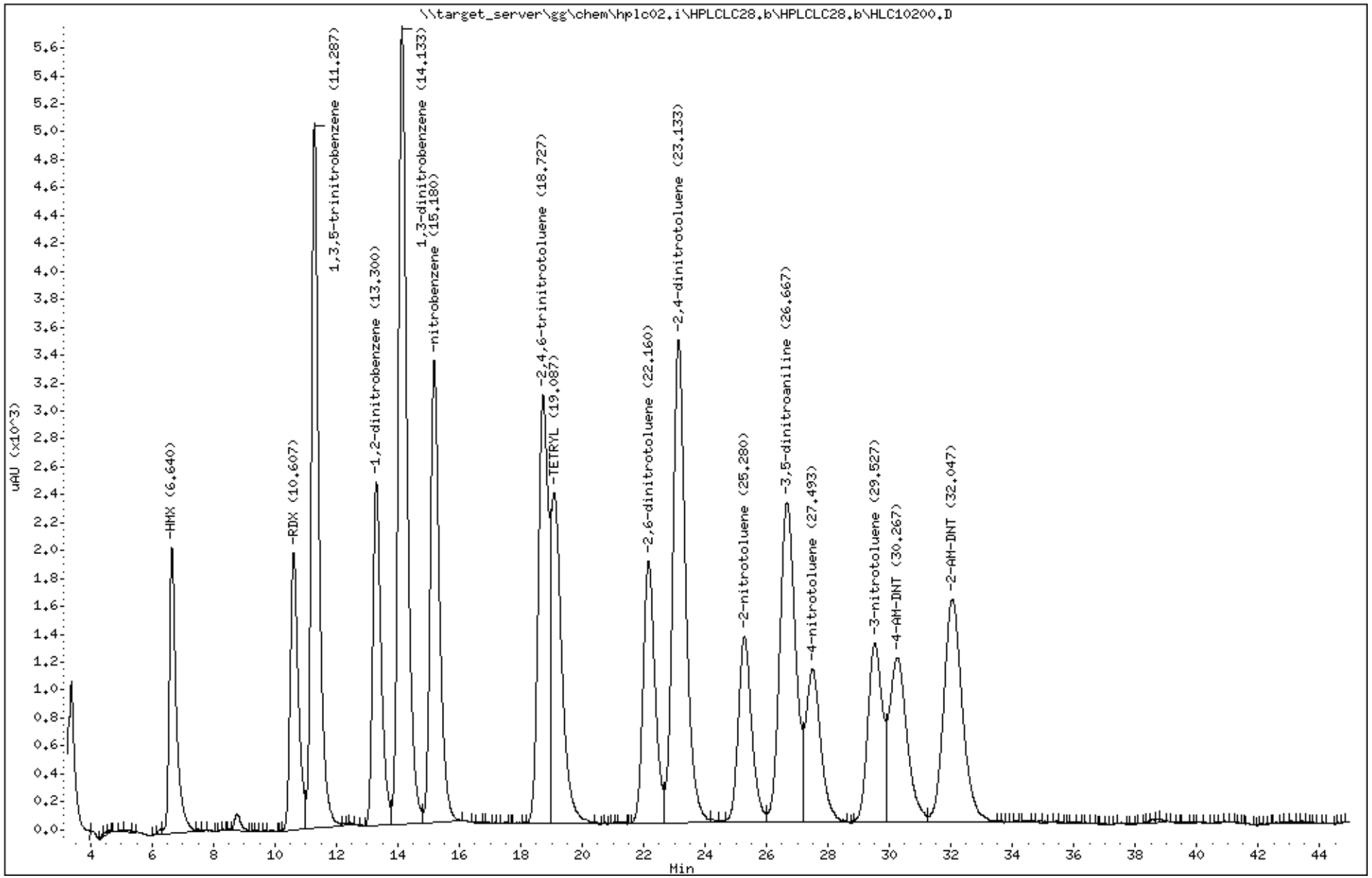
	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.639	6.639	0.000	2051	0.25000	0.484	
4	RDX	10.606	10.606	0.000	1991	0.25000	0.491	
5	1,3,5-trinitrobenzene	11.286	11.286	0.000	5057	0.25000	0.487	
$ 2	1,2-dinitrobenzene	13.299	13.299	0.000	2459	0.25000	0.463	
6	1,3-dinitrobenzene	14.133	14.133	0.000	5718	0.25000	0.491	
7	nitrobenzene	15.179	15.179	0.000	3313	0.25000	0.496	
10	2,4,6-trinitrotoluene	18.726	18.726	0.000	3069	0.25000	0.492	
9	TETRYL	19.086	19.086	0.000	2369	0.25000	0.498	
13	2,6-dinitrotoluene	22.159	22.159	0.000	1878	0.25000	0.498	
14	2,4-dinitrotoluene	23.133	23.133	0.000	3459	0.25000	0.497	
15	2-nitrotoluene	25.279	25.279	0.000	1333	0.25000	0.503	
52	3,5-dinitroaniline	26.666	26.666	0.000	2297	0.25000	0.525	
16	4-nitrotoluene	27.493	27.493	0.000	1098	0.25000	0.542	
17	3-nitrotoluene	29.526	29.526	0.000	1285	0.25000	0.491	
11	4-AM-DNT	30.266	30.266	0.000	1174	0.25000	0.484	
12	2-AM-DNT	32.046	32.046	0.000	1598	0.25000	0.498	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10200.D
Date : 28-MAR-2018 10:07
Client ID:
Sample Info: WG225143-28,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000323

REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-29
Lab File ID : HLC10211.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/28/18 19:20
Instrument ID: HPLC02
Column ID: B

	Compound	RRF/Amount	RF0.250	CCAL RRF0.250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.25000	0.24167	4128	0.010	-3.33086	20.00000	Linear
4	RDX	0.25000	0.24092	3888	0.010	-3.63080	20.00000	Linear
5	1,3,5-trinitrobenzene	0.25000	0.23886	9940	0.010	-4.45426	20.00000	Linear
6	1,3-dinitrobenzene	0.25000	0.24334	11376	0.010	-2.66455	20.00000	Linear
7	nitrobenzene	0.25000	0.24649	6608	0.010	-1.40268	20.00000	Linear
9	TETRYL	0.25000	0.22721	4448	0.010	-9.11523	20.00000	Linear
10	2,4,6-trinitrotoluene	0.25000	0.24208	6108	0.010	-3.16996	20.00000	Linear
11	4-AM-DNT	0.25000	0.23950	2396	0.010	-4.20107	20.00000	Linear
12	2-AM-DNT	0.25000	0.24173	3156	0.010	-3.30936	20.00000	Linear
13	2,6-dinitrotoluene	0.25000	0.24548	3728	0.010	-1.80648	20.00000	Linear
14	2,4-dinitrotoluene	0.25000	0.24550	6892	0.010	-1.79867	20.00000	Linear
15	2-nitrotoluene	0.25000	0.24083	2576	0.010	-3.66848	20.00000	Linear
16	4-nitrotoluene	0.25000	0.25719	2172	0.010	2.87782	20.00000	Linear
17	3-nitrotoluene	0.25000	0.23847	2552	0.010	-4.61090	20.00000	Linear
2	1,2-dinitrobenzene	0.25000	0.22832	4876	0.010	-8.67025	20.00000	Linear

*** = Compound out of QC criteria**

Data File: HLC10211.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10211.D
Lab Smp Id: WG225143-29
Inj Date : 28-MAR-2018 19:20
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-29,SL2133
Misc Info : WG225143,WG225028,WG210620-13,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i   Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 37   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: CV.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.626	6.639	-0.013	1032	0.25000	0.242(a)	
4	RDX	10.592	10.606	-0.014	972	0.25000	0.241(a)	
5	1,3,5-trinitrobenzene	11.292	11.286	0.006	2485	0.25000	0.239(a)	
$ 2	1,2-dinitrobenzene	13.312	13.299	0.013	1219	0.25000	0.228(a)	
6	1,3-dinitrobenzene	14.146	14.133	0.013	2844	0.25000	0.243(a)	
7	nitrobenzene	15.206	15.179	0.027	1652	0.25000	0.246(a)	
10	2,4,6-trinitrotoluene	18.766	18.726	0.040	1527	0.25000	0.242(a)	
9	TETRYL	19.112	19.086	0.026	1112	0.25000	0.227(a)	
13	2,6-dinitrotoluene	22.206	22.159	0.047	932	0.25000	0.245(a)	
14	2,4-dinitrotoluene	23.179	23.133	0.046	1723	0.25000	0.246(a)	
15	2-nitrotoluene	25.339	25.279	0.060	644	0.25000	0.241(a)	
52	3,5-dinitroaniline	26.659	26.666	-0.007	1143	0.25000	0.258	
16	4-nitrotoluene	27.592	27.493	0.099	543	0.25000	0.257	
17	3-nitrotoluene	29.619	29.526	0.093	638	0.25000	0.238(a)	
11	4-AM-DNT	30.279	30.266	0.013	599	0.25000	0.239(a)	
12	2-AM-DNT	32.079	32.046	0.033	789	0.25000	0.242(a)	

QC Flag Legend

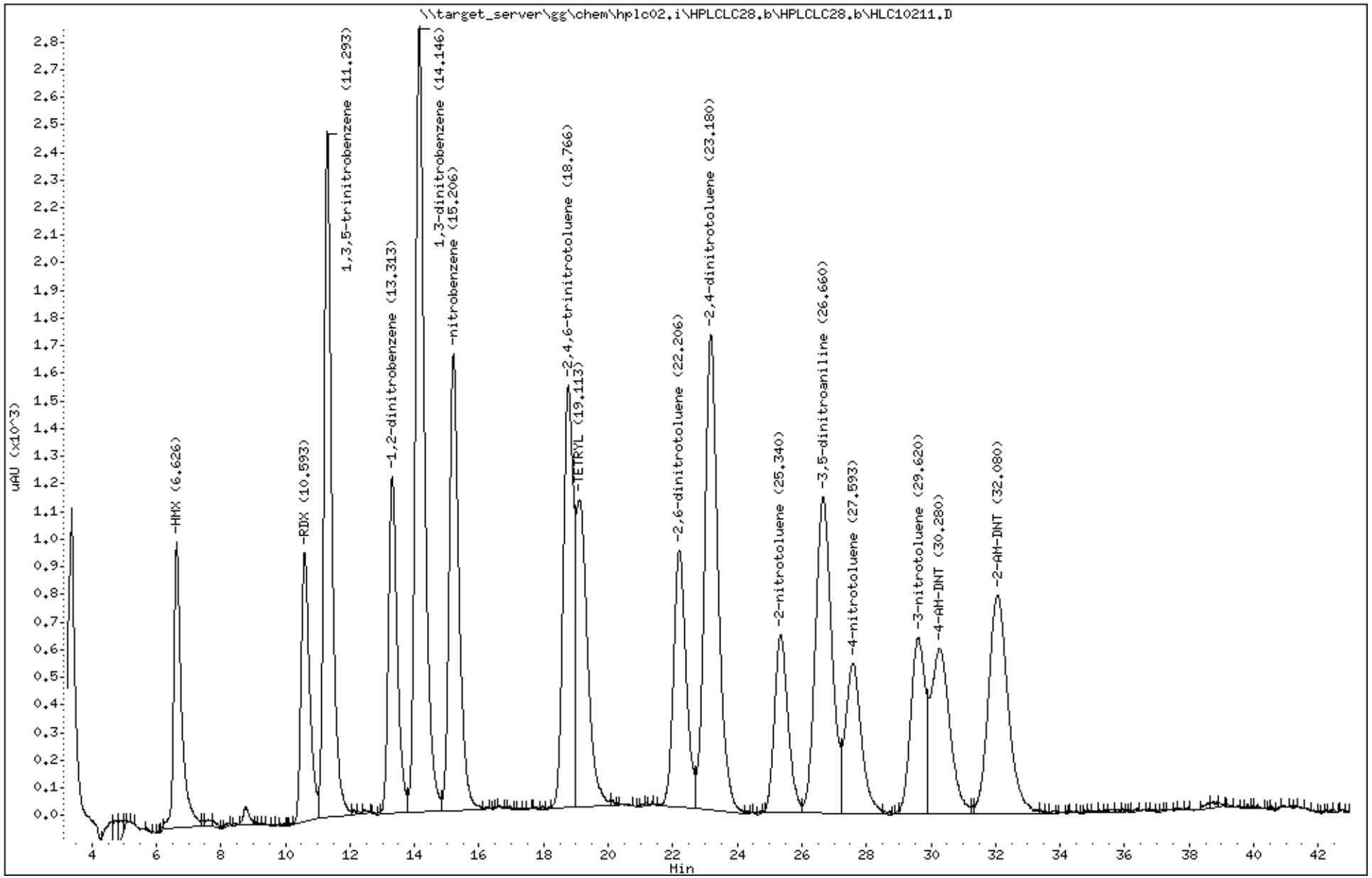
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10211.D
Date : 28-MAR-2018 19:20
Client ID:
Sample Info: WG225143-29,SL2133

Column phase: Acclaim Exp E2

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60



Katahdin Analytical Services 2000326
REISSUE

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225143-30
Lab File ID : HLC10222.D
Initial Calibration Date(s): 08/01/17 09:37 08/01/17 14:33

SDG: SL2133
Analytical Date: 03/29/18 03:58
Instrument ID: HPLC02
Column ID: B

	Compound	$\overline{RRF}$/Amount	RF0.500	CCAL RRF0.500	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	HMX	0.50000	0.48598	4116	0.010	-2.80366	20.00000	Linear
4	RDX	0.50000	0.49148	3984	0.010	-1.70305	20.00000	Linear
5	1,3,5-trinitrobenzene	0.50000	0.48249	10024	0.010	-3.50191	20.00000	Linear
6	1,3-dinitrobenzene	0.50000	0.49542	11538	0.010	-0.91623	20.00000	Linear
7	nitrobenzene	0.50000	0.50102	6694	0.010	0.20479	20.00000	Linear
9	TETRYL	0.50000	0.46320	4416	0.010	-7.36019	20.00000	Linear
10	2,4,6-trinitrotoluene	0.50000	0.49432	6162	0.010	-1.13645	20.00000	Linear
11	4-AM-DNT	0.50000	0.49748	2412	0.010	-0.50434	20.00000	Linear
12	2-AM-DNT	0.50000	0.50287	3226	0.010	0.57318	20.00000	Linear
13	2,6-dinitrotoluene	0.50000	0.49963	3770	0.010	-0.07494	20.00000	Linear
14	2,4-dinitrotoluene	0.50000	0.49912	6946	0.010	-0.17576	20.00000	Linear
15	2-nitrotoluene	0.50000	0.49785	2640	0.010	-0.43021	20.00000	Linear
16	4-nitrotoluene	0.50000	0.52845	2142	0.010	5.68982	20.00000	Linear
17	3-nitrotoluene	0.50000	0.48716	2550	0.010	-2.56797	20.00000	Linear
2	1,2-dinitrobenzene	0.50000	0.46573	4948	0.010	-6.85476	20.00000	Linear

*** = Compound out of QC criteria**

Data File: HLC10222.D
Report Date: 30-Mar-2018 12:46

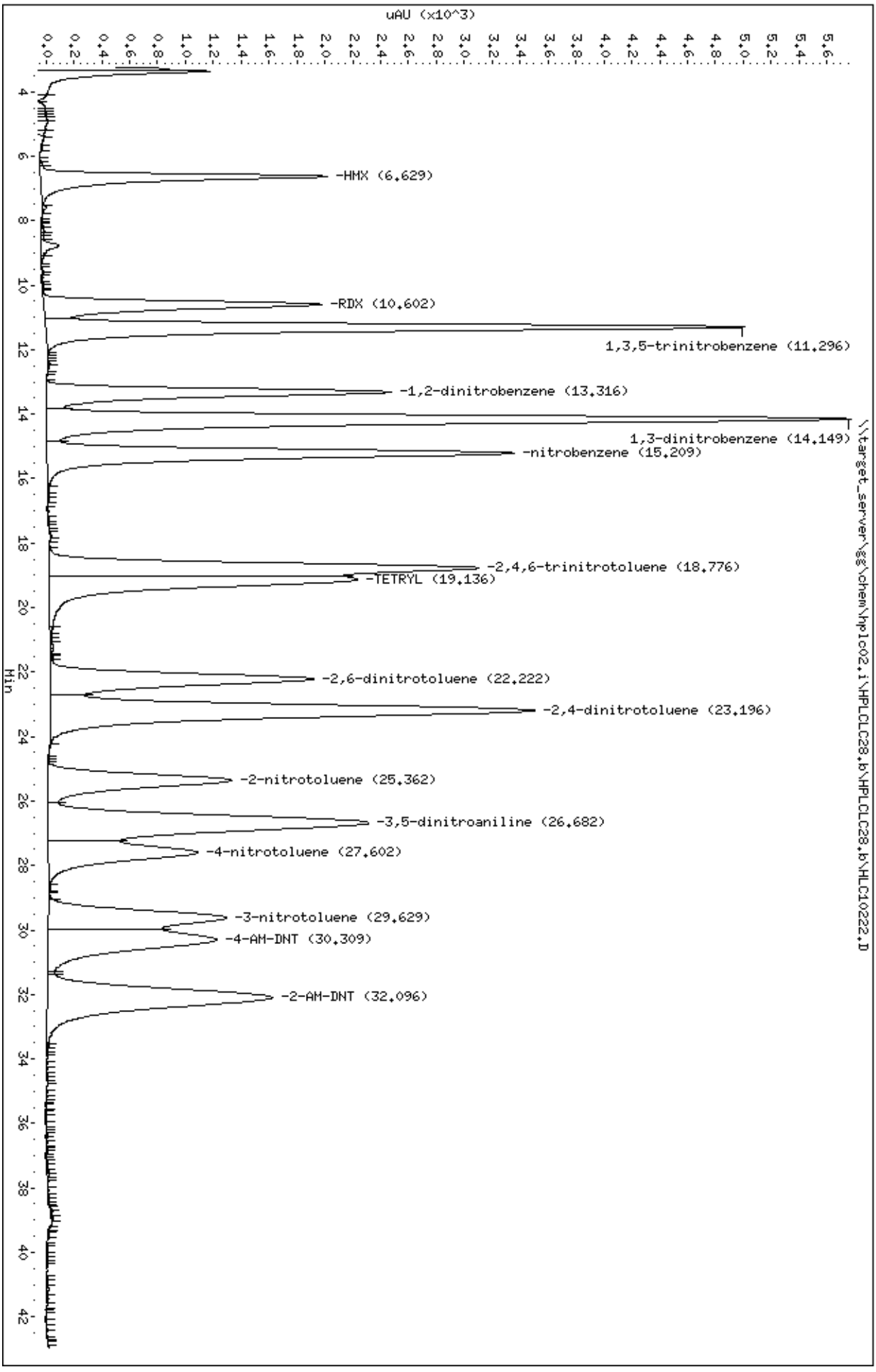
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10222.D
Lab Smp Id: WG225143-30
Inj Date : 29-MAR-2018 03:58
Operator : AC   Inst ID: hplc02.i
Smp Info : WG225143-30,SL2133
Misc Info : WG225143,WG225028,WG210620-13,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i   Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33   Cal File: HKH10014.D
Als bottle: 48   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: CV.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1	HMX	6.629	6.639	-0.010	2058	0.25000	0.486	
4	RDX	10.602	10.606	-0.004	1992	0.25000	0.491	
5	1,3,5-trinitrobenzene	11.295	11.286	0.009	5012	0.25000	0.482	
$ 2	1,2-dinitrobenzene	13.315	13.299	0.016	2474	0.25000	0.466	
6	1,3-dinitrobenzene	14.149	14.133	0.016	5769	0.25000	0.495	
7	nitrobenzene	15.209	15.179	0.030	3347	0.25000	0.501	
10	2,4,6-trinitrotoluene	18.775	18.726	0.049	3081	0.25000	0.494	
9	TETRYL	19.135	19.086	0.049	2208	0.25000	0.463	
13	2,6-dinitrotoluene	22.222	22.159	0.063	1885	0.25000	0.500	
14	2,4-dinitrotoluene	23.195	23.133	0.062	3473	0.25000	0.499	
15	2-nitrotoluene	25.362	25.279	0.083	1320	0.25000	0.498	
52	3,5-dinitroaniline	26.682	26.666	0.016	2298	0.25000	0.525	
16	4-nitrotoluene	27.602	27.493	0.109	1071	0.25000	0.528	
17	3-nitrotoluene	29.629	29.526	0.103	1275	0.25000	0.487	
11	4-AM-DNT	30.309	30.266	0.043	1206	0.25000	0.497	
12	2-AM-DNT	32.095	32.046	0.049	1613	0.25000	0.503	


Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HLC10222.D
Date : 29-MAR-2018 03:58
Client ID:
Sample Info: WG225143-30,SL2133
Column phase: Acclaim Exp E2
Instrument: hplc02.i
Operator: AC
Column diameter: 4.60
uAU (x10^3)
Min
-HMX (6.629)
-RDX (10.602)
1,3,5-trinitrobenzene (11.296)
-1,2-dinitrobenzene (13.316)
1,3-dinitrobenzene (14.149)
-nitrobenzene (15.209)
-2,4,6-trinitrotoluene (18.776)
-TETRYL (19.136)
-2,6-dinitrotoluene (22.222)
-2,4-dinitrotoluene (23.196)
-2-nitrotoluene (25.362)
-3,5-dinitroaniline (26.682)
-4-nitrotoluene (27.602)
-3-nitrotoluene (29.629)
-4-AM-DNT (30.309)
-2-AM-DNT (32.096)
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Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225027-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10039.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	50	ug/Kgdrywt	1	100	100	8.6	50.
RDX	U	50	ug/Kgdrywt	1	100	100	6.8	50.
1,3,5-Trinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
1,3-Dinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.2	50.
Tetryl	U	50	ug/Kgdrywt	1	100	100	5.4	50.
Nitrobenzene	U	50	ug/Kgdrywt	1	100	100	22.	50.
2,4,6-Trinitrotoluene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
2-Am-DNT	U	50	ug/Kgdrywt	1	100	100	21.	50.
4-Am-DNT	U	50	ug/Kgdrywt	1	100	100	17.	50.
2,6-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
2,4-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	15.	50.
2-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	12.	50.
3-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	7.9	50.
4-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
Nitroglycerin	U	400	ug/Kgdrywt	1	800	800	120	400
PETN	U	400	ug/Kgdrywt	1	800	800	110	400
1,2-Dinitrobenzene		90.4	%					

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REISSUE

Katahdin Analytical Services 2000331

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10039.D
Report Date: 30-Mar-2018 11:34

Katahdin Analytical Services

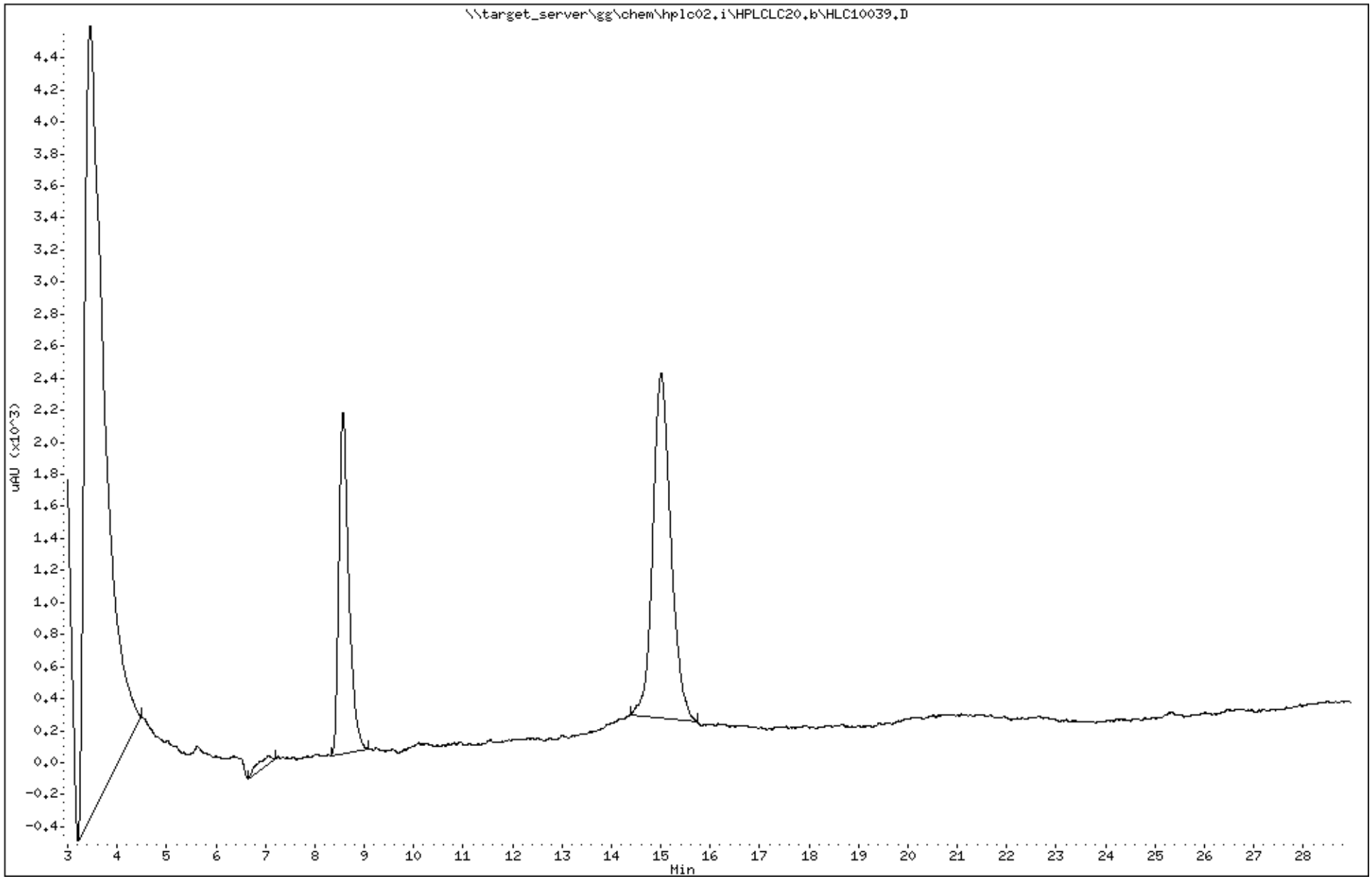
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10039.D
Lab Smp Id: WG225027-1 Client Smp ID: WG225027-Blank
Inj Date : 20-MAR-2018 19:09
Operator : AC Inst ID: hplc02.i
Smp Info : WG225027-1,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 16 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10039.D
Date : 20-MAR-2018 19:09
Client ID: WG225027-Blank
Instrument: hplc02.i
Sample Info: WG225027-1,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000333

REISSUE

Data File: HLC10039.D
Report Date: 30-Mar-2018 11:37

Katahdin Analytical Services

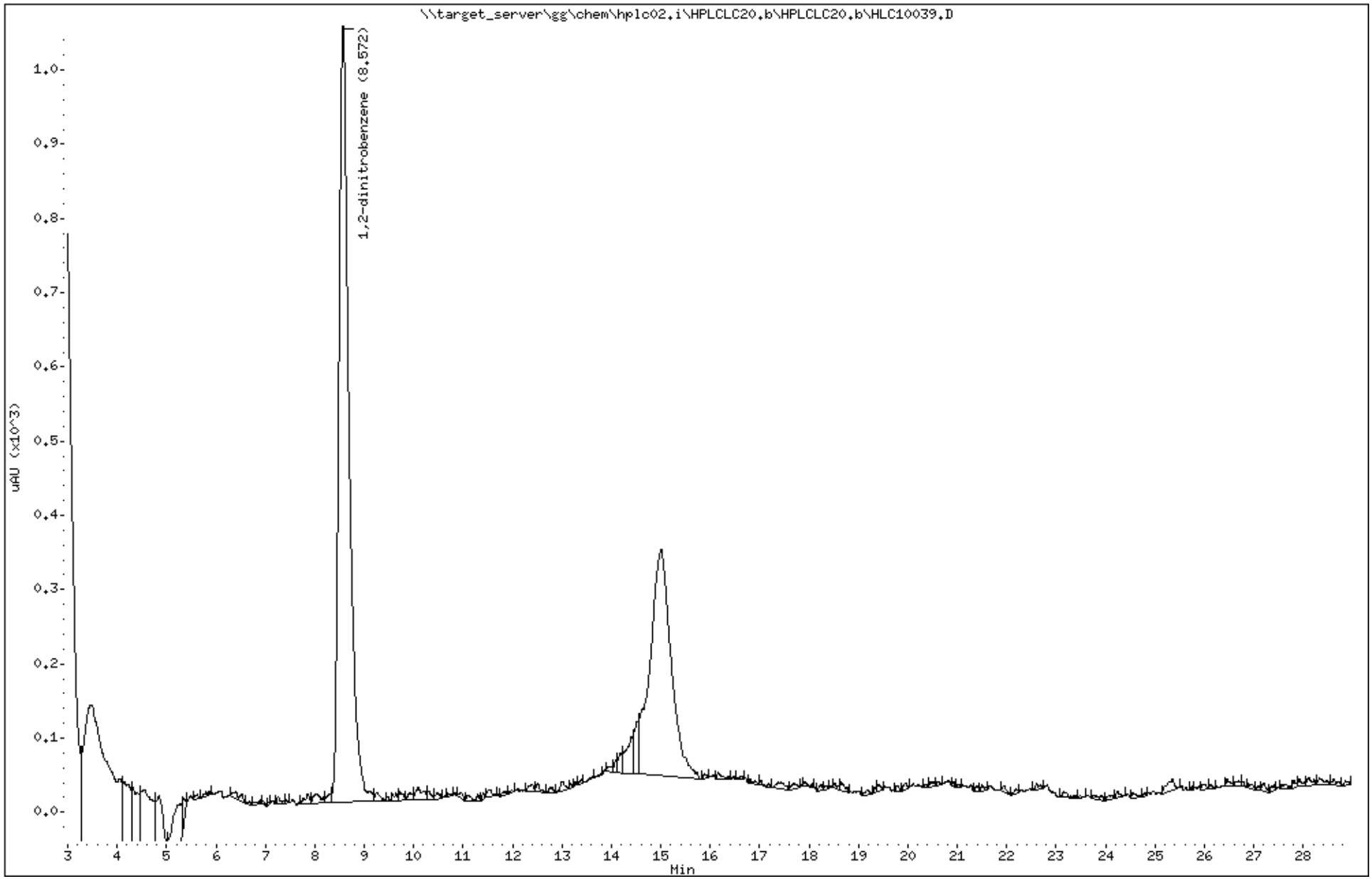
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10039.D
Lab Smp Id: WG225027-1 Client Smp ID: WG225027-Blank
Inj Date : 20-MAR-2018 19:09
Operator : AC Inst ID: hplc02.i
Smp Info : WG225027-1,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 16 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	
Compounds	RT	EXP RT	DLT RT	RESPONSE				REVIEW CODE
$ 2 1,2-dinitrobenzene	8.572	8.575	-0.003	1046		0.22604	452	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10039.D
Date : 20-MAR-2018 19:09
Client ID: WG225027-Blank
Instrument: hplc02.i
Sample Info: WG225027-1,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000335

REISSUE

Data File: HLC10153.D
Report Date: 30-Mar-2018 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10153.D
Lab Smp Id: WG225027-1C Client Smp ID: WG225027-Blank
Inj Date : 23-MAR-2018 16:52
Operator : AC Inst ID: hplc02.i
Smp Info : WG225027-1C,SL2133
Misc Info : WG225143,WG225027,WG210620-13,SL2133-1
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 13:45 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 30 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

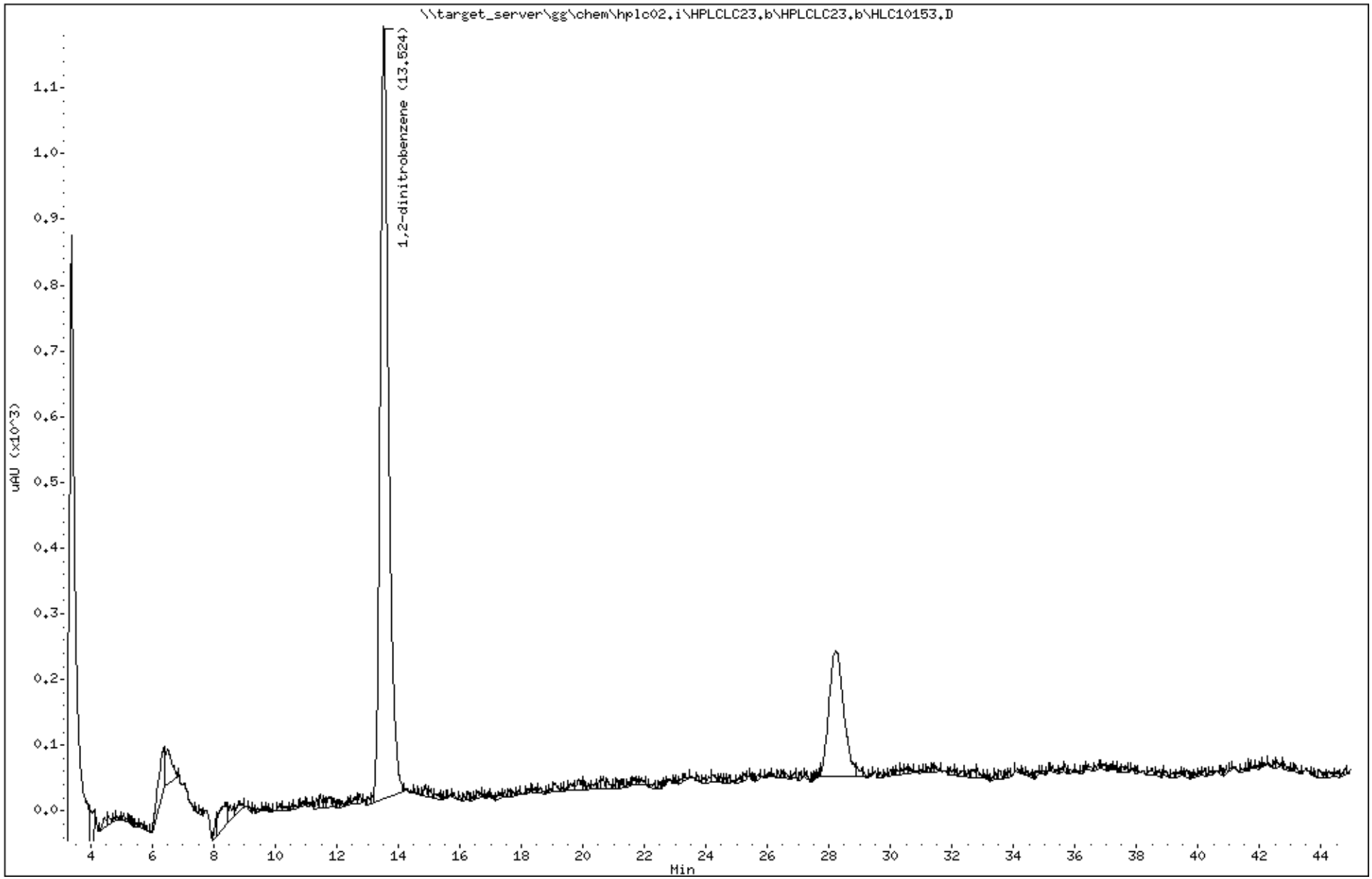
						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	
Compounds	RT	EXP RT	DLT RT	RESPONSE				REVIEW CODE
$ 2 1,2-dinitrobenzene	13.524	13.504	0.020	1176		0.22019	440	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10153.D
Date : 23-MAR-2018 16:52
Client ID: WG225027-Blank
Sample Info: WG225027-1C,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000337
REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225094-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10044.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		96.3	%					

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REISSUE

Katahdin Analytical Services 2000338

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10044.D
Report Date: 30-Mar-2018 11:34

Katahdin Analytical Services

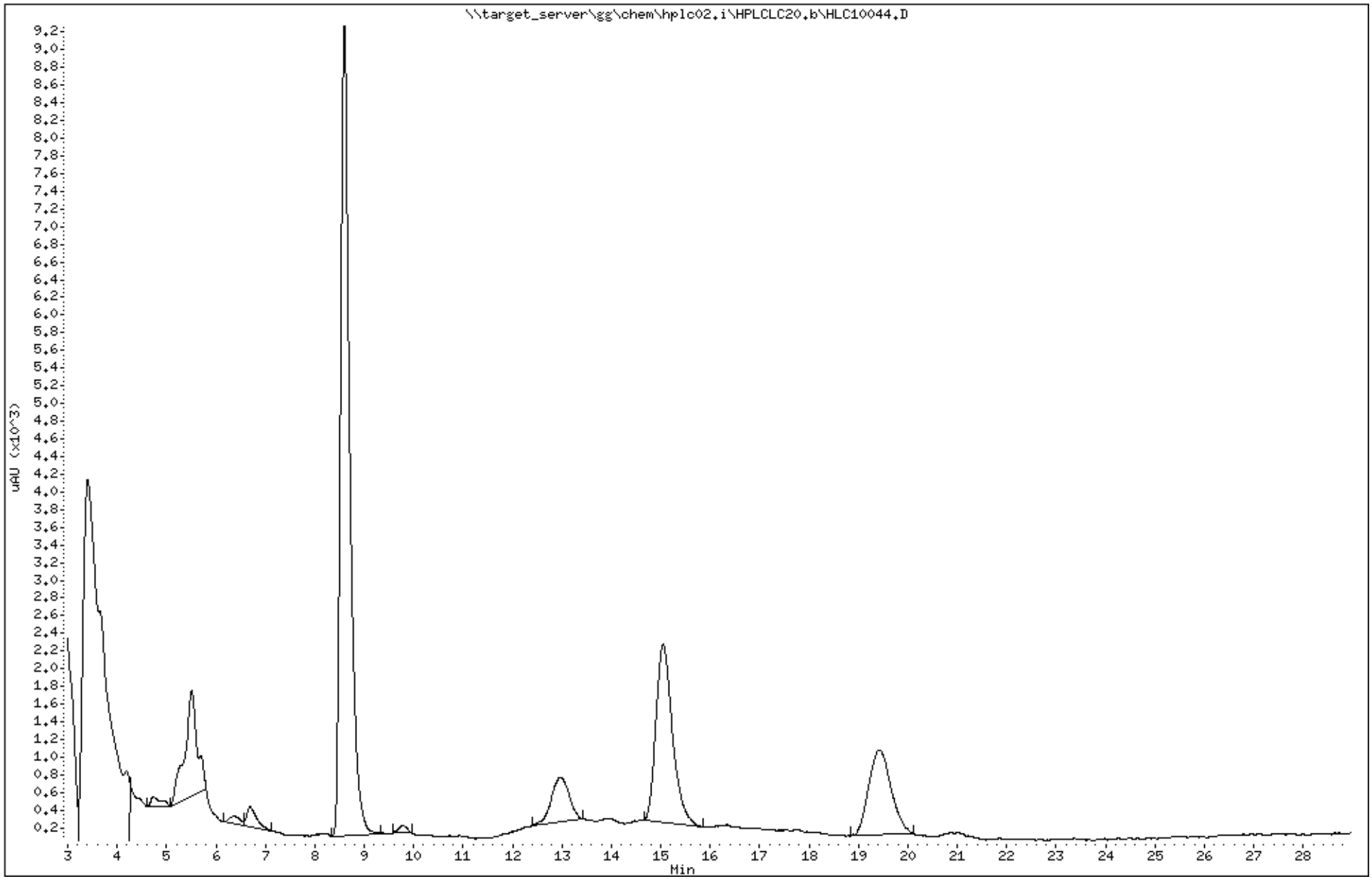
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10044.D
Lab Smp Id: WG225094-1 Client Smp ID: WG225094-Blank
Inj Date : 20-MAR-2018 21:47
Operator : AC Inst ID: hplc02.i
Smp Info : WG225094-1,SL2133
Misc Info : WG225143,WG225094,WG225143-5,SL2133-20
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 21 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10044.D
Date : 20-MAR-2018 21:47
Client ID: WG225094-Blank
Instrument: hplc02.i
Sample Info: WG225094-1,SL2133
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000340

REISSUE

Data File: HLC10044.D
Report Date: 30-Mar-2018 11:37

Katahdin Analytical Services

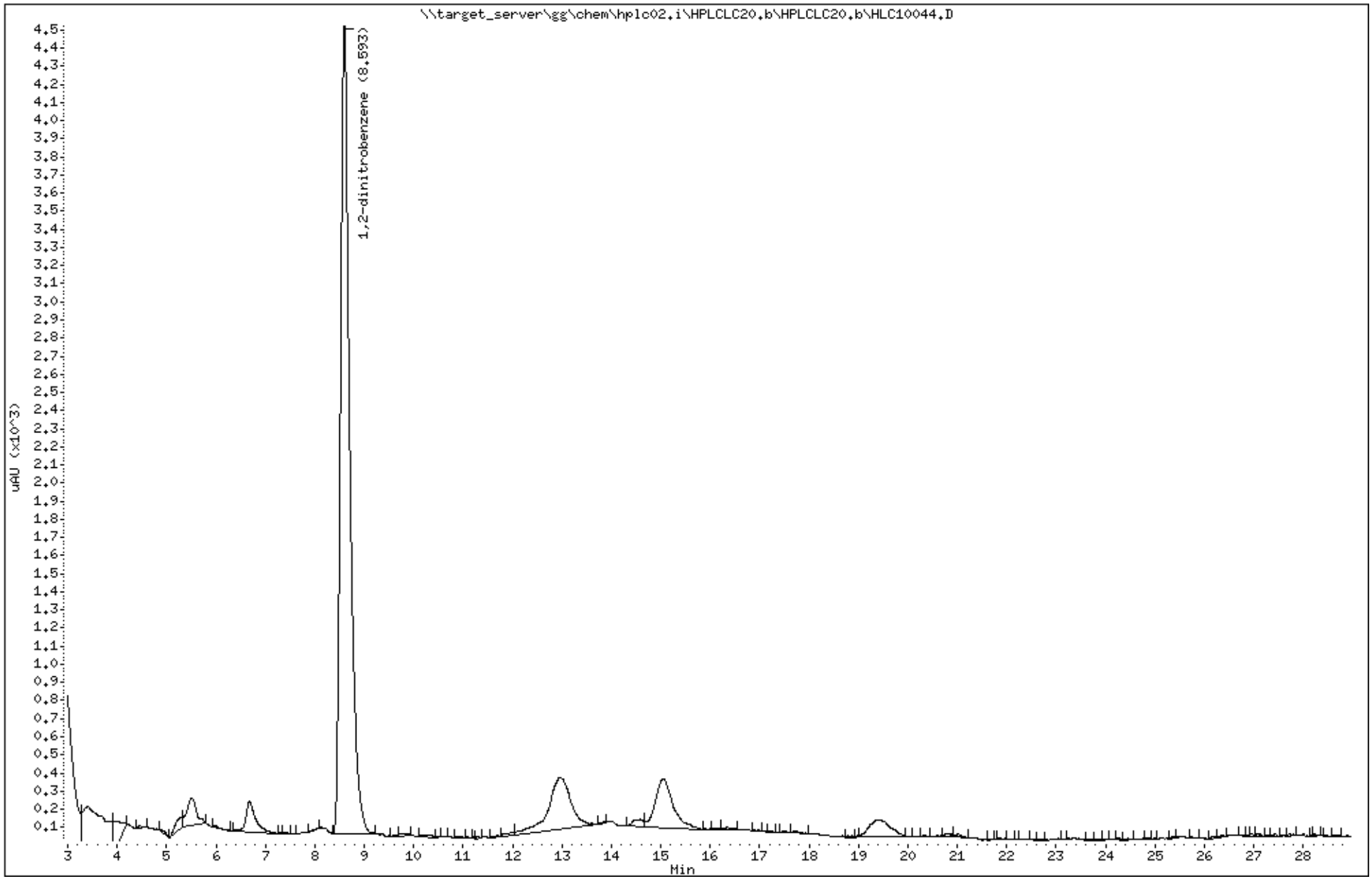
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10044.D
Lab Smp Id: WG225094-1 Client Smp ID: WG225094-Blank
Inj Date : 20-MAR-2018 21:47
Operator : AC Inst ID: hplc02.i
Smp Info : WG225094-1,SL2133
Misc Info : WG225143,WG225094,WG225143-5,SL2133-20
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 21 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.593	8.575	0.018	4455	0.96274	9.63	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10044.D
Date : 20-MAR-2018 21:47
Client ID: WG225094-Blank
Instrument: hplc02.i
Sample Info: WG225094-1,SL2133
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000342
REISSUE

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225028-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10082.D

Sample Date:
Received Date:
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 30-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	50	ug/Kgdrywt	1	100	100	8.6	50.
RDX	U	50	ug/Kgdrywt	1	100	100	6.8	50.
1,3,5-Trinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
1,3-Dinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.2	50.
Tetryl	U	50	ug/Kgdrywt	1	100	100	5.4	50.
Nitrobenzene	U	50	ug/Kgdrywt	1	100	100	22.	50.
2,4,6-Trinitrotoluene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
2-Am-DNT	U	50	ug/Kgdrywt	1	100	100	21.	50.
4-Am-DNT	U	50	ug/Kgdrywt	1	100	100	17.	50.
2,6-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
2,4-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	15.	50.
2-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	12.	50.
3-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	7.9	50.
4-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
Nitroglycerin	U	400	ug/Kgdrywt	1	800	800	120	400
PETN	U	400	ug/Kgdrywt	1	800	800	110	400
1,2-Dinitrobenzene		94.8	%					

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REISSUE

Katahdin Analytical Services 2000343

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10082.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

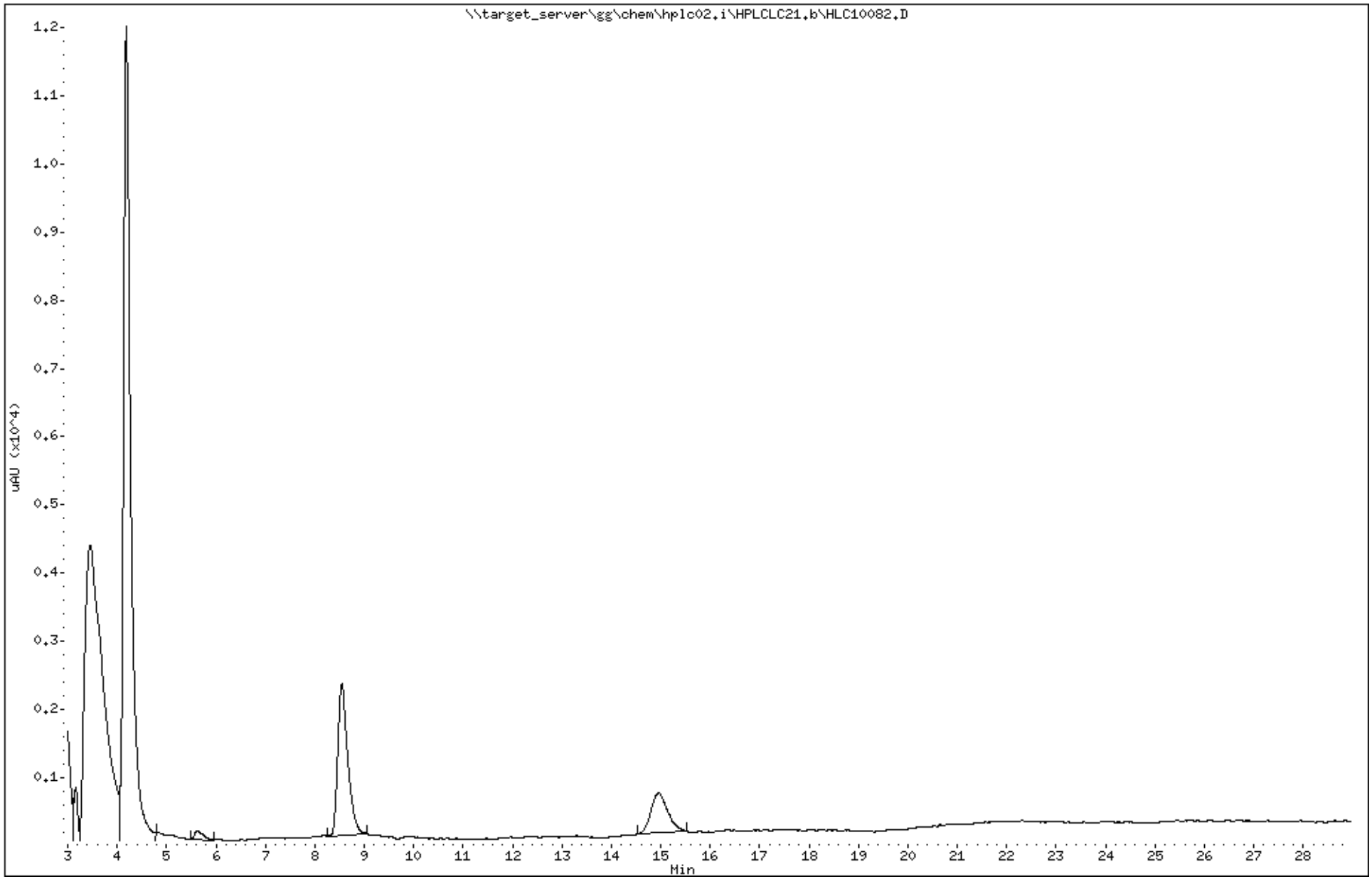
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10082.D
Lab Smp Id: WG225028-1 Client Smp ID: WG225028-Blank
Inj Date : 21-MAR-2018 19:10
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-1,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 59 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10082.D
Date : 21-MAR-2018 19:10
Client ID: WG225028-Blank
Instrument: hplc02.i
Sample Info: WG225028-1,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000345
REISSUE

Data File: HLC10082.D
Report Date: 30-Mar-2018 11:51

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10082.D
Lab Smp Id: WG225028-1 Client Smp ID: WG225028-Blank
Inj Date : 21-MAR-2018 19:10
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-1,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 59 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

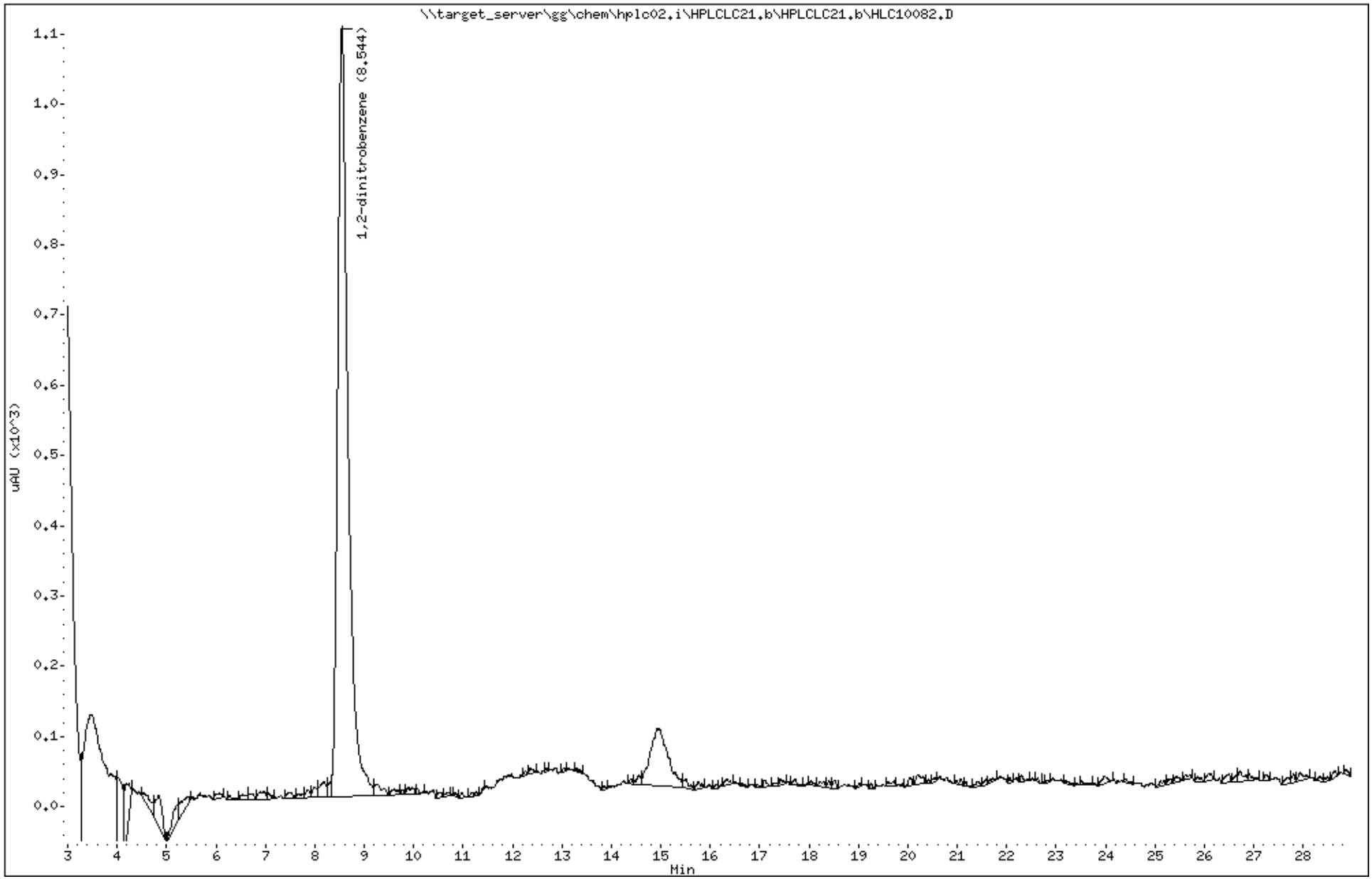
Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	
Compounds	RT	EXP RT	DLT RT	RESPONSE				REVIEW CODE
$ 2 1,2-dinitrobenzene	8.544	8.549	-0.005	1096		0.23685	474	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10082.D
Date : 21-MAR-2018 19:10
Client ID: WG225028-Blank
Sample Info: WG225028-1,SL2133
Column phase: Acclaim Exp E1

Instrument: hplc02.i
Operator: AC
Column diameter: 4.60



Katahdin Analytical Services 2000347
REISSUE

Data File: HLC10201.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

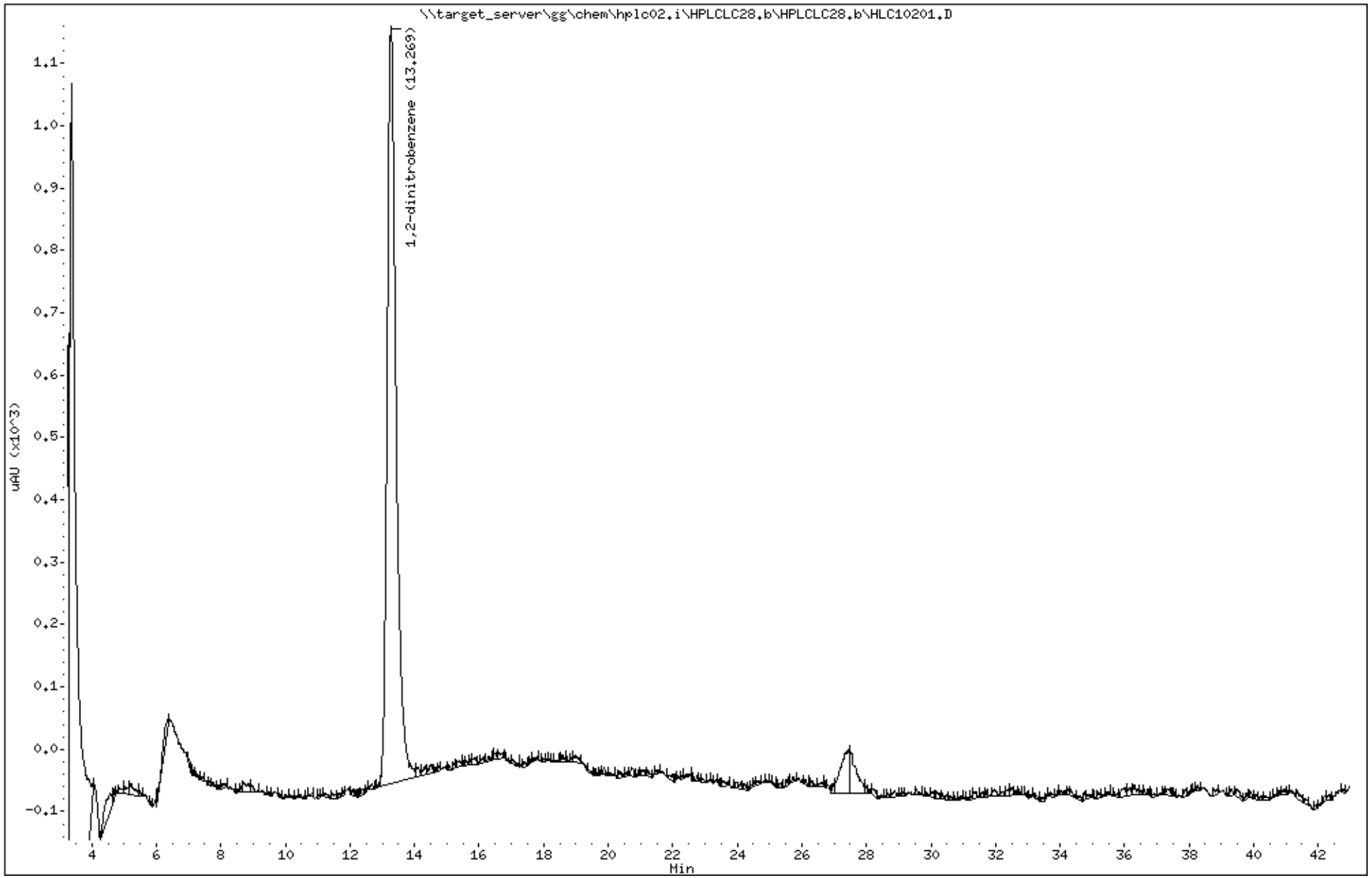
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10201.D
Lab Smp Id: WG225028-1C Client Smp ID: WG225028-Blank
Inj Date : 28-MAR-2018 11:28
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-1C,SL2133
Misc Info : WG225143,WG225028,WG210620-13,SL2133-5
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 27 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	
Compounds	RT	EXP RT	DLT RT	RESPONSE				REVIEW CODE
$ 2 1,2-dinitrobenzene	13.268	13.299	-0.031	1215		0.22757	455	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10201.D
Date : 28-MAR-2018 11:28
Client ID: WG225028-Blank
Instrument: hplc02.i
Sample Info: WG225028-1C,SL2133
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000349

REISSUE

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client:
Lab ID: WG225426-1
Client ID: Method Blank Sample
Project:
SDG: SL2133
Lab File ID: HLC10176.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: DP/AC
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225426

Analysis Date: 27-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 20-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	50	ug/Kgdrywt	1	100	100	8.6	50.
RDX	U	50	ug/Kgdrywt	1	100	100	6.8	50.
1,3,5-Trinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
1,3-Dinitrobenzene	U	50	ug/Kgdrywt	1	100	100	6.2	50.
Tetryl	U	50	ug/Kgdrywt	1	100	100	5.4	50.
Nitrobenzene	U	50	ug/Kgdrywt	1	100	100	22.	50.
2,4,6-Trinitrotoluene	U	50	ug/Kgdrywt	1	100	100	6.7	50.
2-Am-DNT	U	50	ug/Kgdrywt	1	100	100	21.	50.
4-Am-DNT	U	50	ug/Kgdrywt	1	100	100	17.	50.
2,6-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
2,4-Dinitrotoluene	U	50	ug/Kgdrywt	1	100	100	15.	50.
2-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	12.	50.
3-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	7.9	50.
4-Nitrotoluene	U	50	ug/Kgdrywt	1	100	100	27.	50.
Nitroglycerin	U	400	ug/Kgdrywt	1	800	800	120	400
PETN	U	400	ug/Kgdrywt	1	800	800	110	400
1,2-Dinitrobenzene		87.4	%					

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REISSUE

Katahdin Analytical Services 2000350

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10176.D
Report Date: 30-Mar-2018 12:33

Katahdin Analytical Services

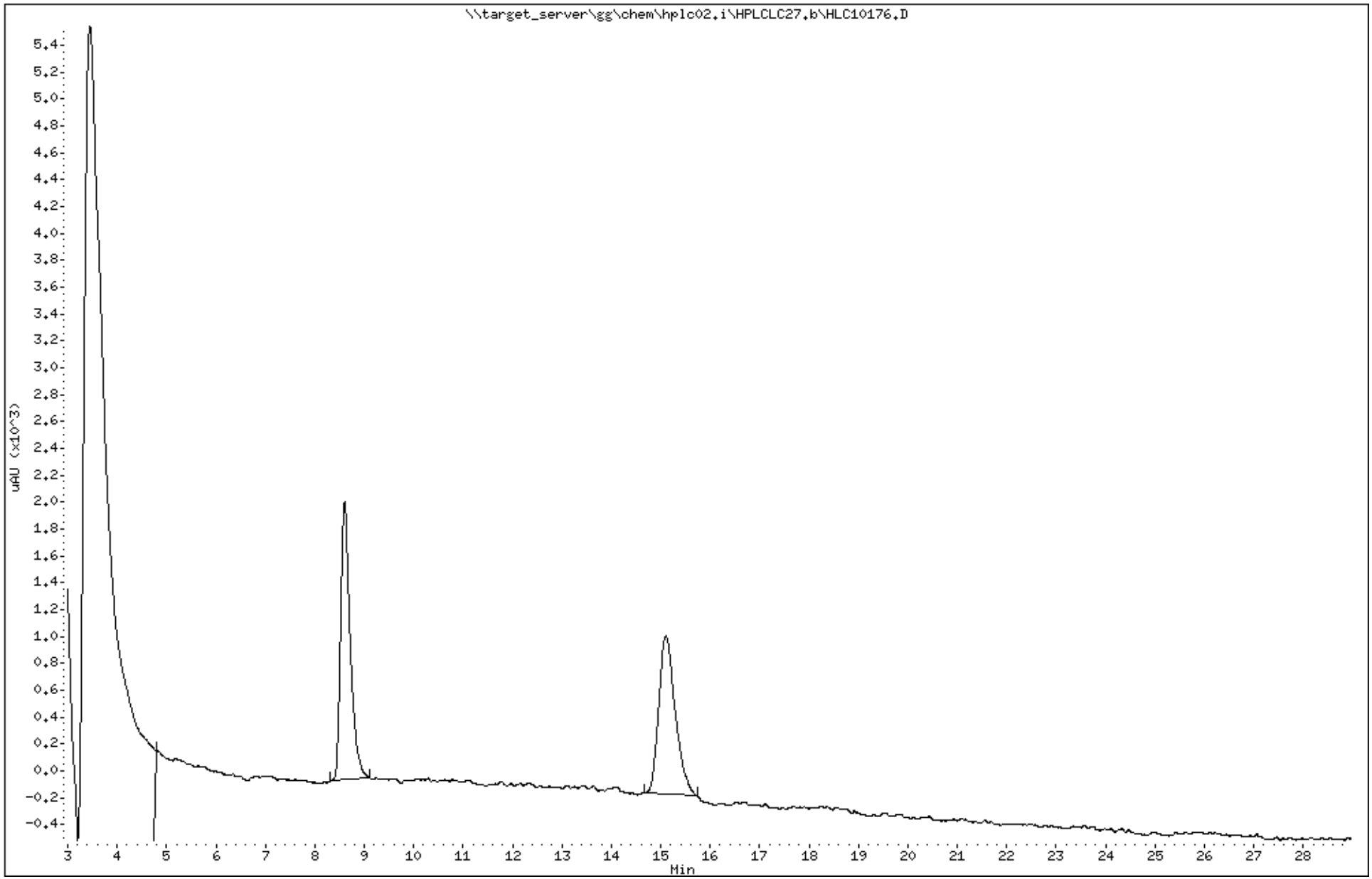
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10176.D
Lab Smp Id: WG225426-1 Client Smp ID: WG225426-Blank
Inj Date : 27-MAR-2018 10:03
Operator : AC Inst ID: hplc02.i
Smp Info : WG225426-1,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m
Meth Date : 29-Mar-2018 00:32 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 2 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10176.D
Date : 27-MAR-2018 10:03
Client ID: WG225426-Blank
Instrument: hplc02.i
Sample Info: WG225426-1,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000352

REISSUE

Data File: HLC10176.D
Report Date: 30-Mar-2018 12:38

Katahdin Analytical Services

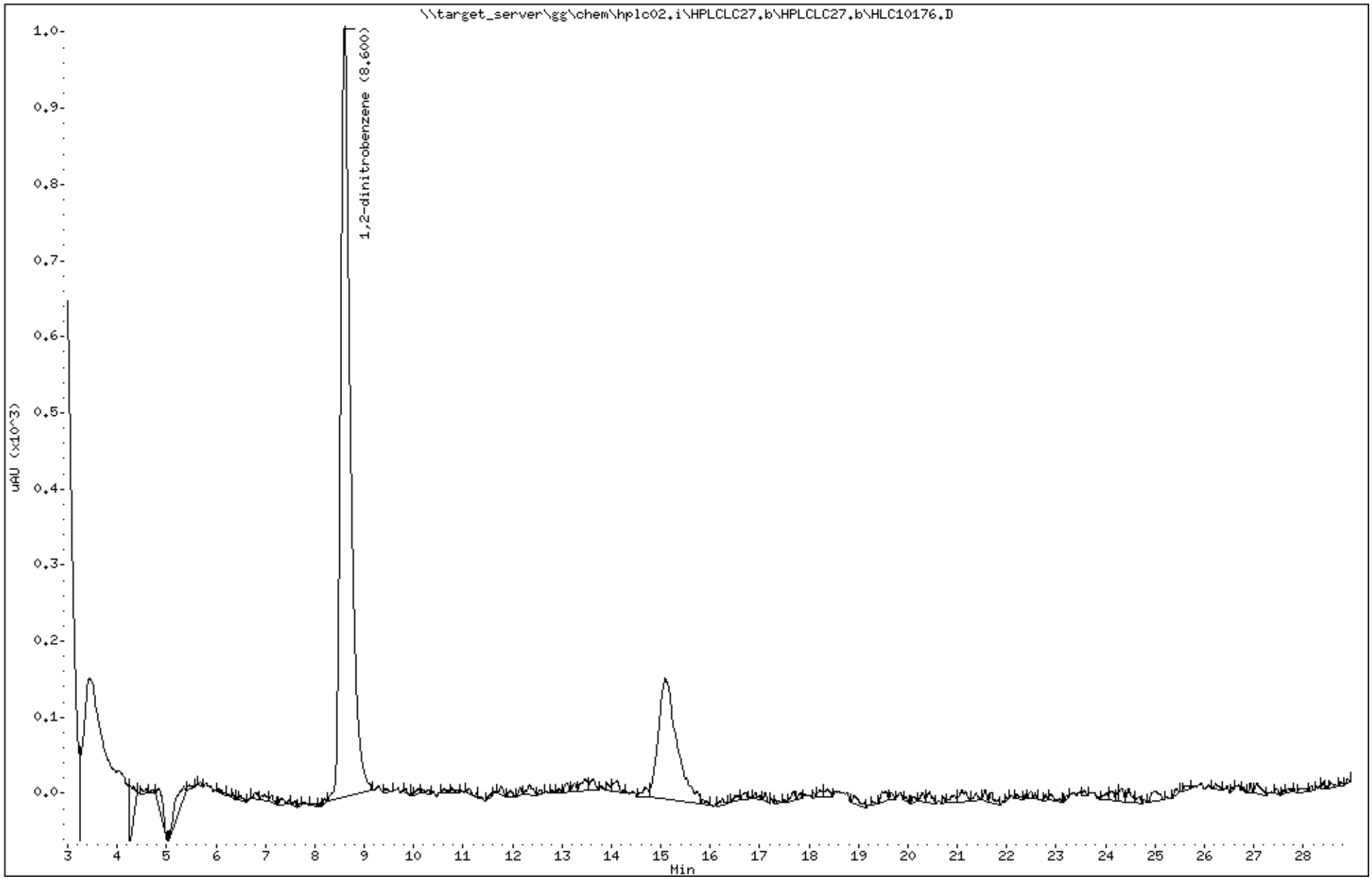
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10176.D
Lab Smp Id: WG225426-1 Client Smp ID: WG225426-Blank
Inj Date : 27-MAR-2018 10:03
Operator : AC Inst ID: hplc02.i
Smp Info : WG225426-1,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m\EXPB05A.m
Meth Date : 28-Mar-2018 10:48 acronin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 2 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kgdrywt)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.600	8.621	-0.021	1012	0.21870	437	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10176.D
Date : 27-MAR-2018 10:03
Client ID: WG225426-Blank
Instrument: hplc02.i
Sample Info: WG225426-1,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000354

REISSUE

Data File: HLC10220.D
Report Date: 30-Mar-2018 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10220.D
Lab Smp Id: WG225426-1C Client Smp ID: WG225426-Blank
Inj Date : 29-MAR-2018 02:24
Operator : AC Inst ID: hplc02.i
Smp Info : WG225426-1C,SL2133
Misc Info : WG225143,WG225426,WG210620-13,SL2133-8
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC28.b\E2016A.m\E2016A.m
Meth Date : 30-Mar-2018 05:36 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 46 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

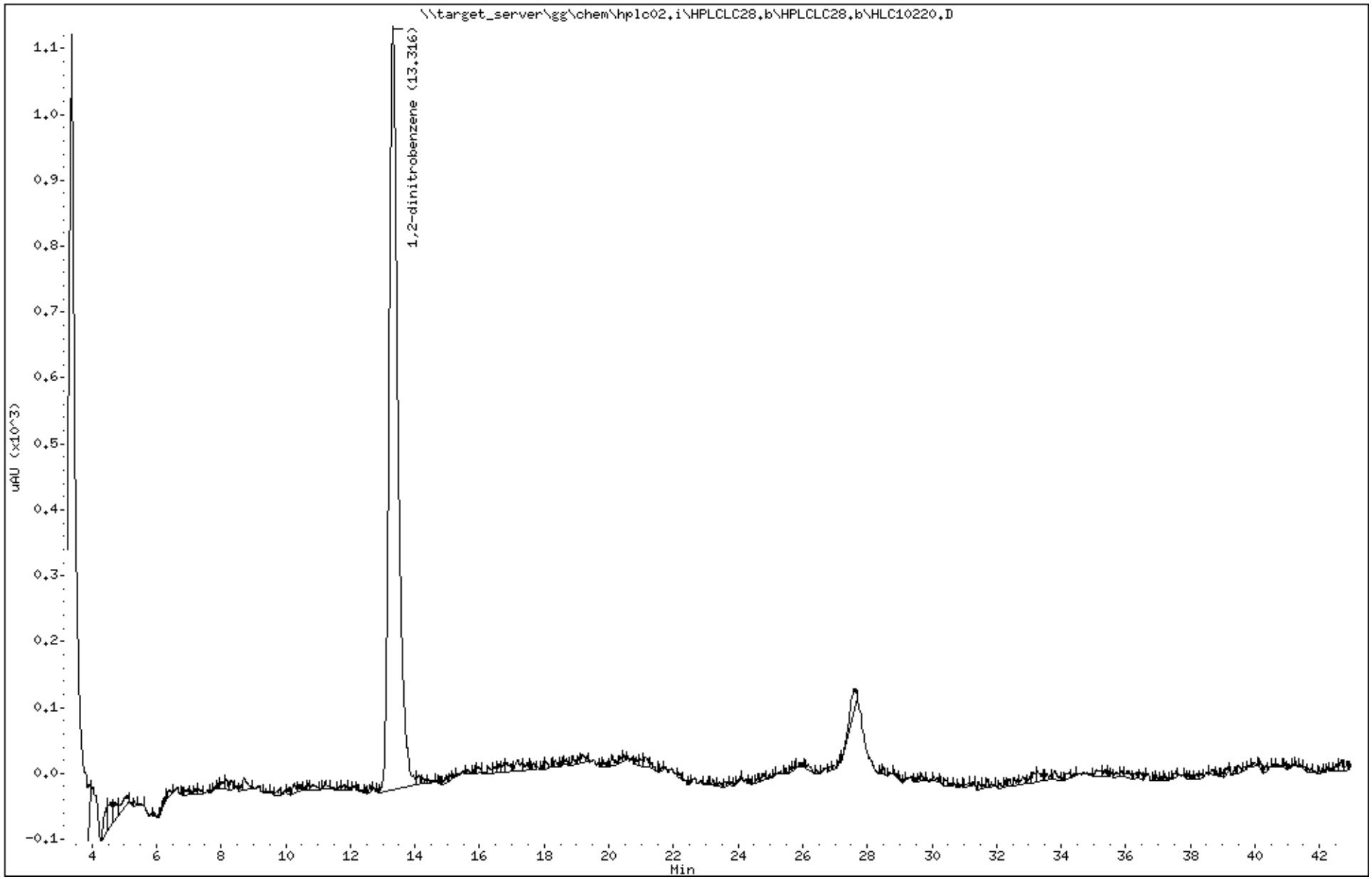
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.315	13.299	0.016	1159	0.21697	434	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC28.b\HPLCLC28.b\HLC10220.D
Date : 29-MAR-2018 02:24
Client ID: WG225426-Blank
Sample Info: WG225426-1C,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E2



Katahdin Analytical Services 2000356
REISSUE

Katahdin
ANALYTICAL SERVICES

LCS/LCSD Recovery Report

LCS ID: WG225027-2
LCSD ID: WG225027-5
Project:
SDG: SL2133
Report Date: 20-APR-18
LCS File ID: HLC10040.D

Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225027
LCSD File ID: HLC10041.D

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
HMX	1000	1030	103.	1030	103.	ug/Kgdrywt	0	20	74-125
RDX	1000	993.	99.3	984.	98.4	ug/Kgdrywt	1	20	67-129
1,3,5-Trinitrobenzene	1000	1040	104.	1050	105.	ug/Kgdrywt	1	20	80-125
1,3-Dinitrobenzene	1000	1030	103.	1030	103.	ug/Kgdrywt	0	20	73-125
Tetryl	1000	1090	109.	1120	112.	ug/Kgdrywt	3	20	68-135
Nitrobenzene	1000	1000	100.	1000	100.	ug/Kgdrywt	0	20	67-129
2,4,6-Trinitrotoluene	1000	1020	102.	1020	102.	ug/Kgdrywt	0	20	71-125
2-Am-DNT	1000	1010	101.	1010	101.	ug/Kgdrywt	0	20	71-125
4-Am-DNT	1000	1060	106.	1070	107.	ug/Kgdrywt	1	20	64-127
2,6-Dinitrotoluene	1000	1030	103.	1010	101.	ug/Kgdrywt	2	20	79-125
2,4-Dinitrotoluene	1000	1040	104.	1030	103.	ug/Kgdrywt	1	20	75-125
2-Nitrotoluene	1000	1060	106.	1050	105.	ug/Kgdrywt	1	20	70-125
3-Nitrotoluene	1000	1040	104.	1040	104.	ug/Kgdrywt	0	20	67-129
4-Nitrotoluene	1000	1090	109.	1080	108.	ug/Kgdrywt	1	20	71-125
Nitroglycerin	1000	880.	88.0	822.	82.2	ug/Kgdrywt	7	20	73-125
PETN	1000	1030	103.	1130	113.	ug/Kgdrywt	9	20	72-128
1,2-Dinitrobenzene			99.4		101.				78-125

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REISSUE

Katahdin Analytical Services 2000357

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10040.D
Report Date: 30-Mar-2018 11:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10040.D
Lab Smp Id: WG225027-2 Client Smp ID: WG225027-LCS
Inj Date : 20-MAR-2018 19:40
Operator : AC Inst ID: hplc02.i
Smp Info : WG225027-2,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 17 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kgdrywt)	
8 NITROGLYCERIN	6.988	6.997	-0.009	2425	0.43985	880(M)	M2
18 PETN	13.955	13.963	-0.008	1486	0.51672	1030	

QC Flag Legend

M - Compound response manually integrated.

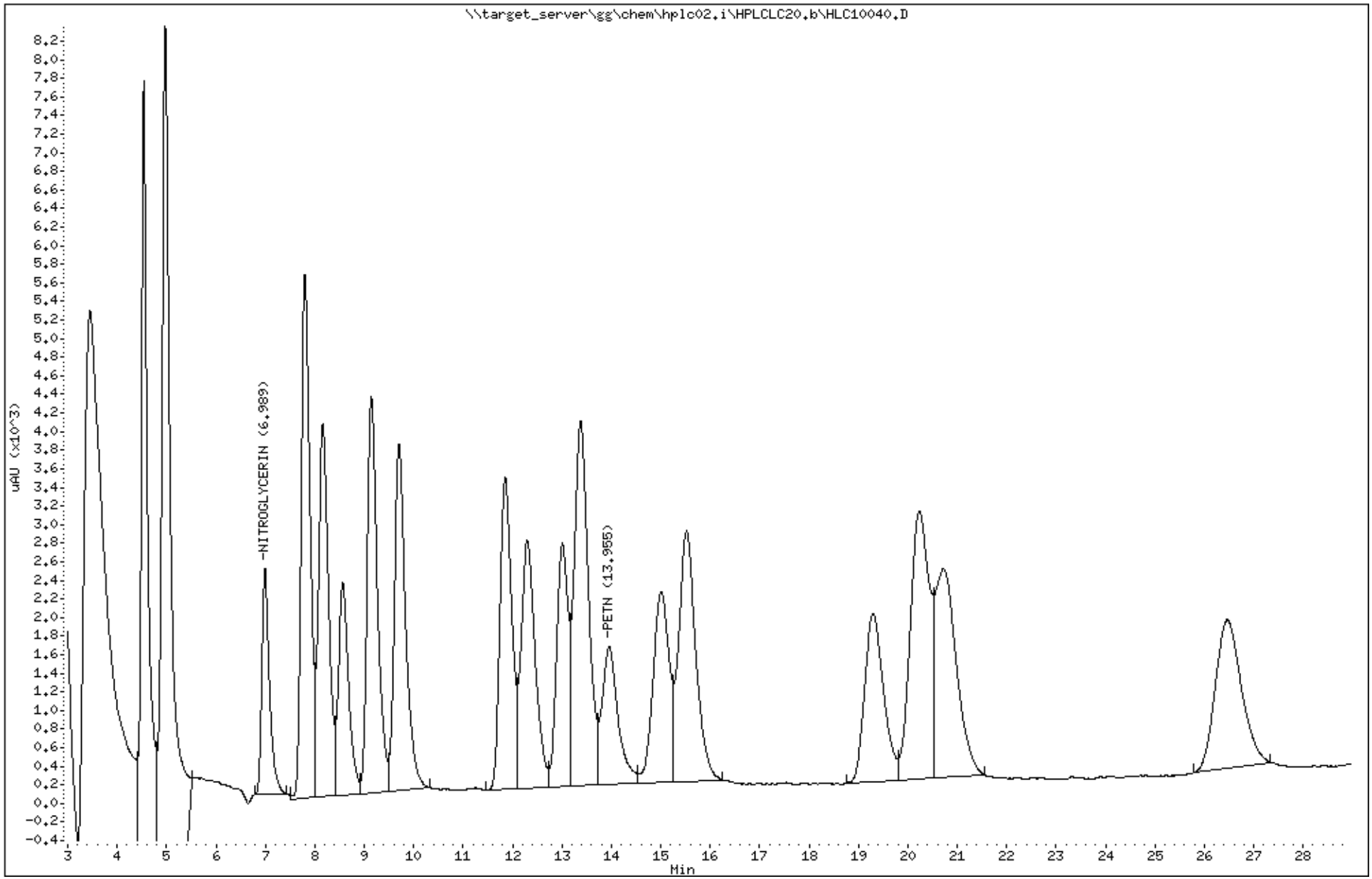
9:45 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10040.D
Date : 20-MAR-2018 19:40
Client ID: WG225027-LCS
Sample Info: WG225027-2,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000359
REISSUE

Data File: HLC10040.D
Report Date: 30-Mar-2018 11:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10040.D
Lab Smp Id: WG225027-2 Client Smp ID: WG225027-LCS
Inj Date : 20-MAR-2018 19:40
Operator : AC Inst ID: hplc02.i
Smp Info : WG225027-2,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 17 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.542	4.542	0.000	2772	0.51422	1030(M)	M4
4	RDX	4.988	4.989	-0.001	2725	0.49670	993(M)	M4
51	3,5-Dinitroaniline	7.802	7.809	-0.007	4066	0.48892	978	
7	nitrobenzene	8.162	8.175	-0.013	3446	0.50185	1000	
$ 2	1,2-dinitrobenzene	8.562	8.575	-0.013	1151	0.24873	497	
11	4-AM-DNT	9.148	9.155	-0.007	2286	0.53129	1060	
12	2-AM-DNT	9.702	9.715	-0.013	2919	0.50671	1010	
15	2-nitrotoluene	11.855	11.862	-0.007	1527	0.52845	1060	
6	1,3-dinitrobenzene	12.302	12.315	-0.013	3844	0.51641	1030	
16	4-nitrotoluene	13.008	13.022	-0.014	1275	0.54431	1090	
17	3-nitrotoluene	13.382	13.389	-0.007	1729	0.51990	1040	
13	2,6-dinitrotoluene	15.528	15.542	-0.014	1514	0.51503	1030	
14	2,4-dinitrotoluene	19.302	19.309	-0.007	2391	0.51770	1040	
5	1,3,5-trinitrobenzene	20.235	20.222	0.013	1921	0.52076	1040	
9	TETRYL	20.722	20.722	0.000	1386	0.54684	1090	
10	2,4,6-trinitrotoluene	26.468	26.469	-0.001	1288	0.50982	1020	

9:45 am, Apr 02, 2018

QC Flag Legend

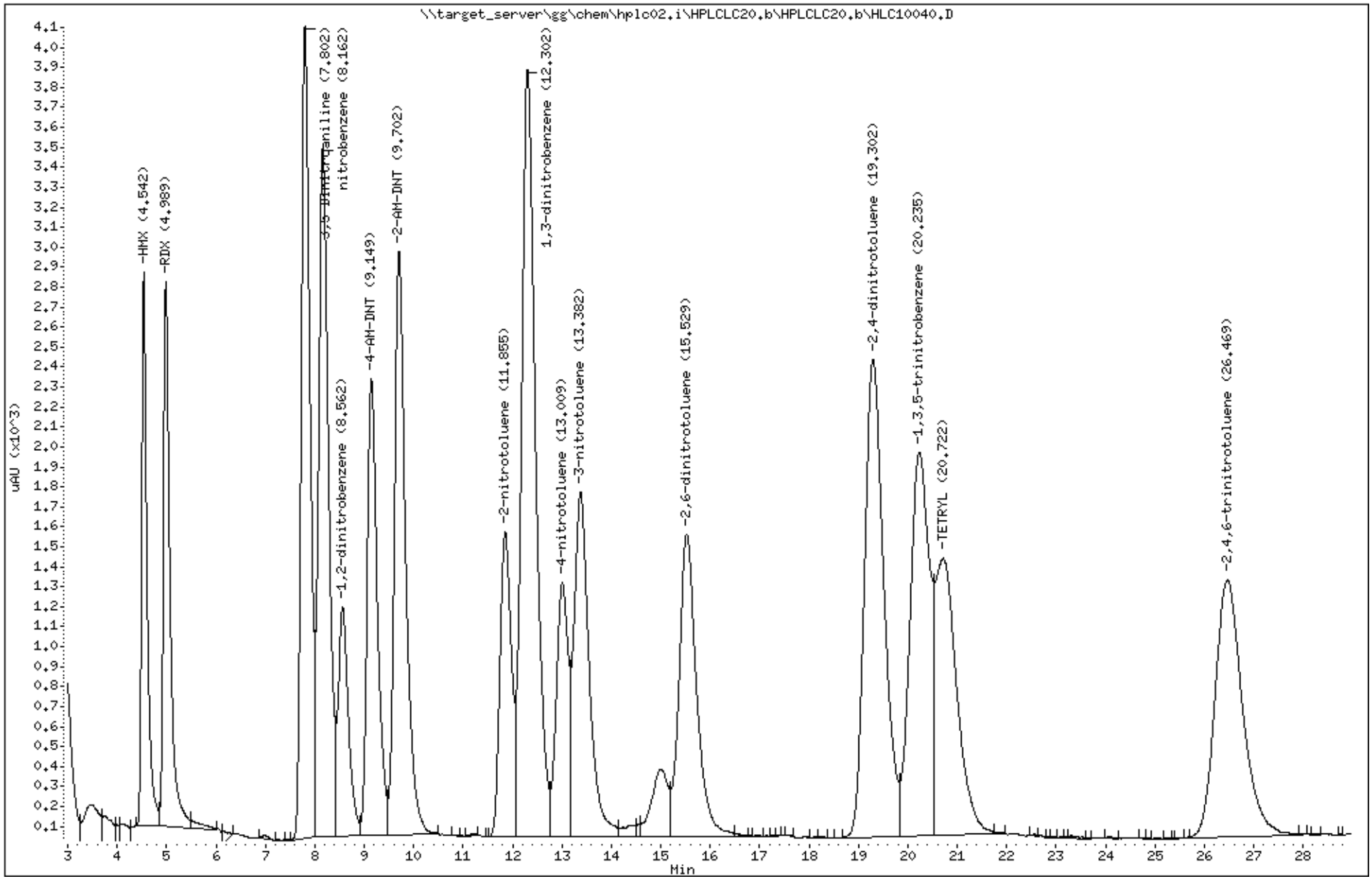
M - Compound response manually integrated.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10040.D
Date : 20-MAR-2018 19:40
Client ID: WG225027-LCS
Sample Info: WG225027-2,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000361

REISSUE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10041.D
Report Date: 30-Mar-2018 11:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10041.D
Lab Smp Id: WG225027-5 Client Smp ID: WG225027-LCSD
Inj Date : 20-MAR-2018 20:12
Operator : AC Inst ID: hplc02.i
Smp Info : WG225027-5,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 18 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kgdrywt)	
8 NITROGLYCERIN	6.985	6.997	-0.012	2265	0.41083	822(M)	M2
18 PETN	13.952	13.963	-0.011	1626	0.56540	1130	

QC Flag Legend

M - Compound response manually integrated.

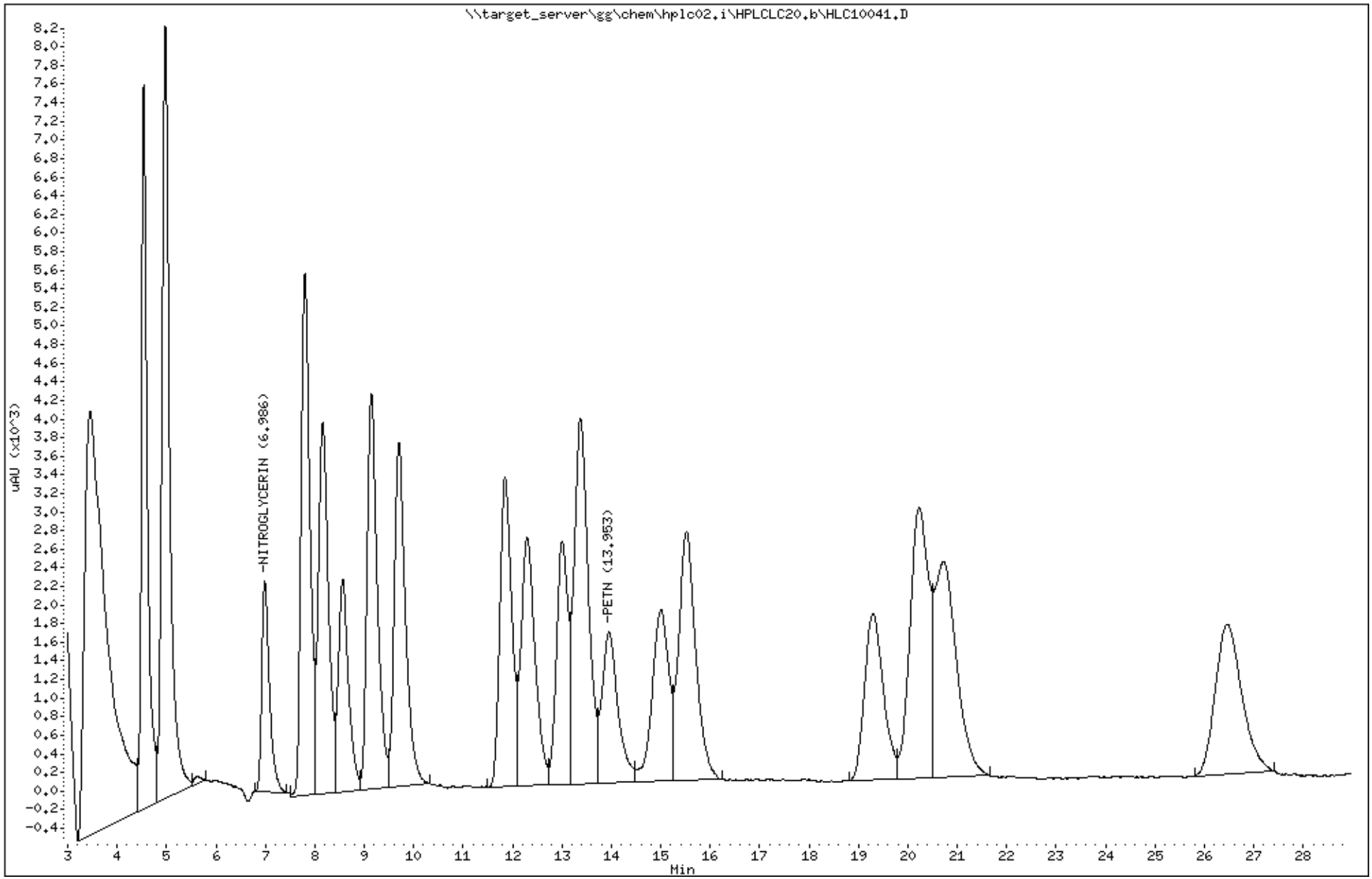
9:46 am, Apr 02, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10041.D
Date : 20-MAR-2018 20:12
Client ID: WG225027-LCSD
Sample Info: WG225027-5,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000363
REISSUE

Data File: HLC10041.D
Report Date: 30-Mar-2018 11:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10041.D
Lab Smp Id: WG225027-5 Client Smp ID: WG225027-LCSD
Inj Date : 20-MAR-2018 20:12
Operator : AC Inst ID: hplc02.i
Smp Info : WG225027-5,SL2133
Misc Info : WG225143,WG225027,WG225143-5,SL2133-1
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 18 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

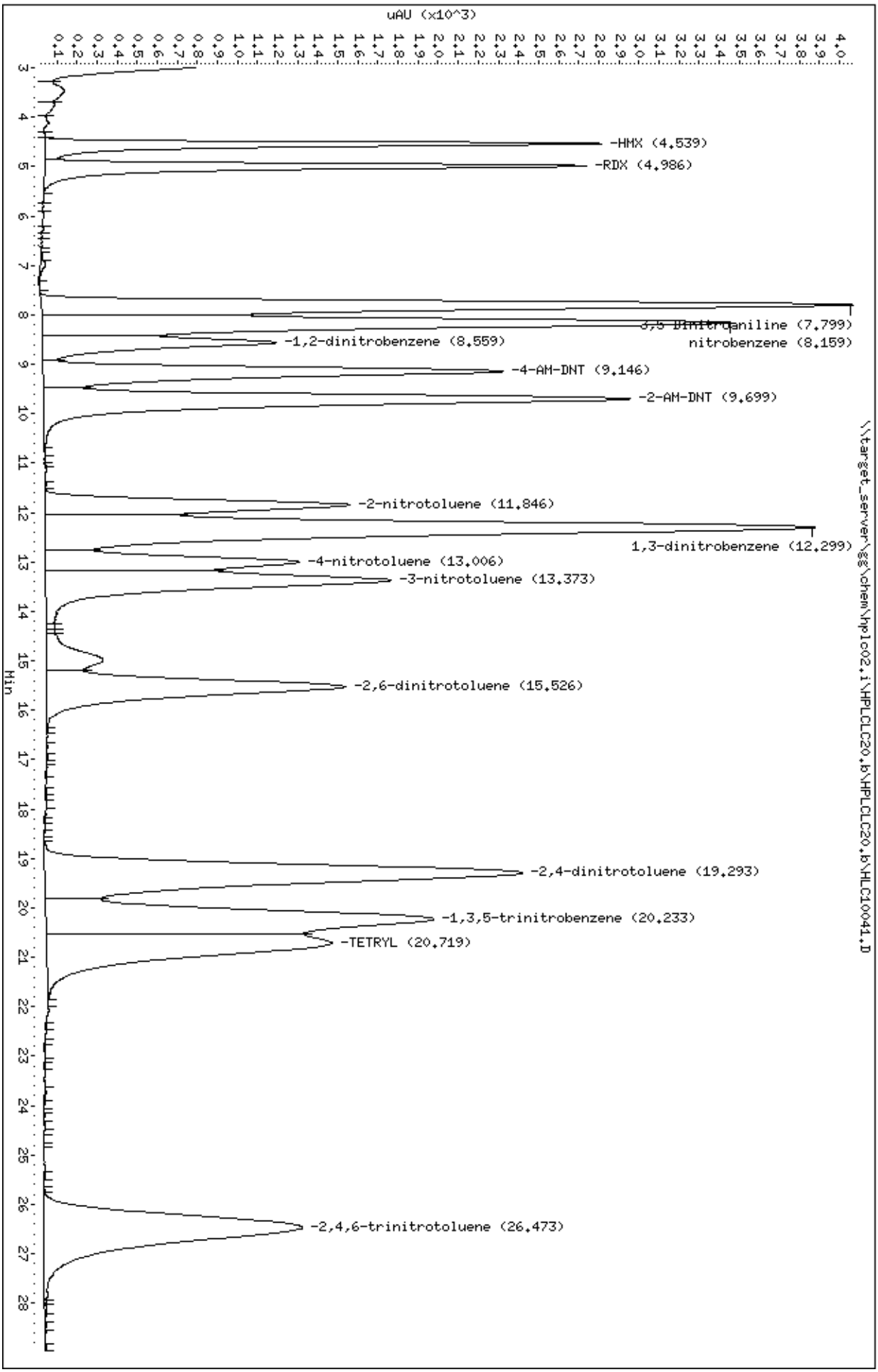
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.539	4.542	-0.003	2771	0.51404	1030(M)	M4
4	RDX	4.985	4.989	-0.004	2700	0.49220	984(M)	M4
51	3,5-Dinitroaniline	7.799	7.809	-0.010	4051	0.48712	974	
7	nitrobenzene	8.159	8.175	-0.016	3442	0.50126	1000	
$ 2	1,2-dinitrobenzene	8.559	8.575	-0.016	1166	0.25198	504	
11	4-AM-DNT	9.145	9.155	-0.010	2297	0.53385	1070	
12	2-AM-DNT	9.699	9.715	-0.016	2923	0.50740	1010	
15	2-nitrotoluene	11.845	11.862	-0.017	1520	0.52603	1050	
6	1,3-dinitrobenzene	12.299	12.315	-0.016	3835	0.51520	1030	
16	4-nitrotoluene	13.005	13.022	-0.017	1267	0.54089	1080	
17	3-nitrotoluene	13.372	13.389	-0.017	1722	0.51779	1040	
13	2,6-dinitrotoluene	15.525	15.542	-0.017	1492	0.50736	1010	
14	2,4-dinitrotoluene	19.292	19.309	-0.017	2385	0.51640	1030	
5	1,3,5-trinitrobenzene	20.232	20.222	0.010	1935	0.52455	1050	
9	TETRYL	20.719	20.722	-0.003	1424	0.56183	1120	
10	2,4,6-trinitrotoluene	26.472	26.469	0.003	1292	0.51141	1020	

AAB
9:46 am, Apr 02, 2018

QC Flag Legend

M - Compound response manually integrated.



REISSUE **Katahdin Analytical Services 2000365**

Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG225094-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: HLC10045.D

Sample Date:
Received Date:
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 30-MAR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	113.	5.00	5.66	ug/L	65-135
RDX	114.	5.00	5.71	ug/L	68-130
1,3,5-Trinitrobenzene	110.	5.00	5.51	ug/L	73-125
1,3-Dinitrobenzene	115.	5.00	5.74	ug/L	78-120
Tetryl	103.	5.00	5.16	ug/L	64-128
Nitrobenzene	115.	5.00	5.74	ug/L	65-134
2,4,6-Trinitrotoluene	109.	5.00	5.44	ug/L	71-123
4-Am-DNT	121.	5.00	6.03	ug/L	76-125
2-Am-DNT	114.	5.00	5.70	ug/L	79-120
2,6-Dinitrotoluene	111.	5.00	5.54	ug/L	77-127
2,4-Dinitrotoluene	116.	5.00	5.79	ug/L	78-120
2-Nitrotoluene	117.	5.00	5.85	ug/L	70-127
4-Nitrotoluene	120.	5.00	6.01	ug/L	71-127
3-Nitrotoluene	111.	5.00	5.53	ug/L	73-125
Nitroglycerin	111.	20.0	22.2	ug/L	74-127
PETN	103.	20.0	20.6	ug/L	73-127
1,2-Dinitrobenzene	101.				83-120

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REISSUE

Katahdin Analytical Services 2000366

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10045.D
Report Date: 30-Mar-2018 11:34

Katahdin Analytical Services

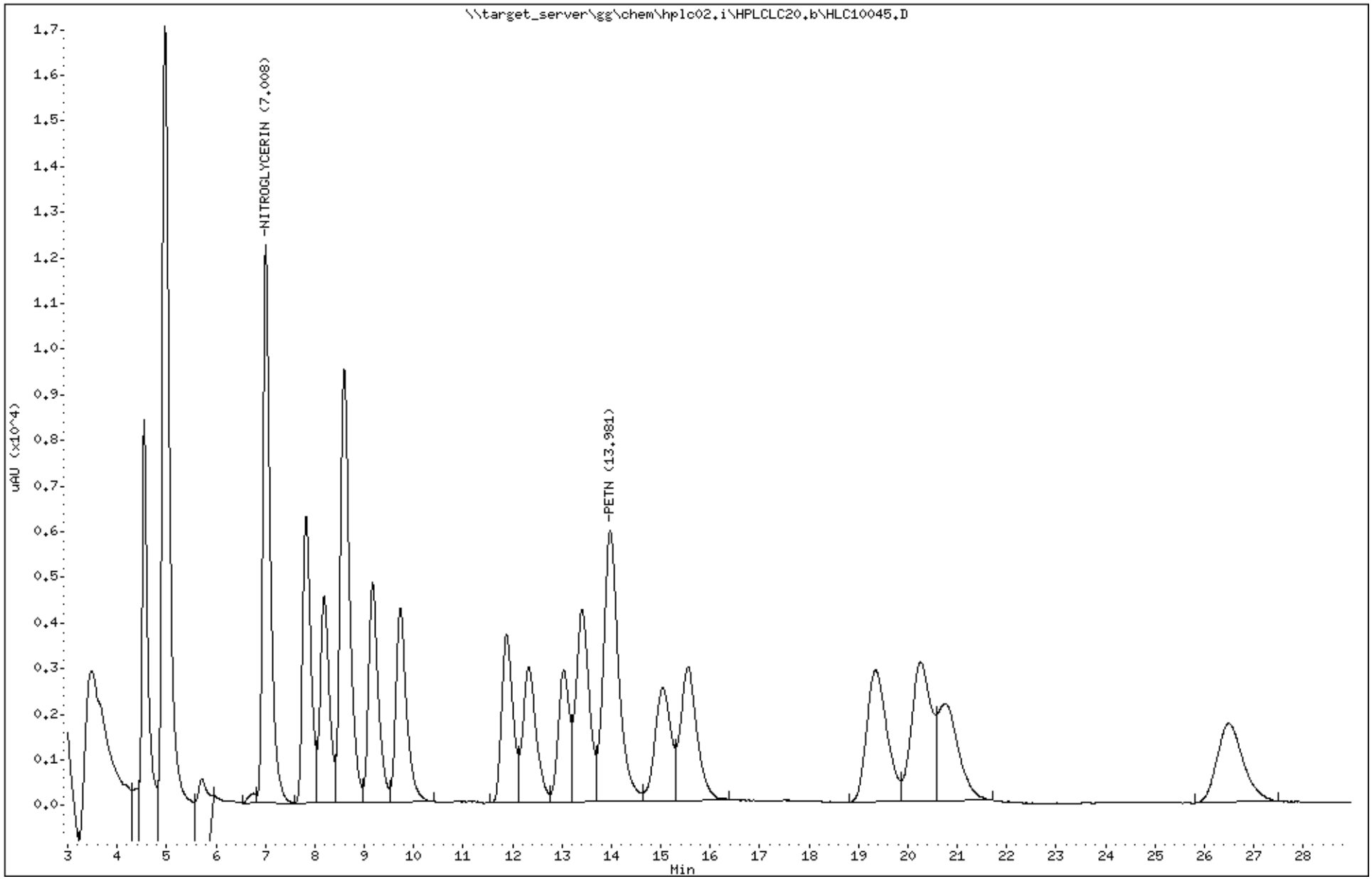
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10045.D
Lab Smp Id: WG225094-2 Client Smp ID: WG225094-LCS
Inj Date : 20-MAR-2018 22:19
Operator : AC Inst ID: hplc02.i
Smp Info : WG225094-2,SL2133
Misc Info : WG225143,WG225094,WG225143-5,SL2133-20
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 22 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
8 NITROGLYCERIN	7.007	6.997	0.010	12218	2.21614	22.2
18 PETN	13.981	13.963	0.018	5923	2.05957	20.6

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10045.D
Date : 20-MAR-2018 22:19
Client ID: WG225094-LCS
Instrument: hplc02.i
Sample Info: WG225094-2,SL2133
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000368
REISSUE

Data File: HLC10045.D
Report Date: 30-Mar-2018 11:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10045.D
Lab Smp Id: WG225094-2 Client Smp ID: WG225094-LCS
Inj Date : 20-MAR-2018 22:19
Operator : AC Inst ID: hplc02.i
Smp Info : WG225094-2,SL2133
Misc Info : WG225143,WG225094,WG225143-5,SL2133-20
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 22 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

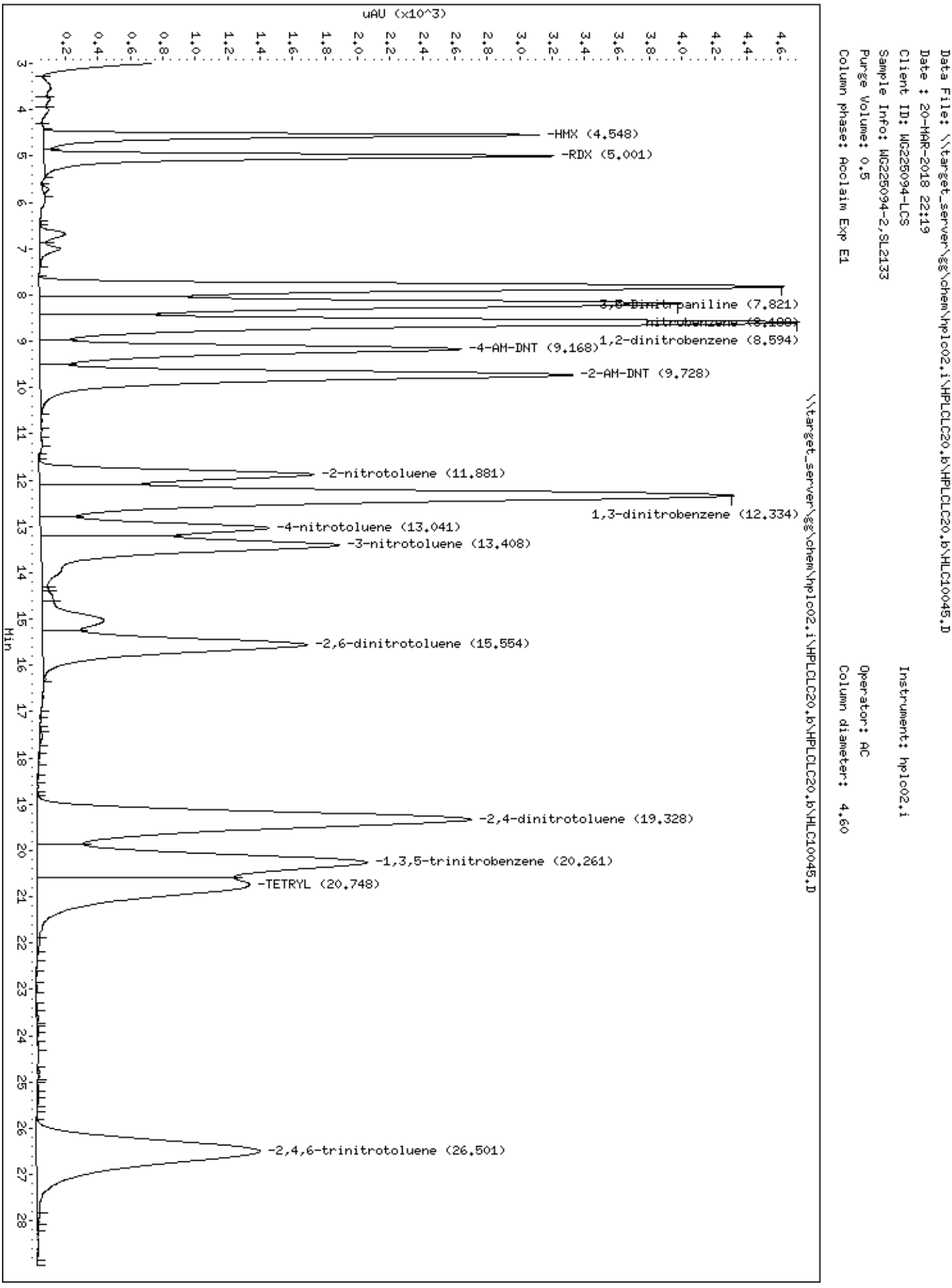
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1	HMX	4.547	4.542	0.005	3053	0.56635	5.66(M)	M2
4	RDX	5.001	4.989	0.012	3137	0.57091	5.71(M)	M2
51	3,5-Dinitroaniline	7.821	7.809	0.012	4585	0.55133	5.51	
7	nitrobenzene	8.187	8.175	0.012	3945	0.57452	5.74	
$ 2	1,2-dinitrobenzene	8.594	8.575	0.019	4680	1.01136	10.1	
11	4-AM-DNT	9.167	9.155	0.012	2595	0.60311	6.03	
12	2-AM-DNT	9.727	9.715	0.012	3281	0.56955	5.70	
15	2-nitrotoluene	11.881	11.862	0.019	1691	0.58521	5.85	
6	1,3-dinitrobenzene	12.334	12.315	0.019	4273	0.57404	5.74	
16	4-nitrotoluene	13.041	13.022	0.019	1407	0.60066	6.01	
17	3-nitrotoluene	13.407	13.389	0.018	1838	0.55268	5.53	
13	2,6-dinitrotoluene	15.554	15.542	0.012	1627	0.55442	5.54	
14	2,4-dinitrotoluene	19.327	19.309	0.018	2673	0.57876	5.79	
5	1,3,5-trinitrobenzene	20.261	20.222	0.039	2033	0.55112	5.51	
9	TETRYL	20.747	20.722	0.025	1309	0.51646	5.16	
10	2,4,6-trinitrotoluene	26.501	26.469	0.032	1375	0.54426	5.44	

9:45 am, Apr 02, 2018

QC Flag Legend

M - Compound response manually integrated.



REISSUE **Katahdin Analytical Services 2000370**

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG225028-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: HLC10083.D

Sample Date:
Received Date:
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 20-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	105.	1000	1050	ug/Kgdrywt	74-125
RDX	100.	1000	1000	ug/Kgdrywt	67-129
1,3,5-Trinitrobenzene	102.	1000	1020	ug/Kgdrywt	80-125
1,3-Dinitrobenzene	104.	1000	1040	ug/Kgdrywt	73-125
Tetryl	110.	1000	1100	ug/Kgdrywt	68-135
Nitrobenzene	101.	1000	1010	ug/Kgdrywt	67-129
2,4,6-Trinitrotoluene	103.	1000	1030	ug/Kgdrywt	71-125
2-Am-DNT	103.	1000	1030	ug/Kgdrywt	71-125
4-Am-DNT	109.	1000	1090	ug/Kgdrywt	64-127
2,6-Dinitrotoluene	103.	1000	1030	ug/Kgdrywt	79-125
2,4-Dinitrotoluene	105.	1000	1050	ug/Kgdrywt	75-125
2-Nitrotoluene	105.	1000	1050	ug/Kgdrywt	70-125
3-Nitrotoluene	104.	1000	1040	ug/Kgdrywt	67-129
4-Nitrotoluene	110.	1000	1100	ug/Kgdrywt	71-125
Nitroglycerin	91.9	1000	919.	ug/Kgdrywt	73-125
PETN	114.	1000	1140	ug/Kgdrywt	72-128
1,2-Dinitrobenzene	102.				78-125

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REISSUE

Katahdin Analytical Services 2000371

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10083.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10083.D
Lab Smp Id: WG225028-2 Client Smp ID: WG225028-LCS
Inj Date : 21-MAR-2018 19:41
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-2,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 60 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

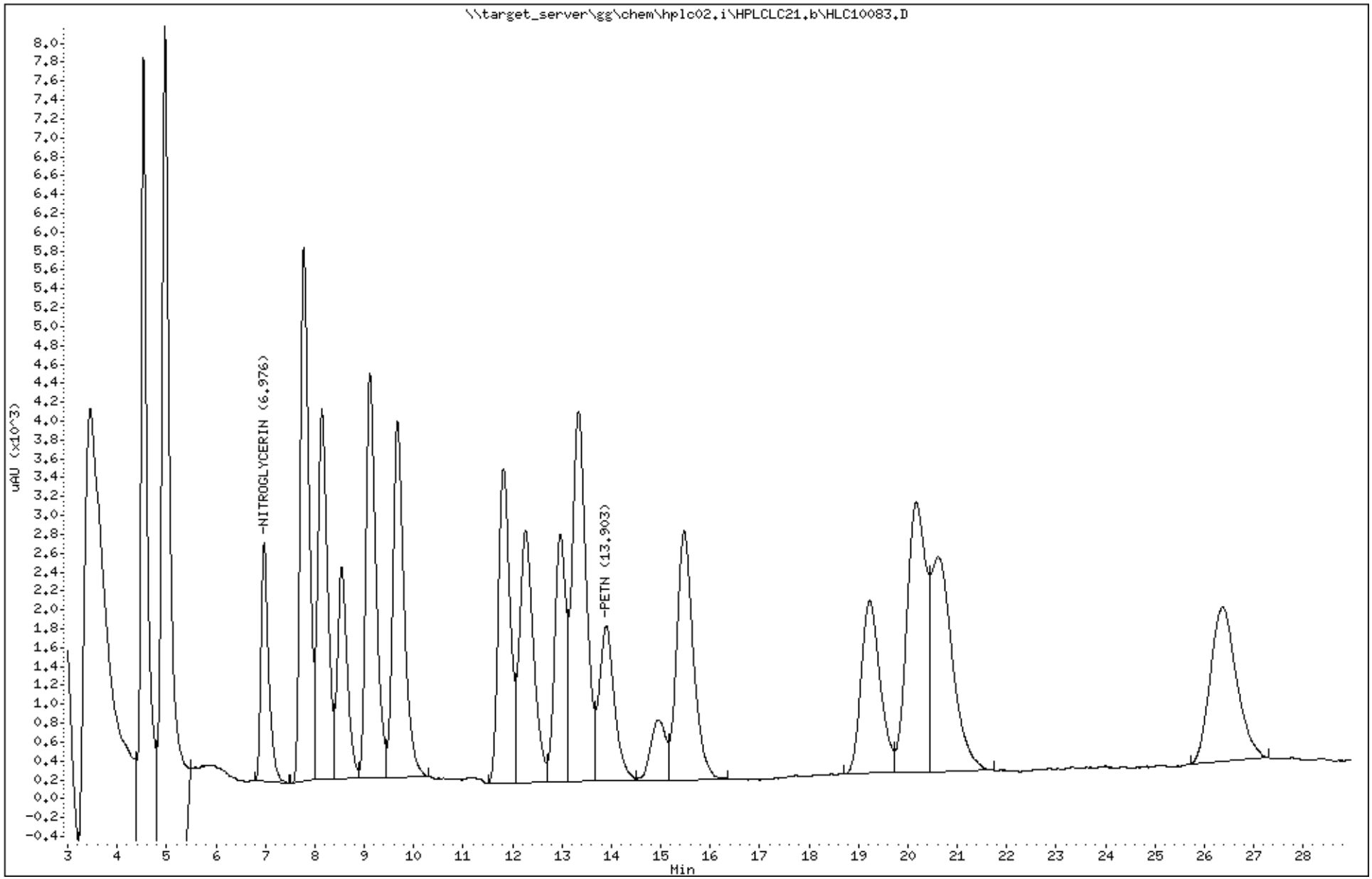
					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kgdrywt)
8 NITROGLYCERIN	6.976	6.975	0.001	2533	0.45944	919
18 PETN	13.902	13.902	0.000	1646	0.57235	1140

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10083.D
Date : 21-MAR-2018 19:41
Client ID: WG225028-LCS
Sample Info: WG225028-2,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000373

REISSUE

Data File: HLC10083.D
Report Date: 30-Mar-2018 11:51

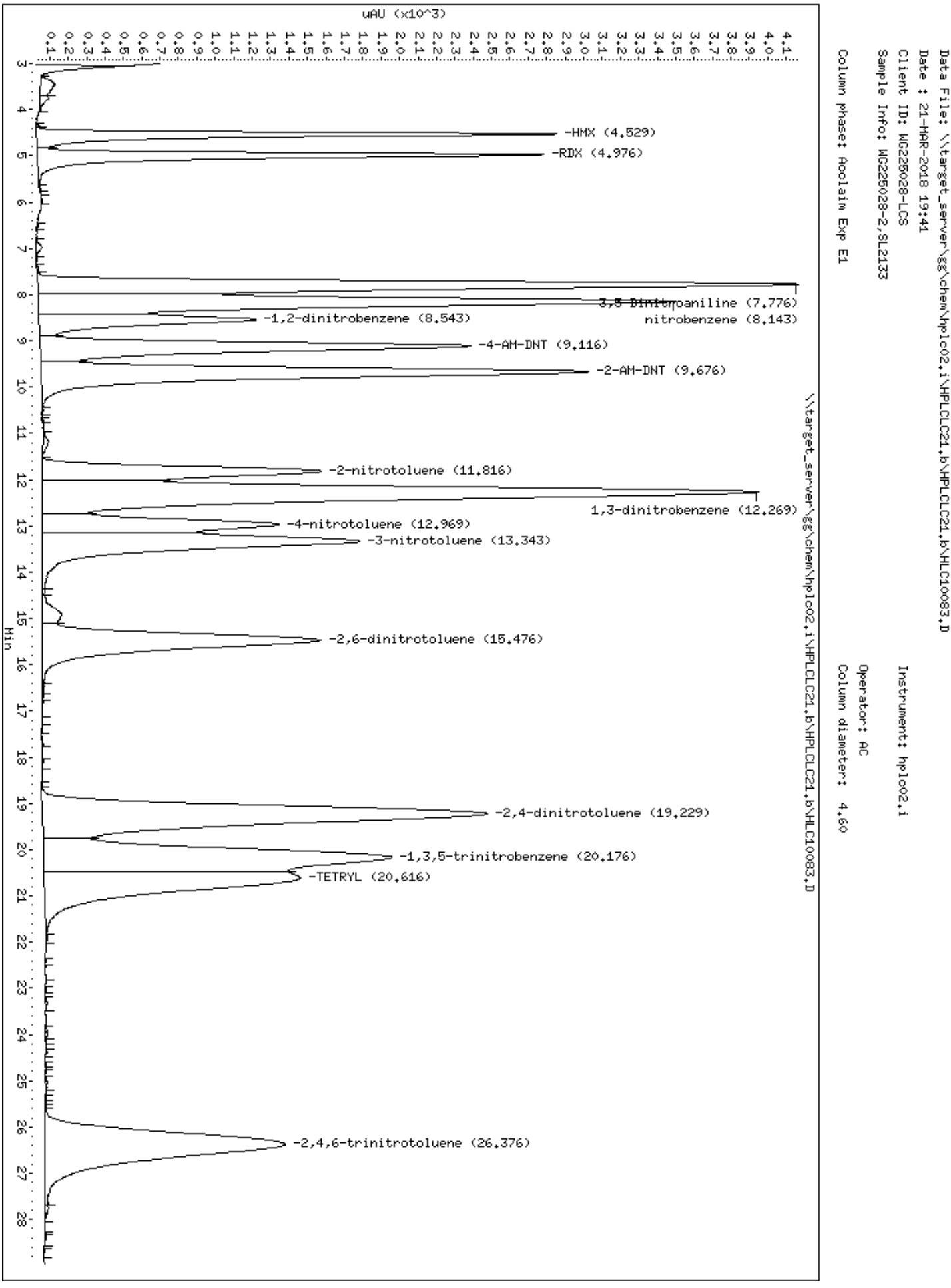
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10083.D
Lab Smp Id: WG225028-2 Client Smp ID: WG225028-LCS
Inj Date : 21-MAR-2018 19:41
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-2,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 60 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.529	4.529	0.000	2822	0.52350	1050	
4	RDX	4.976	4.975	0.001	2747	0.50067	1000	
51	3,5-Dinitroaniline	7.776	7.782	-0.006	4135	0.49722	994	
7	nitrobenzene	8.142	8.149	-0.007	3464	0.50447	1010	
$ 2	1,2-dinitrobenzene	8.542	8.549	-0.007	1183	0.25565	511	
11	4-AM-DNT	9.116	9.115	0.001	2342	0.54431	1090	
12	2-AM-DNT	9.676	9.675	0.001	2979	0.51712	1030	
15	2-nitrotoluene	11.816	11.822	-0.006	1517	0.52499	1050	
6	1,3-dinitrobenzene	12.269	12.269	0.000	3890	0.52259	1040	
16	4-nitrotoluene	12.969	12.969	0.000	1283	0.54772	1100	
17	3-nitrotoluene	13.342	13.342	0.000	1726	0.51900	1040	
13	2,6-dinitrotoluene	15.476	15.475	0.001	1513	0.51468	1030	
14	2,4-dinitrotoluene	19.229	19.235	-0.006	2418	0.52355	1050	
5	1,3,5-trinitrobenzene	20.176	20.175	0.001	1891	0.51262	1020	
9	TETRYL	20.616	20.622	-0.006	1391	0.54881	1100	
10	2,4,6-trinitrotoluene	26.376	26.382	-0.006	1306	0.51695	1030	


Data File: \\target_server\gg\chem\hplc02,i\HPLCLC21,b\HPLCLC21,b\HLC10083,D
Date : 21-MAR-2018 19:41
Client ID: WG225028-LCS
Sample Info: WG225028-2,SL2133
Column phase: Acclaim Exp E1
Instrument: hplc02,i
Operator: AC
Column diameter: 4.60
\\target_server\gg\chem\hplc02,i\HPLCLC21,b\HPLCLC21,b\HLC10083,D
uAU (x10^3)
Min
-HMX (4.529)
-RDX (4.976)
3,5-Dinitroaniline (7.776)
nitrobenzene (8.143)
-1,2-dinitrobenzene (8.543)
-4-AM-DNT (9.116)
-2-AM-DNT (9.676)
-2-nitrotoluene (11.816)
1,3-dinitrobenzene (12.269)
-4-nitrotoluene (12.969)
-3-nitrotoluene (13.343)
-2,6-dinitrotoluene (15.476)
-2,4-dinitrotoluene (19.229)
-1,3,5-trinitrobenzene (20.176)
-TETRYL (20.616)
-2,4,6-trinitrotoluene (26.376)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Client:
Lab ID: WG225426-2
Client ID: LCS
Project:
SDG: SL2133
LCS File ID: HLC10177.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: DP/AC
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225426

Analysis Date: 27-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: NA
Report Date: 20-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
HMX	100.	1000	1000	ug/Kgdrywt	74-125
RDX	99.0	1000	990.	ug/Kgdrywt	67-129
1,3,5-Trinitrobenzene	104.	1000	1040	ug/Kgdrywt	80-125
1,3-Dinitrobenzene	106.	1000	1060	ug/Kgdrywt	73-125
Tetryl	110.	1000	1100	ug/Kgdrywt	68-135
Nitrobenzene	102.	1000	1020	ug/Kgdrywt	67-129
2,4,6-Trinitrotoluene	103.	1000	1030	ug/Kgdrywt	71-125
2-Am-DNT	102.	1000	1020	ug/Kgdrywt	71-125
4-Am-DNT	107.	1000	1070	ug/Kgdrywt	64-127
2,6-Dinitrotoluene	103.	1000	1030	ug/Kgdrywt	79-125
2,4-Dinitrotoluene	106.	1000	1060	ug/Kgdrywt	75-125
2-Nitrotoluene	107.	1000	1070	ug/Kgdrywt	70-125
3-Nitrotoluene	105.	1000	1050	ug/Kgdrywt	67-129
4-Nitrotoluene	112.	1000	1120	ug/Kgdrywt	71-125
Nitroglycerin	77.9	1000	779.	ug/Kgdrywt	73-125
PETN	96.2	1000	962.	ug/Kgdrywt	72-128
1,2-Dinitrobenzene	96.6				78-125

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REISSUE **Katahdin Analytical Services 2000376**

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10177.D
Report Date: 30-Mar-2018 12:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10177.D
Lab Smp Id: WG225426-2 Client Smp ID: WG225426-LCS
Inj Date : 27-MAR-2018 10:35
Operator : AC Inst ID: hplc02.i
Smp Info : WG225426-2,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m
Meth Date : 29-Mar-2018 00:32 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kgdrywt)
8 NITROGLYCERIN	7.018	7.021	-0.003	2148	0.38961	779(a)
18 PETN	14.038	14.061	-0.023	1384	0.48125	962

QC Flag Legend

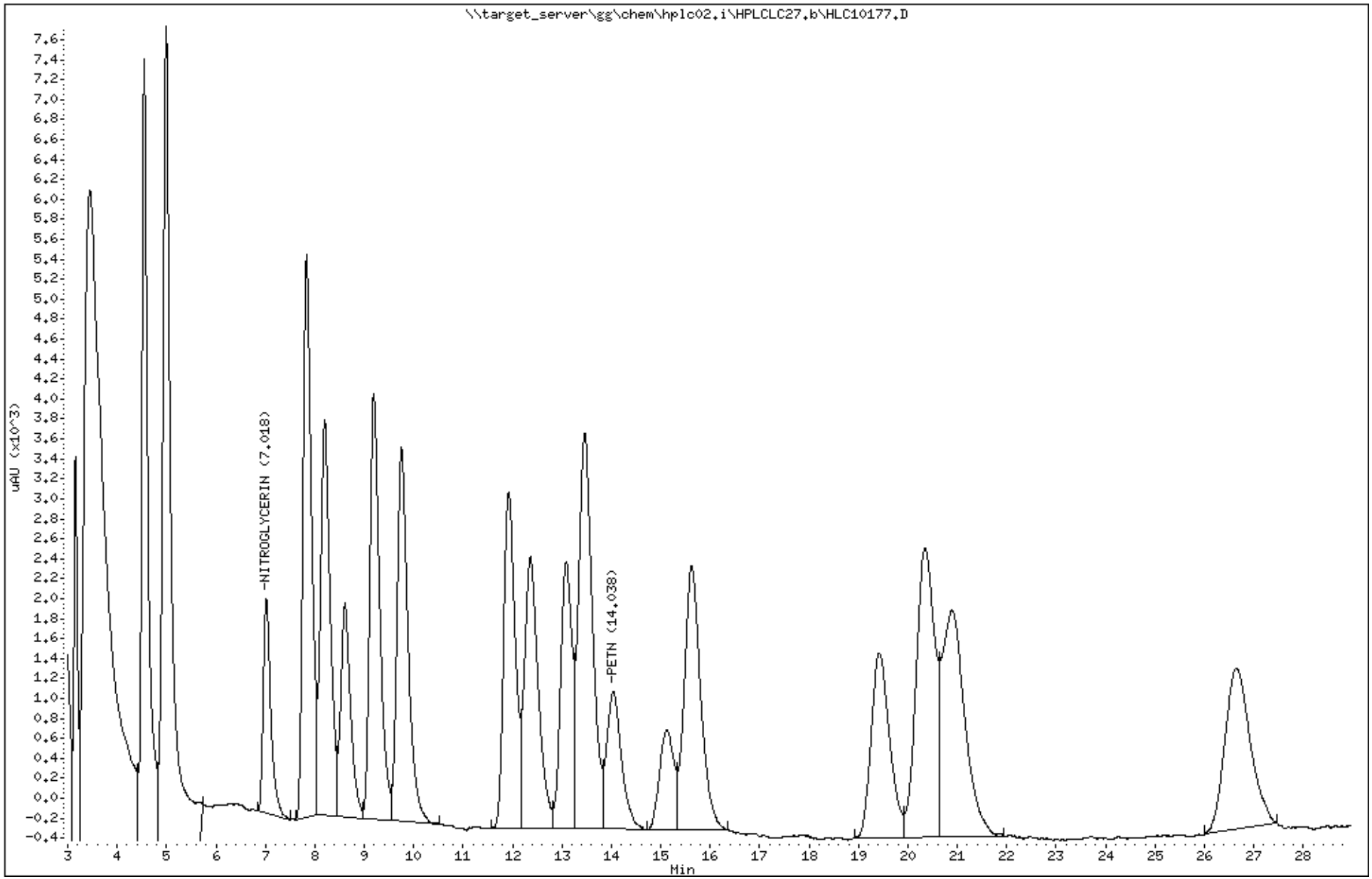
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HLC10177.D
Date : 27-MAR-2018 10:35
Client ID: WG225426-LCS
Sample Info: WG225426-2,SL2133

Instrument: hplc02.i

Operator: AC
Column diameter: 4.60

Column phase: Acclaim Exp E1



Katahdin Analytical Services 2000378
REISSUE

Data File: HLC10177.D
Report Date: 30-Mar-2018 12:38

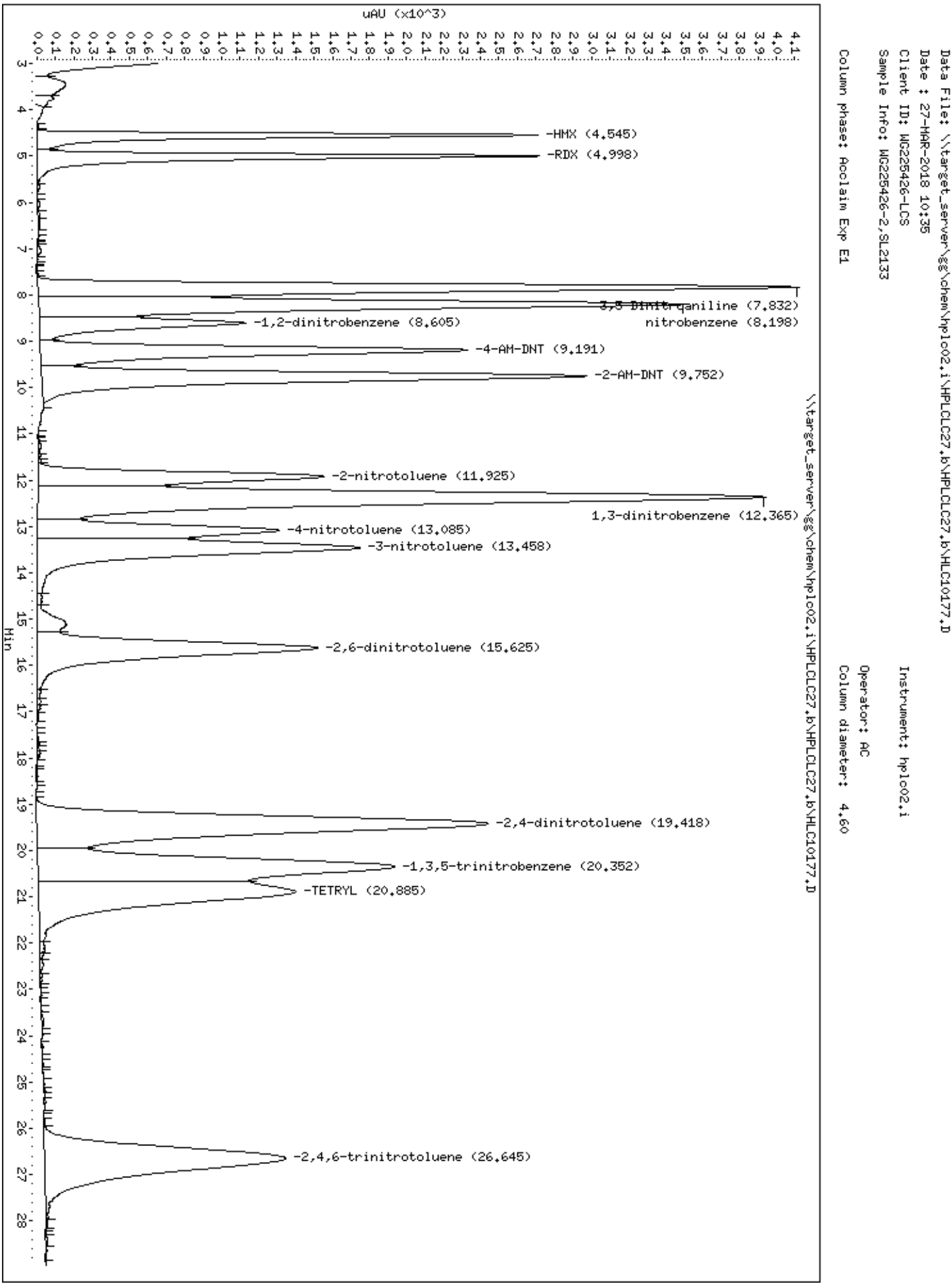
Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\HPLCLC27.b\HLC10177.D
Lab Smp Id: WG225426-2 Client Smp ID: WG225426-LCS
Inj Date : 27-MAR-2018 10:35
Operator : AC Inst ID: hplc02.i
Smp Info : WG225426-2,SL2133
Misc Info : WG225143,WG225426,WG225143-5,SL2133-8
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC27.b\EXPB05A.m\EXPB05A.m
Meth Date : 28-Mar-2018 10:48 acronin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01000	Weight of Sample (Kg)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.544	4.548	-0.004	2709	0.50254	1000	
4	RDX	4.998	5.001	-0.003	2716	0.49508	990	
51	3,5-Dinitroaniline	7.831	7.841	-0.010	4119	0.49529	990	
7	nitrobenzene	8.198	8.208	-0.010	3495	0.50898	1020	
$ 2	1,2-dinitrobenzene	8.604	8.621	-0.017	1117	0.24139	483	
11	4-AM-DNT	9.191	9.208	-0.017	2312	0.53734	1070	
12	2-AM-DNT	9.751	9.768	-0.017	2952	0.51244	1020	
15	2-nitrotoluene	11.924	11.935	-0.011	1547	0.53537	1070	
6	1,3-dinitrobenzene	12.364	12.381	-0.017	3941	0.52944	1060	
16	4-nitrotoluene	13.084	13.101	-0.017	1308	0.55839	1120	
17	3-nitrotoluene	13.458	13.475	-0.017	1743	0.52411	1050	
13	2,6-dinitrotoluene	15.624	15.655	-0.031	1521	0.51747	1030	
14	2,4-dinitrotoluene	19.418	19.455	-0.037	2442	0.52874	1060	
5	1,3,5-trinitrobenzene	20.351	20.388	-0.037	1929	0.52293	1040	
9	TETRYL	20.884	20.921	-0.037	1393	0.54960	1100	
10	2,4,6-trinitrotoluene	26.644	26.708	-0.064	1305	0.51655	1030	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Date : 27-MAR-2018 10:35
Client ID: WG225426-LCS
Sample Info: WG225426-2,SL2133
Instrument: hplc02,i
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60
uAU (x10^3)
Min
\\target_server\gg\chem\hplc02,i\HPLCLC27,b\HPLCLC27,b\HLC10177,D
-HMX (4.545)
-RDX (4.998)
3,5-Dinitroaniline (7.832)
-1,2-dinitrobenzene (8.605)
nitrobenzene (8.198)
-4-AM-DNT (9.191)
-2-AM-DNT (9.752)
-2-nitrotoluene (11.925)
1,3-dinitrobenzene (12.365)
-4-nitrotoluene (13.085)
-3-nitrotoluene (13.458)
-2,6-dinitrotoluene (15.625)
-2,4-dinitrotoluene (19.418)
-1,3,5-trinitrobenzene (20.352)
-TETRYL (20.885)
-2,4,6-trinitrotoluene (26.645)

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG225028-3
MSD ID: WG225028-4
Sample ID: SL2133-19
Client ID: CHAAP-20B-SS06
Project:
SDG: SL2133
MS File ID: HLC10104.D

Received Date:
Extract Date: 20-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330B MOD
Lab Prep Batch: WG225028
Report Date: 20-APR-18
MSD File ID: HLC10105.D

Analysis Date: 22-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: SL
% Solids: 78.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
HMX	1260	1260	ug/Kgdrywt	400	1800	1700	108.	100.	6	20	74-125
RDX	1260	1260	ug/Kgdrywt	140	1400	1400	98.7	96.3	2	20	67-129
1,3,5-Trinitrobenzene	1260	1260	ug/Kgdrywt	U62	1300	1300	102.	101.	1	20	80-125
1,3-Dinitrobenzene	1260	1260	ug/Kgdrywt	U62	1300	1300	103.	103.	0	20	73-125
Tetryl	1260	1260	ug/Kgdrywt	U62	1400	1400	109.	109.	0	20	68-135
Nitrobenzene	1260	1260	ug/Kgdrywt	U62	1300	1200	99.9	99.1	1	20	67-129
2,4,6-Trinitrotoluene	1260	1260	ug/Kgdrywt	120	1400	1400	101.	98.8	2	20	71-125
2-Am-DNT	1260	1260	ug/Kgdrywt	J100	1400	1400	102.	99.9	1	20	71-125
4-Am-DNT	1260	1260	ug/Kgdrywt	190	1600	1500	108.	104.	3	20	64-127
2,6-Dinitrotoluene	1260	1260	ug/Kgdrywt	U62	1200	1300	99.1	99.9	1	20	79-125
2,4-Dinitrotoluene	1260	1260	ug/Kgdrywt	U62	1300	1300	102.	102.	0	20	75-125
2-Nitrotoluene	1260	1260	ug/Kgdrywt	U62	1300	1300	104.	104.	0	20	70-125
3-Nitrotoluene	1260	1260	ug/Kgdrywt	U62	1300	1300	102.	102.	0	20	67-129
4-Nitrotoluene	1260	1260	ug/Kgdrywt	U62	1400	1400	108.	108.	0	20	71-125
Nitroglycerin	1260	1260	ug/Kgdrywt	U500	1100	1200	88.8	91.2	3	20	73-125
PETN	1260	1260	ug/Kgdrywt	U500	1300	1300	106.	105.	1	20	72-128
1,2-Dinitrobenzene							100.	97.3			78-125

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

REISSUE **Katahdin Analytical Services 2000381**

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10104.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

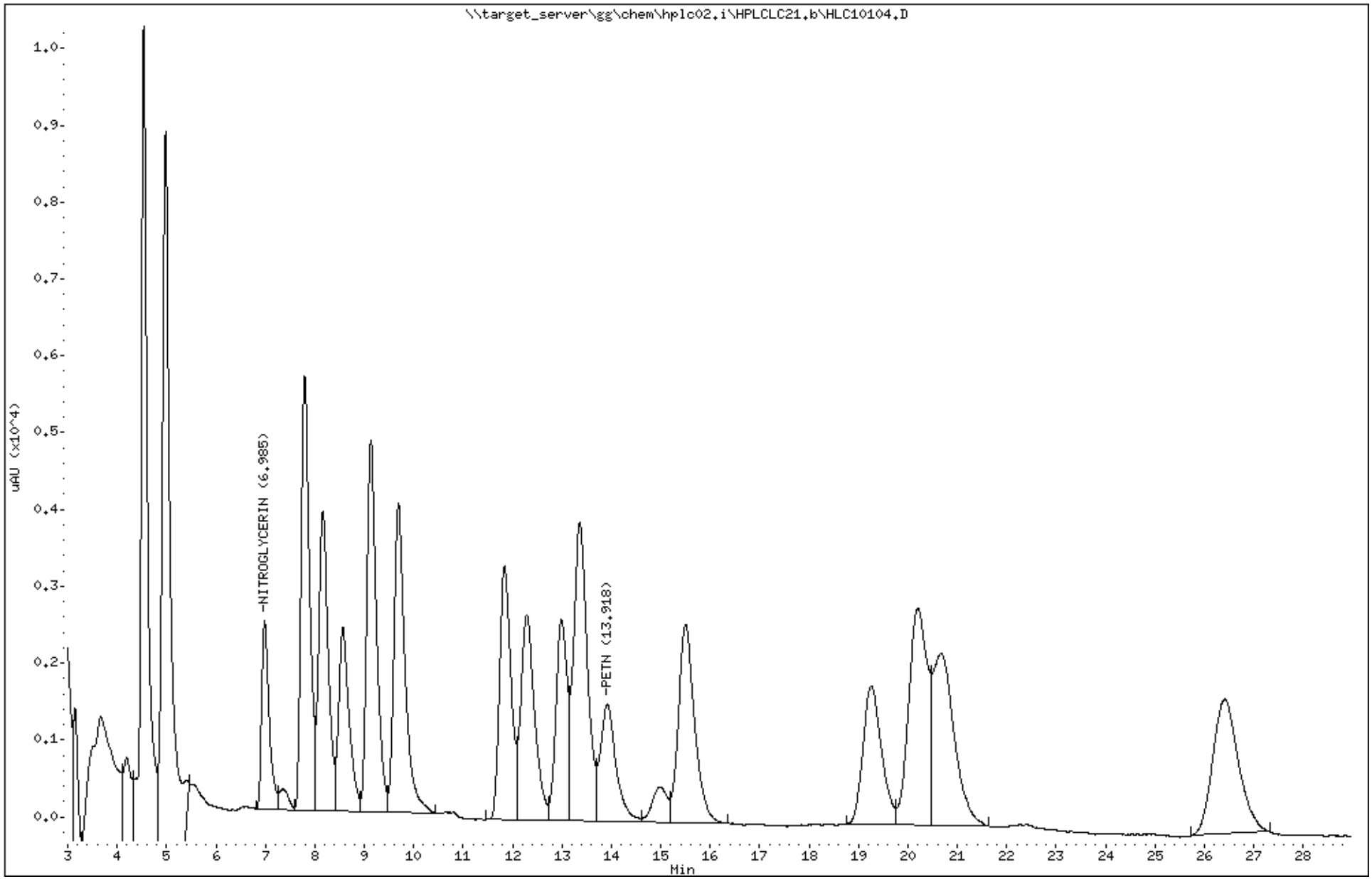
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10104.D
Lab Smp Id: WG225028-3 Client Smp ID: CHAAP-20B-SS06MS
Inj Date : 22-MAR-2018 09:45
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-3,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-19
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 81 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)
8 NITROGLYCERIN	6.984	6.975	0.009	2456	0.44548	1120
18 PETN	13.917	13.902	0.015	1523	0.52958	1340

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10104.D
Date : 22-MAR-2018 09:45
Client ID: CHAAP-20B-SS06MS
Instrument: hplc02.i
Sample Info: WG225028-3,SL2133
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000383
REISSUE

Data File: HLC10104.D
Report Date: 30-Mar-2018 12:20

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10104.D
Lab Smp Id: WG225028-3 Client Smp ID: CHAAP-20B-SS06MS
Inj Date : 22-MAR-2018 09:45
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-3,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-19
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 81 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

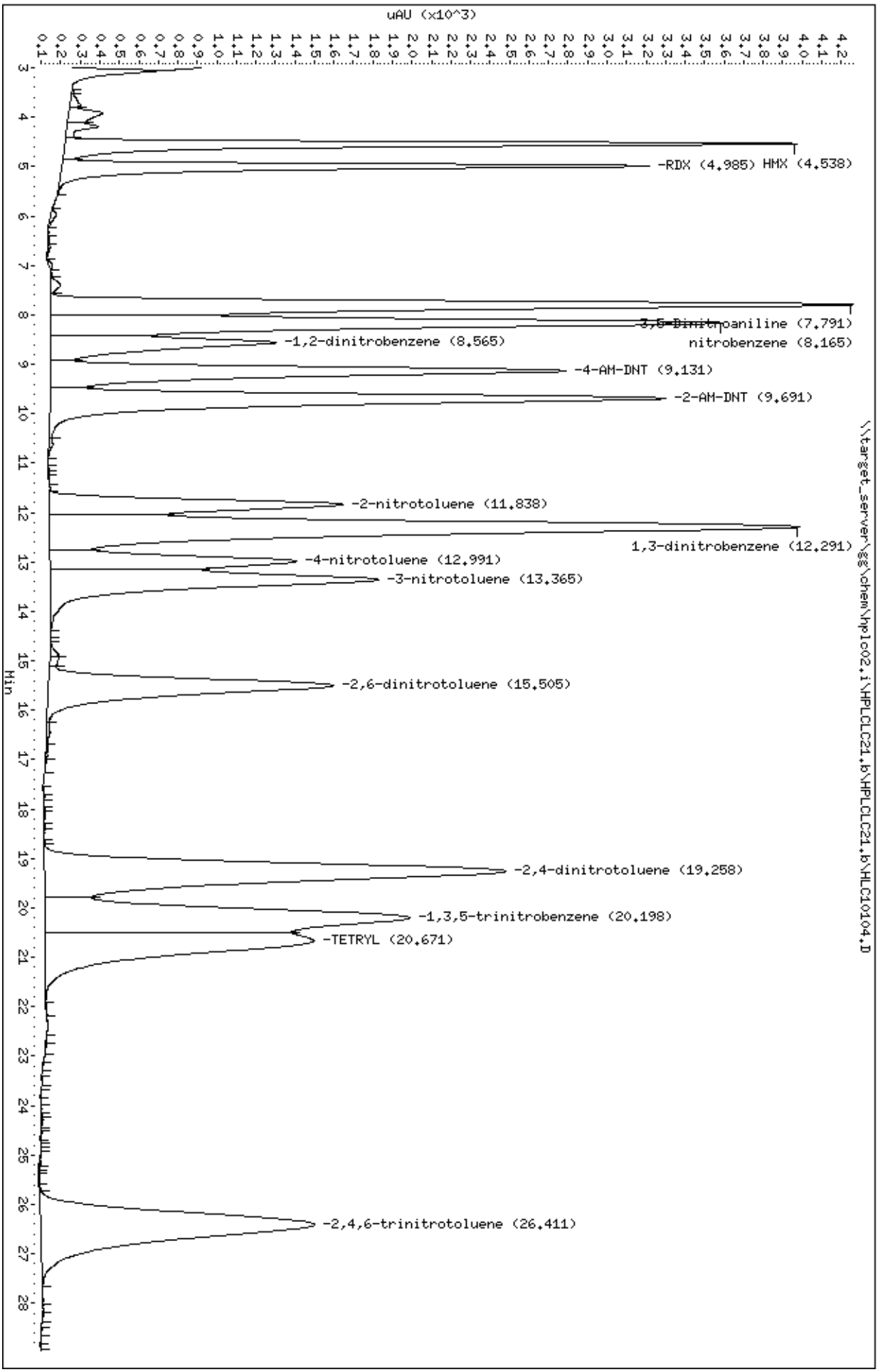
Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.537	4.529	0.008	3752	0.69602	1760(R)	
4	RDX	4.984	4.975	0.009	3011	0.54822	1380	
51	3,5-Dinitroaniline	7.791	7.782	0.009	4112	0.49445	1250	
7	nitrobenzene	8.164	8.149	0.015	3446	0.50185	1260	
$ 2	1,2-dinitrobenzene	8.564	8.549	0.015	1157	0.25003	630	
11	4-AM-DNT	9.131	9.115	0.016	2645	0.61473	1550	
12	2-AM-DNT	9.691	9.675	0.016	3160	0.54854	1380	
15	2-nitrotoluene	11.837	11.822	0.015	1500	0.51911	1310	
6	1,3-dinitrobenzene	12.291	12.269	0.022	3842	0.51614	1300	
16	4-nitrotoluene	12.991	12.969	0.022	1263	0.53918	1360	
17	3-nitrotoluene	13.364	13.342	0.022	1687	0.50727	1280	
13	2,6-dinitrotoluene	15.504	15.475	0.029	1458	0.49551	1250	
14	2,4-dinitrotoluene	19.257	19.235	0.022	2369	0.51294	1290	
5	1,3,5-trinitrobenzene	20.197	20.175	0.022	1871	0.50720	1280	
9	TETRYL	20.671	20.622	0.049	1378	0.54368	1370	
10	2,4,6-trinitrotoluene	26.411	26.382	0.029	1406	0.55653	1400	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.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Date : 22-MAR-2018 09:45
Client ID: CHAAP-20B-SS06MS
Sample Info: WG225028-3,SL2133
Instrument: hplc02,i
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60
uAU (x10^3)
Min
-RDX (4.985) HMX (4.538)
3,5-Dinitroaniline (7.791)
nitrobenzene (8.165)
-1,2-dinitrobenzene (8.565)
-4-AM-DNT (9.131)
-2-AM-DNT (9.691)
-2-nitrotoluene (11.838)
1,3-dinitrobenzene (12.291)
-4-nitrotoluene (12.991)
-3-nitrotoluene (13.365)
-2,6-dinitrotoluene (15.505)
-2,4-dinitrotoluene (19.258)
-1,3,5-trinitrobenzene (20.198)
-TETRYL (20.671)
-2,4,6-trinitrotoluene (26.411)
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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10105.D
Report Date: 30-Mar-2018 11:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10105.D
Lab Smp Id: WG225028-4 Client Smp ID: CHAAP-20B-SS06MSD
Inj Date : 22-MAR-2018 10:17
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-4,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-19
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 82 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

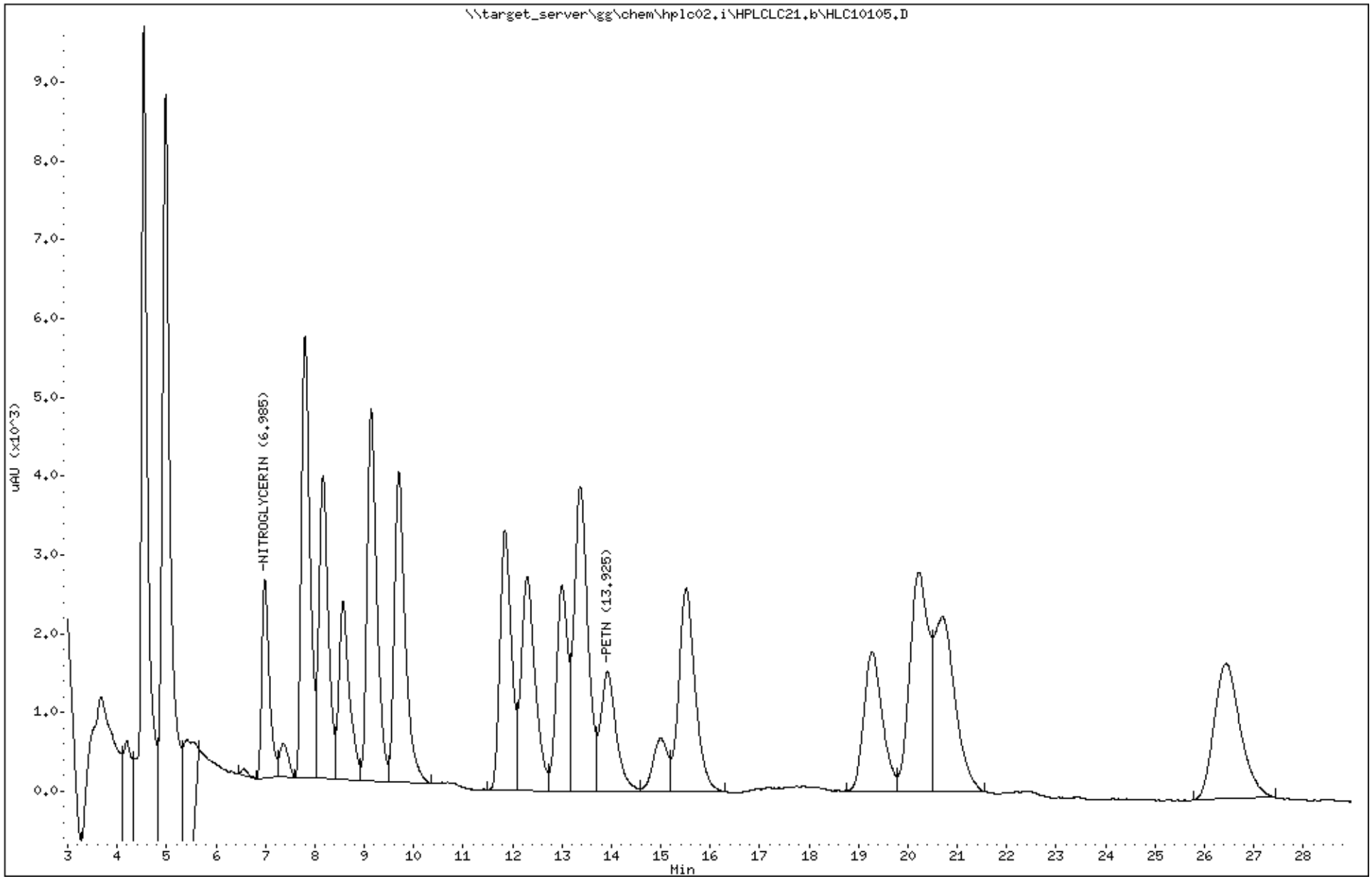
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kgdrywt)
8 NITROGLYCERIN	6.985	6.975	0.010	2523	0.45763	1150
18 PETN	13.925	13.902	0.023	1517	0.52750	1330

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10105.D
Date : 22-MAR-2018 10:17
Client ID: CHAAP-20B-SS06MSD
Sample Info: WG225028-4,SL2133

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000387
REISSUE

Data File: HLC10105.D
Report Date: 30-Mar-2018 12:20

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10105.D
Lab Smp Id: WG225028-4 Client Smp ID: CHAAP-20B-SS06MSD
Inj Date : 22-MAR-2018 10:17
Operator : AC Inst ID: hplc02.i
Smp Info : WG225028-4,SL2133
Misc Info : WG225143,WG225028,WG225143-5,SL2133-19
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 27-Mar-2018 08:49 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 82 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.02000	Final Volume (L)
Ws	0.01010	Weight of Sample (Kg)
M	21.468	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW CODE
1	HMX	4.538	4.529	0.009	3546	0.65781	1660(R)	
4	RDX	4.991	4.975	0.016	2942	0.53579	1350	
51	3,5-Dinitroaniline	7.798	7.782	0.016	4071	0.48952	1230	
7	nitrobenzene	8.165	8.149	0.016	3412	0.49689	1250	
$ 2	1,2-dinitrobenzene	8.565	8.549	0.016	1125	0.24312	613	
11	4-AM-DNT	9.138	9.115	0.023	2566	0.59637	1500	
12	2-AM-DNT	9.698	9.675	0.023	3112	0.54021	1360	
15	2-nitrotoluene	11.851	11.822	0.029	1506	0.52118	1310	
6	1,3-dinitrobenzene	12.298	12.269	0.029	3849	0.51708	1300	
16	4-nitrotoluene	12.998	12.969	0.029	1262	0.53876	1360	
17	3-nitrotoluene	13.371	13.342	0.029	1693	0.50907	1280	
13	2,6-dinitrotoluene	15.518	15.475	0.043	1474	0.50108	1260	
14	2,4-dinitrotoluene	19.278	19.235	0.043	2371	0.51337	1290	
5	1,3,5-trinitrobenzene	20.218	20.175	0.043	1864	0.50531	1270	
9	TETRYL	20.691	20.622	0.069	1380	0.54447	1370	
10	2,4,6-trinitrotoluene	26.445	26.382	0.063	1375	0.54426	1370	

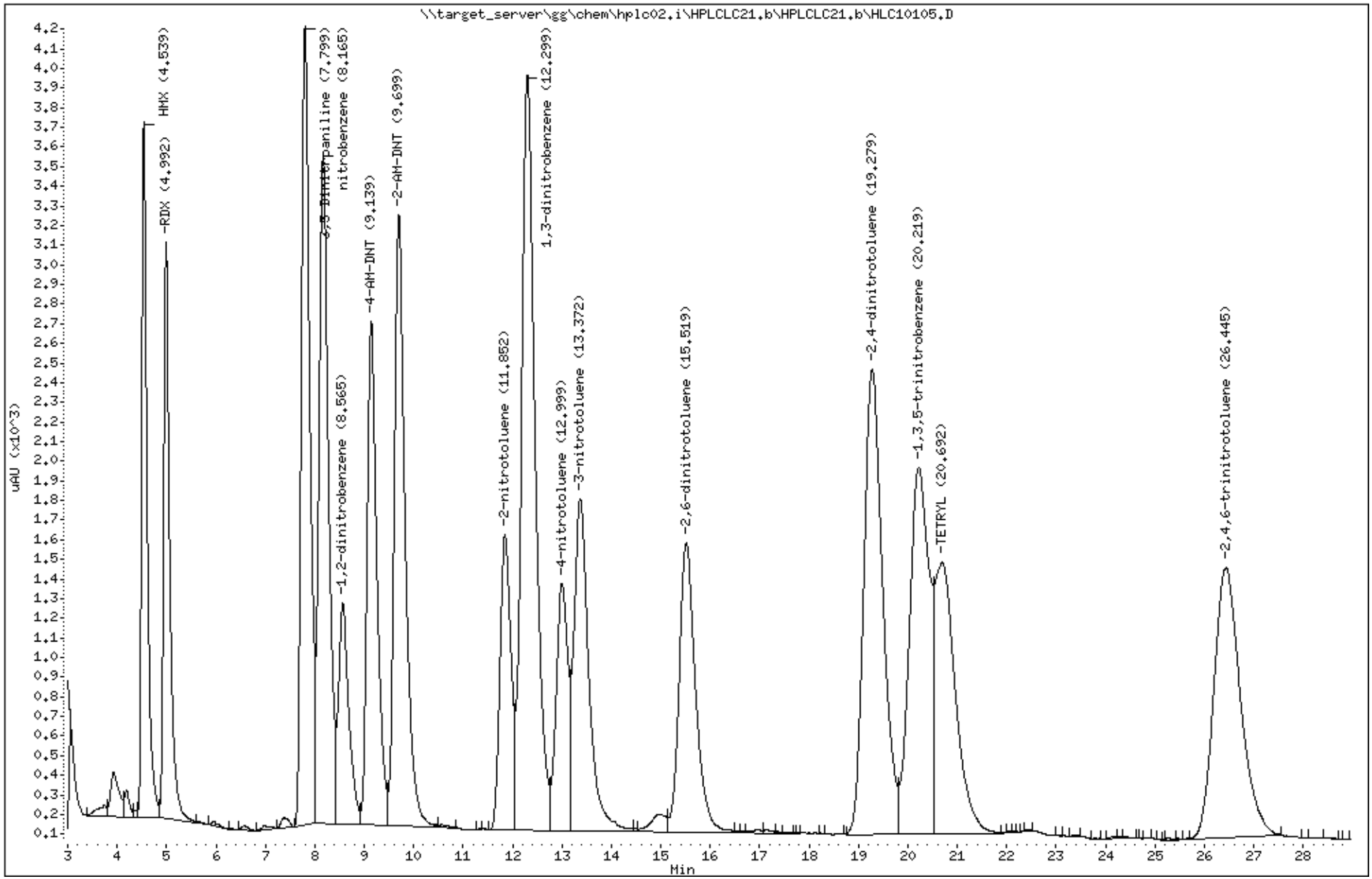
QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10105.D
Date : 22-MAR-2018 10:17
Client ID: CHAAP-20B-SS06MSD
Sample Info: WG225028-4,SL2133

Instrument: hplc02.i

Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000389

REISSUE

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc.
Organic Extractions Log – Explosives (Soils)

Method SW846 8330B

Surrogate Lot # P9006
Spike Lot # P8990
Acetonitrile (ACN) Lot # DQ315

Extraction Start Time: 15:40 3/19/18
Extraction End Time: 9:40 3/20/18

Balance S/N Mettler PJ400
Sieve (No. 30) S/N —

NG: STK5340 PETN: STK5339 EDGN: STK5457

Date Extracted	Analyst	Sample Id.	Initial Amount (g)	Surrogate Volume (ml)	Spike Volume (ml)	Final Volume (mL)	Filter 5 ml of Extract	Add 10 ml of Water to ACN Extract	EXP 231 Tray Location	Comments
3-19-18	JMS	WG225027-1	10.00	0.50	NR	20mL	✓	✓	F4	124655975
		-2	10.03		100µl				5	
		-3	10.10						6	MS SL2079-9 N
		-4	10.54						7	MSD ↓ possible double surr
		-5	10.01						8	LCSD

EX-022 – Revision 1 – 11/01/2012

QAEX297

0000190

Date Extracted	Analyst	Sample Id.	Initial Amount (g)	Surrogate Volume (ml)	Spike Volume (ml)	Final Volume (mL)	Filter 5 ml of Extract	Add 10 ml of Water to ACN Extract	EXP 231 Tray Location	Comments
3-19-18	JMS	SL2079-1 E	10.36	0.5mL	NR	20mL	✓	✓	F9	clay
		-2 E	12.56						10	
		-3 E	10.51						11	
		-4 E	10.44						12	
		-5 E	10.26						EXP 232 A1	
		-6 E	10.13						2	
		-7 E	10.60						3	
		-8 E	10.10						4	
		-9 N	10.30						5	MS10
		-10 E	10.36						6	
		-11 E	10.06						7	
		-12 E	10.37						8	
		-13 E	10.06						9	
		SL2133-1 A	10.50						10	
		-2 A	10.30						11	
		-3 A	10.89						12	
		-4 A	10.34						B1	

EX-022 – Revision 1 – 11/01/2012

QAEX297

0000191

REISSUE

Katahdin Analytical Services 2000391

KATAHDIN ANALYTICAL SERVICES
ORGANIC EXTRACTIONS LOGBOOK - AQUEOUS EXPLOSIVES
METHOD: SW846 8330 B Mod.

Surrogate Lot # P9006
Spike Lot # P8490
Acetonitrile (ACN) Lot # JQ315
Cartridge Lot # 1076775, 1045284

Other Lot # NG: STK5340
Other Lot # AETN: STK5339
EDGN: STK5457
Extraction Start Time: 11:30
Extraction Finish Time: 15:35

Extract Date	Extract Time	Analyst	Sample ID	Bottle ID.	Initial Vol. (600 mL)	Surr.: Add 600 uL of 10 ug/mL Add to all samples	SPIKE: Add 25 uL of 100 ug/mL to MS/D & LCS/D	Elute 15 mL ACN (at gravity flow rate) thru cartridge and discard	Elute 30 mL water thru cartridge and discard	Elute sample through cartridge and discard	Elute 5 mL ACN through cartridge and collect	Add 10 mL water to ACN extract	Store sample in labeled vial	EXP 232 Tray Location	Comments
3/19/18	11:40	JMS	WG225094-1	2	✓	✓	NR	✓	✓	✓	✓	✓	✓	B2	R466201
↓	↓	↓	-2	2	↓	↓	✓	↓	↓	↓	↓	↓	↓	3	10ul P+N HE
			-3	J			↓							4	MS SL2295-2
↓	↓	↓	-4	J	↓	↓	↓	↓	↓	↓	↓	↓	↓	5	MSD ↓

HP-001 - Revision 1 - 02/11/2010

Extract Date	Extract Time	Analyst	Sample ID	Bottle ID.	Initial Vol. (600 mL)	Surr.: Add 600 uL of 10 ug/mL Add to all samples	SPIKE: Add 25 uL of 100 ug/mL to MS/D & LCS/D	Elute 15 mL ACN (at gravity flow rate) thru cartridge and discard	Elute 30 mL water thru cartridge and discard	Elute sample through cartridge and discard	Elute 5 mL ACN through cartridge and collect	Add 10 mL water to ACN extract	Store sample in labeled amber vial	EXP 232 Tray Location	Comments
3/19/18	11:40	JMS	SL2079-14	F	✓	✓	NR	✓	✓	✓	✓	✓	✓	B6	
↓	↓	↓	SL2133-20	D	↓	↓	↓	↓	↓	↓	↓	↓	↓	7	
			SL2295-1	A										8	
			-2	K										9	MS10
	↓		-3	A										10	
	13:20		-4	A										11	
	↓		-5	A										12	
			-6	A										C1	
			-7	A										2	
			-8	A										3	
			-9	A										4	
			-10	A										5	
			-11	A										6	
			-12	A										7	
	14:30		-13	A										8	
			-14	A										9	
			-15	A										10	
			-16	A										11	
			-17	A										12	
↓	↓	↓	-18	D	↓	↓	↓	↓	↓	↓	↓	↓	↓	D1	

HP-001 - Revision 1 - 02/11/2010

QAEX339
0000054
QAEX339
0000055

Katahdin Analytical Services, Inc.
Organic Extractions Log – Explosives (Soils)

Method SW846 8330B

Surrogate Lot # P9006, P9070
Spike Lot # P8990
Acetonitrile (ACN) Lot # DQ315

Extraction Start Time: 15:00 3/20/18
Extraction End Time: 9:40 3/21/18

Balance S/N Mettler PJ400
Sieve (No. 30) S/N ——

NG: STK 5340 PETN. STK 5339 EDGN: STK 5457

Date Extracted	Analyst	Sample Id.	Initial Amount (g)	Surrogate Volume (ml)	Spike Volume (ml)	Final Volume (mL)	Filter 5 ml of Extract	Add 10 ml of Water to ACN Extract	EXP 232 Tray Location	Comments
3/20/18	JMS	wg225028-1	10.03	0.5mL	NR	20mL	✓	✓	D11	R465776
		-2	10.02		100uL				J12	100uL P+NG+E
		-3	10.14						E1	MS: SL2133-19
		-4	10.13						J2	MSD: SL2133-19

EX-022 – Revision 1 – 11/01/2012

QAEX297

0000193

Date Extracted	Analyst	Sample Id.	Initial Amount (g)	Surrogate Volume (ml)	Spike Volume (ml)	Final Volume (mL)	Filter 5 ml of Extract	Add 10 ml of Water to ACN Extract	EXP 232 Tray Location	Comments
3/20/18	JMS	SL2133-5	10.44	0.5mL	NR	20mL	✓	✓	E3	
		-6	10.04						4	
		-7	10.94						5	
		-8	10.52						6	
		-9	10.57						7	
		-10	10.03						8	
		-11	11.08						9	
		-12	10.06						10	
		-13	10.20						11	
		-14	10.24						12	
		-15	10.62						F1	
		-16	10.00						2	
		-17	11.24						3	
		-18	10.22						4	
		-19	10.24						5	MS/MSD
		-21	10.42						6	
		-22	10.22						7	
		SL2294-1	11.26						8	

EX-022 – Revision 1 – 11/01/2012

Katahdin Analytical Services, Inc.
Organic Extractions Log – Explosives (Soils)

Method SW846 8330B

Surrogate Lot # P9070
Spike Lot # P8990
Acetonitrile (ACN) Lot # DQ315

Extraction Start Time: 14:30 03-26-18
Extraction End Time: 10:00 03-27-18

Balance S/N METTLER PG400
Sieve (No. 30) S/N —

PETN: STK 5438 NG: STK 5340 EGDN: STK 5457

Date Extracted	Analyst	Sample Id.	Initial Amount (g)	Surrogate Volume (ml)	Spike Volume (ml)	Final Volume (mL)	Filter 5 ml of Extract	Add 10 ml of Water to ACN Extract	EXP233 Tray Location	R466281 Comments
03-26-18	DP/AC	W622547[illegible]-1	10.04	0.50	NR	20.00	✓	✓	B5	
"	"	" -2	10.04	"	100µl	"	"	"	16	

EX-022 – Revision 1 – 11/01/2012

QAEX297

Date Extracted	Analyst	Sample Id.	Initial Amount (g)	Surrogate Volume (ml)	Spike Volume (ml)	Final Volume (mL)	Filter 5 ml of Extract	Add 10 ml of Water to ACN Extract	EXP233 Tray Location	Comments
03-26-18	DP/AC	SC2079-8 BE RE	10.00	0.50	NR	20.0	✓	✓	B7	RE
"	"	" -10E	10.42	"	"	"	"	"	8	
"	"	SC-2133-8A	10.07	"	"	"	"	"	9	
"	"	-9A	10.08	"	"	"	"	"	10	
"	"	-10A	10.76	"	"	"	"	"	11	
"	"	-11A	10.26	"	"	"	"	"	12	
"	"	-12A	10.00	"	"	"	"	"	C1	
"	"	-13A	10.10	"	"	"	"	"	2	
"	"	-14A	10.13	"	"	"	"	"	3	
"	"	-15A	10.69	"	"	"	"	"	4	
"	"	-16A	10.42	"	"	"	"	"	5	
"	"	-17A	10.91	"	"	"	"	"	6	
"	"	-18A	10.10	"	"	"	"	"	7	
"	"	-19C	10.21	"	"	"	"	"	8	
"	"	-21A	10.74	"	"	"	"	"	9	
"	"	-22A	10.96	"	"	"	"	"	10	

EX-022 – Revision 1 – 11/01/2012

QAEX297

0000197

REISSUE

Katahdin Analytical Services 2000394

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ ~~8330B~~

Column: PHENOMENEX	Injection Volume: 100µL	Standard	Standard ID
Flow Rate: 1.0mL/min	Methanol lot #: DA788	C5	P8846
Detector Wavelengths: 210nm/254nm		C4	P8847

Date	Init.	Result File	Sample ID	Y/N	Analytical Workgroup	Method	Comments
073117	AAB	HK410216	IND -8	Y	WG210620 (10 AMS 080217)	EXP803A	
080117	AAB	HK410001	C5 -17	Y		EXP803A	
		002	WG210205-1	Y			
		003	↓ -2				
		004	SK6535-1				
		005	↓ -2				
		006	C4 -18	Y			
CHANGE TO ACCLAIM ER COLUMN							
080117	AAB	HK410007	PRIME	N	WG210620 (10 AMS 080217)	ER016A	
		008	C7 -15	Y			P8844
		009	C6 -14				C7 150→300
		010	C5 -13				
		011	C4 -12				
		012	C3 -11				C5 60→300
		013	C2 -10				C4 60→300
		014	C1 -9				C4 30→300
		015	IND	N			P8845
		016	IND -16	Y			TET 4AM 3NT ↑
		017	WG210205-1C	Y			
		018	SK6535-1C				
		019	↓ -2C				
		020	C5	N			WRONG VIAL
080217		021	C5 -19	Y			
CHANGE TO PHENOMENEX COLUMN							
080317	AAB	HK410022	C5	Y	WG210944-1	EXP803A	
		023	WG210421-1	Y	WG210944		
		024	↓ -2				
		025	↓ -3				

Reviewed by/Date: _____

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: PHENOMENEX	Injection Volume: 100µL	Standard	Standard ID
Flow Rate: 1.0 mL/MIN	Methanol lot #: DS202	C5	P9009
Detector Wavelengths: 210 nm / 254 nm		C4	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
031618	AC	HLC10023	COMBO	N		CANNAB1	CANN TESTING
CHANGE TO PHENOMENEX COLUMN							
032018	AC	HLC10024	C5	Y		EXPBO4A	
		025	WG225027-1	N			
		026	-2				
		027	-5				
		028	-3				
		029	-4				
		030	IND	N	WG225143	EXPBO5A	
		031	C7 -7	Y			P9008
		032	C6 -6				↓ 150→300
		033	C5 -5				P9009
		034	C4 -4				P9010
		035	C3 -3				P9009 100→500
		036	C2 -2				↓ 50→500
		037	C1 -1				P9010 50→500
		038	IND -8				P9071
		039	WG225027-1	Y			
		040	-2				
		041	-5				
		042	-3				
		043	-4				SS DOUBLE SPIKE
		044	WG225094-1	Y			
		045	-2				
		046	SL2079-14	Y			R,D
		047	SL2138-20	Y			
		048	SL2295-1	Y			PETN SS ROUNDS IN
032118		049	C5 -9	Y			

Reviewed by/Date:

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ ~~8330B~~

Column: PHENOMENEX	Injection Volume: 100mL	Standard	Standard ID
Flow Rate: 1.0mL/MIN	Methanol lot #: DR116	CS	P9009
Detector Wavelengths: 210 nm / 254 nm		CL	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
032118	AC	HLC100T8	SLZ295-24	Y	WLZ25143	EXPB05A	
		079	↓ -25	↓			R
		080	SLZ329-16	Y			
		081	CL -13	Y			
		082	WLZ25028-1	Y			
		083	↓ -2	↓			
		084	SLZ294-1	Y			~~SS~~ ↓ ~~MB 032218~~ 88.1% SS↓
		085	SLZ079-1	Y			
		086	-2				
		087	-3				
		088	-4				
		089	-5				
		090	-6				
↓		091	-7	↓			SS ROUNDS IN
032218		092	CS -14	Y			
		093	SLZ079-8	Y			SS ↓ 88.3%
		094	-9	Y			SS ROUNDS IN
		095	-10	Y			SS ↓ 88.0%
		096	-11	Y			
		097	-12				
		098	-13	↓			
		099	SLZ133-1	Y			HR
		100	-2				HR
		101	-3				HR
		102	-4	↓			HR 4AM RAM
		103	CL -15	Y			
		104	WLZ25028-3	Y			H↑
↓	↓	105	↓ -4	↓	↓	↓	H↑

Reviewed by/Date:

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: PHENOMENEX	Injection Volume: 100 mL	Standard	Standard ID
Flow Rate: 1.0 mL / MIN	Methanol lot #: DR 116	C5	P9009
Detector Wavelengths: 210 nm / 254 nm		C4	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
* AAB 032318 032218	~~AC~~ AAB	HLC10106	SL2133-5	Y	WG225143	EXPBOSA	RR 1:2 H R 4AM 2AM
		107	-6				H R
		108	-7				H R
		109	-8	Y			H SS↓
		110	-9				H R SS↓
		111	-10				H SS↓
		112	-11				H R SS↓
		113	-12				H R SS↓
032218	AC	HLC10114	C5 -16	Y	WG225143	EXPBOSA	
		115	SL2133-13	Y			H R 4AM 2AM SS↓
		116	-14				H R SS↓
		117	-15				H R dAM 2AM SS↓ TNT
		118	-16				H R 4AM 2AM SS↓ TNT
		119	-17				H R dAM 2AM SS↓
		120	-18				H dAM 2AM SS↓
		121	-19				H R 4AM 2AM SS↓ TNT
		122	-21				RR 1:10 H R dAM 2AM SS↓ TNT
		123	-22				H R dAM 2AM SS↓
		124	C4 -17	Y			
* AAB 032318		125	WG225~~146~~149* -1				SS↓
		126	-2				
		127	-3				
		128	-4				
032318		129	SL2329-1				SS↓
		130	-2				
		131	-3				
		132	-4				
		133	-5				

Reviewed by/Date:

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: PHENOMENEX	Injection Volume: 100uL	Standard	Standard ID
Flow Rate: 1.0mL/MIN	Methanol lot #: DR116	C5	P9009
Detector Wavelengths: 210nm/254nm		CCV	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
032318	AC	HLC10134	SLZ329-6		WLZ25143	EXPB05A	SS ↓
		135	C5 -18	Y			
		136	SLZ329-7	Y			
		137	-8	↓			
		138	-9				
		139	-10				SS ↓
		140	-11	Y			SS ROUNDS IN
		141	-12				SS ↓
		142	-13				SS ↓
		143	-14				SS ↓
		144	-17	Y			
		145	-18	↓			
		146	CCV -19	Y			
		147	SLZ133-50L	Y			100 → 200
		148	↓ -21DL	N			50 → 500 NO DI CAL
		149	WLZ25149-12A	N			SS ↓
		150	SLZ133-21DL	Y			
		151	C5 -20	Y			
CHANGE TO ACCLAIM E2 COLUMN							
032318	AC	HLC10152	C5 -21	Y	WLZ25143	E2016A	
		153	WLZ25027-1C	Y			
		154	SLZ133-1C				4 R
		155	-2C				4 R
		156	-3C				4 R
		157	-4C				4 R
		158	WLZ25094-1C	Y			
		159	~~SLZ079-1C~~ SLZ079-4C				NONE
		160	SLZ295-1C	↓			NONE

Reviewed by/Date: _____

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): ~~8330B MOD.~~ 8330B

Column: ACCLAIM E2	Injection Volume: 150uL	Standard	Standard ID
Flow Rate: 1.0mL/MIN	Methanol lot #: DR116	C5	P9009
Detector Wavelengths: 210nm / 254 nm		C4	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
032318	AC	HLC10161 ~~SL2295~~	SL2295-2C	Y	WG225143	E2016A	NONE
032418		HLC10162	↓ -6C	↓			NONE
		163	C4 -22	Y			
		164	SL2295-7C	Y			NONE
		165	-8C				
		166	-9C				
		167	-10C				
		168	-12C				
		169	-16C				
		170	-17C				
		171	-18C				
		172	WG225144-1C	Y			
		173	SL2295-25C				NONE
		174	C5 -23	Y			
CHANGE TO PHENOMENEX COLUMN							
032718	AC	HLC10175	C5 -24	Y	WG225143	EXPBOSA	
		176	WG225426-1	Y			ss↓
		177	↓ -2	Y			
		178	SL2079-8RE	Y			ss↓
		179	↓ -10RE	Y			ss↓
		180	C4 -25	Y			
		181	SL2133-8RE	Y			HR ss↓
		182	-9RE				HR
		183	-10RE				ss↓
		184	-11RE				HR
		185	-12RE				HR
		186	-13RE				HR 4AM 2AM ss↓
		187	-14RE				HR ss↓

Reviewed by/Date:

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): 8330B MOD / 8330B

Column: PHENOMENEX	Injection Volume: 100mL	Standard	Standard ID
Flow Rate: 1.0mL/MIN	Methanol lot #: DR116	CS	P9009
Detector Wavelengths: 210nm / 254nm		CCH	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
032718	AC K ~~MAB~~	HLC10188	SL2133-15RE	Y	WG225143	EXPB05A	DOUBLE SS SPIKE SS↓ H R dAM ZAM TNT
		189	-16RE				H R dAM ZAM TNT SS
		190	-17RE				H dAM ZAM TNT
		191	CCH -26	Y			
		192	SL2133-18RE	Y			H dAM ZAM SS↓
		193	-19RE				H R dAM ZAM TNT
		194	-21RE				DOES NOT MATCH ORIG SS↓ H R dAM ZAM TNT
		195	-22RE				SS END IN H dAM ZAM TNT
		196	WG225426-1RA	N			SS↓
		197	WG225027-~~LRA~~ ZRA MB 032418	N			TETRYL TEST
		198	WG225094-2RA				↓
		199	CS -27	Y			
CHANGE TO ACCLAIM EZ COLUMN							
032818	KC	HLC10200	CS -28	Y	WG225148	EZ016A	
		201	WG225028-1C	Y			
		202	SL2133-5C				H R
		203	-6C				H R SS
		204	-7C				H R
		~~205~~	-8C				H ~~R~~ MB 032818 SS
		206	-9C				H R SS
		207	-10C				NONE
		208	-11C				H R SS
		209	-12C				H R SS
		210	-13C				H R SS
		211	CCH -29	Y			
		212	SL2133-14C	Y			H R SS
		213	-15C				H R TNT dAM ZAM SS
		214	-16C				H R TNT dAM ZAM SS

Reviewed by/Date: _____

Katahdin Analytical Services

HPLC Runlog
Instrument: HPLC02

Method (circle): (8330B MOD.) / 8330B

Column: ACCLAIM E2	Injection Volume: 150uL	Standard	Standard ID
Flow Rate: 1.0 mL/MIN	Methanol lot #: DB116	CS	P9009
Detector Wavelengths: 210 nm / 254 nm		CH	P9010

Date	Init.	Result File	Sample ID	Y/N	Analyical Workgroup	Method	Comments
032818	AC	HLC10215	SL2133-17C	Y	WG225143	E2O1CA	R H TNT HB 032018 ~~4AM 2AM~~
↓		216	-18C				H SS
032918		217	-19C				H R TNT 4AM 2AM SS
		218	-21C				H R TNT 4AM 2AM SS
		219	-22C	↓			H SS
		220	WG225426-1C	Y			SS
		221	SL2133-8REC	↓			H R SS
		222	CS -30	Y			
		223	SL2133-9REC	Y			H R
		224	-10REC	N			NOT NEEDED SS
		225	-11REC	Y			H R SS
		226	-12REC				H R SS
		227	-13REC				H R SS
		228	-14REC				H R SS
		229	-15REC				DOUBLE SS SPIKE H R TNT 4AM 2AM SS
		230	-16REC	↓			H R TNT 4AM 2AM SS
		231	CH -31	Y			
		232	SL2133-17REC	Y			H TNT SS
		233	-18REC				H SS
		234	-19REC				H R TNT 4AM 2AM SS
		235	-21REC				H R TNT 4AM 2AM SS
		236	-22REC	↓			H ~~TNT~~ HB 033018 SS
↓	↓	237	CS -32	Y	↓	↓	

Reviewed by/Date: _____

METALS DATA

Sample Data Section

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.
J	Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: SL2133 **SOW No.** SW846

Client Field ID	Lab Sample ID
CHAAP-20B-EB-031518	SL2133-020
CHAAP-20B-SB01-11	SL2133-001
CHAAP-20B-SB01-4	SL2133-002
CHAAP-20B-SB01-8	SL2133-003
CHAAP-20B-SB02-4	SL2133-004
CHAAP-20B-SB02-8	SL2133-005
CHAAP-20B-SB03-4	SL2133-006
CHAAP-20B-SB03-8	SL2133-007
CHAAP-20B-SB04-4	SL2133-008
CHAAP-20B-SB04-8	SL2133-009
CHAAP-20B-SB05-4	SL2133-010
CHAAP-20B-SB05-8	SL2133-011
CHAAP-20B-SB06-4	SL2133-012
CHAAP-20B-SB06-8	SL2133-013
CHAAP-20B-SS01	SL2133-014
CHAAP-20B-SS02	SL2133-015
CHAAP-20B-SS03	SL2133-016
CHAAP-20B-SS04	SL2133-017
CHAAP-20B-SS05	SL2133-018
CHAAP-20B-SS06	SL2133-019
CHAAP-20B-SS06	SL2133-019P
CHAAP-20B-SS06	SL2133-019S
CHAAP-20B-SS102	SL2133-021
CHAAP-20B-SS104	SL2133-022

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Madison Ansmove

Date: 3/28/18 Title: Analyst

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB01-11

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.3 **Lab Sample ID:** SL2133-001

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15400			MS	5	7.4	0.37	3.0
7440-36-0	ANTIMONY, TOTAL	0.13			MS	5	0.074	0.015	0.037
7440-38-2	ARSENIC, TOTAL	6.10			MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	292			MS	5	0.15	0.027	0.074
7440-41-7	BERYLLIUM, TOTAL	0.881			MS	5	0.074	0.0030	0.015
7440-43-9	CADMIUM, TOTAL	0.169			MS	5	0.074	0.0056	0.015
7440-70-2	CALCIUM, TOTAL	8190			MS	5	7.4	2.8	6.0
7440-47-3	CHROMIUM, TOTAL	17.6			MS	5	0.37	0.036	0.30
7440-48-4	COBALT, TOTAL	4.93			MS	5	0.074	0.0041	0.022
7440-50-8	COPPER, TOTAL	14.4			MS	5	0.22	0.052	0.15
7439-89-6	IRON, TOTAL	18100			MS	5	7.4	1.8	4.5
7439-92-1	LEAD, TOTAL	13.3			MS	5	0.074	0.0052	0.037
7439-95-4	MAGNESIUM, TOTAL	6360			MS	5	7.4	1.0	6.0
7439-96-5	MANGANESE, TOTAL	339			MS	5	0.15	0.031	0.074
7439-97-6	MERCURY, TOTAL	0.019	J		CV	1	0.033	0.0051	0.017
7440-02-0	NICKEL, TOTAL	15.2			MS	5	0.15	0.020	0.089
7440-09-7	POTASSIUM, TOTAL	3300			MS	5	74	3.4	30
7782-49-2	SELENIUM, TOTAL	0.456			MS	5	0.37	0.029	0.22
7440-22-4	SILVER, TOTAL	0.0802			MS	5	0.074	0.0048	0.030
7440-23-5	SODIUM, TOTAL	443			MS	5	74	1.9	30
7440-28-0	THALLIUM, TOTAL	0.278			MS	5	0.074	0.0071	0.030
7440-62-2	VANADIUM, TOTAL	31.2			MS	5	0.37	0.082	0.30
7440-66-6	ZINC, TOTAL	52.2			MS	5	0.74	0.097	0.60

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB01-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.5 **Lab Sample ID:** SL2133-002

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	18300			MS	5	8.9	0.45	3.6
7440-36-0	ANTIMONY, TOTAL	0.16			MS	5	0.089	0.018	0.045
7440-38-2	ARSENIC, TOTAL	1.59			MS	5	0.45	0.13	0.36
7440-39-3	BARIUM, TOTAL	286			MS	5	0.18	0.033	0.089
7440-41-7	BERYLLIUM, TOTAL	0.892			MS	5	0.089	0.0036	0.018
7440-43-9	CADMIUM, TOTAL	0.027	J		MS	5	0.089	0.0067	0.018
7440-70-2	CALCIUM, TOTAL	11500			MS	5	8.9	3.4	7.1
7440-47-3	CHROMIUM, TOTAL	17.1			MS	5	0.45	0.044	0.36
7440-48-4	COBALT, TOTAL	6.30			MS	5	0.089	0.0049	0.027
7440-50-8	COPPER, TOTAL	12.2			MS	5	0.27	0.062	0.18
7439-89-6	IRON, TOTAL	14800			MS	5	8.9	2.1	5.4
7439-92-1	LEAD, TOTAL	11.6			MS	5	0.089	0.0062	0.045
7439-95-4	MAGNESIUM, TOTAL	7240			MS	5	8.9	1.2	7.1
7439-96-5	MANGANESE, TOTAL	234			MS	5	0.18	0.037	0.089
7439-97-6	MERCURY, TOTAL	0.021	J		CV	1	0.034	0.0053	0.018
7440-02-0	NICKEL, TOTAL	13.6			MS	5	0.18	0.024	0.11
7440-09-7	POTASSIUM, TOTAL	4250			MS	5	89	4.1	36
7782-49-2	SELENIUM, TOTAL	0.396	J		MS	5	0.45	0.035	0.27
7440-22-4	SILVER, TOTAL	0.0783	J		MS	5	0.089	0.0058	0.036
7440-23-5	SODIUM, TOTAL	810			MS	5	89	2.3	36
7440-28-0	THALLIUM, TOTAL	0.318			MS	5	0.089	0.0085	0.036
7440-62-2	VANADIUM, TOTAL	32.4			MS	5	0.45	0.098	0.36
7440-66-6	ZINC, TOTAL	46.3			MS	5	0.89	0.12	0.71

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB01-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.0 **Lab Sample ID:** SL2133-003

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	16400			MS	5	9.6	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.13			MS	5	0.096	0.019	0.048
7440-38-2	ARSENIC, TOTAL	0.76			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	309			MS	5	0.19	0.035	0.096
7440-41-7	BERYLLIUM, TOTAL	0.871			MS	5	0.096	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.019	U		MS	5	0.096	0.0072	0.019
7440-70-2	CALCIUM, TOTAL	8720			MS	5	9.6	3.6	7.6
7440-47-3	CHROMIUM, TOTAL	15.7			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	3.95			MS	5	0.096	0.0053	0.029
7440-50-8	COPPER, TOTAL	12.0			MS	5	0.29	0.067	0.19
7439-89-6	IRON, TOTAL	13200			MS	5	9.6	2.3	5.7
7439-92-1	LEAD, TOTAL	10.5			MS	5	0.096	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	7460			MS	5	9.6	1.3	7.6
7439-96-5	MANGANESE, TOTAL	84.5			MS	5	0.19	0.040	0.096
7439-97-6	MERCURY, TOTAL	0.022	J		CV	1	0.039	0.0060	0.020
7440-02-0	NICKEL, TOTAL	11.2			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	3650			MS	5	96	4.4	38
7782-49-2	SELENIUM, TOTAL	0.403	J		MS	5	0.48	0.037	0.29
7440-22-4	SILVER, TOTAL	0.0802	J		MS	5	0.096	0.0062	0.038
7440-23-5	SODIUM, TOTAL	545			MS	5	96	2.4	38
7440-28-0	THALLIUM, TOTAL	0.303			MS	5	0.096	0.0091	0.038
7440-62-2	VANADIUM, TOTAL	28.4			MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	42.8			MS	5	0.96	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB02-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 80.7 **Lab Sample ID:** SL2133-004

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15300			MS	5	7.9	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.167			MS	5	0.079	0.016	0.040
7440-38-2	ARSENIC, TOTAL	2.20			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	243			MS	5	0.16	0.029	0.079
7440-41-7	BERYLLIUM, TOTAL	0.727			MS	5	0.079	0.0032	0.016
7440-43-9	CADMIUM, TOTAL	0.0808			MS	5	0.079	0.0060	0.016
7440-70-2	CALCIUM, TOTAL	96100		D	MS	10	16	6.0	13
7440-47-3	CHROMIUM, TOTAL	13.6			MS	5	0.40	0.039	0.32
7440-48-4	COBALT, TOTAL	5.22			MS	5	0.079	0.0044	0.024
7440-50-8	COPPER, TOTAL	8.54			MS	5	0.24	0.056	0.16
7439-89-6	IRON, TOTAL	12100			MS	5	7.9	1.9	4.8
7439-92-1	LEAD, TOTAL	9.65			MS	5	0.079	0.0056	0.040
7439-95-4	MAGNESIUM, TOTAL	9200			MS	5	7.9	1.1	6.4
7439-96-5	MANGANESE, TOTAL	240			MS	5	0.16	0.033	0.079
7439-97-6	MERCURY, TOTAL	0.023	J		CV	1	0.033	0.0051	0.017
7440-02-0	NICKEL, TOTAL	10.3			MS	5	0.16	0.021	0.095
7440-09-7	POTASSIUM, TOTAL	3520			MS	5	79	3.6	32
7782-49-2	SELENIUM, TOTAL	0.436			MS	5	0.40	0.031	0.24
7440-22-4	SILVER, TOTAL	0.0747	J		MS	5	0.079	0.0052	0.032
7440-23-5	SODIUM, TOTAL	195			MS	5	79	2.0	32
7440-28-0	THALLIUM, TOTAL	0.282			MS	5	0.079	0.0075	0.032
7440-62-2	VANADIUM, TOTAL	29.2			MS	5	0.40	0.087	0.32
7440-66-6	ZINC, TOTAL	33.3			MS	5	0.79	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB02-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 74.6 **Lab Sample ID:** SL2133-005

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	16000			MS	5	8.3	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.356			MS	5	0.083	0.017	0.042
7440-38-2	ARSENIC, TOTAL	47.4			MS	5	0.42	0.12	0.33
7440-39-3	BARIUM, TOTAL	388			MS	5	0.17	0.030	0.083
7440-41-7	BERYLLIUM, TOTAL	1.13			MS	5	0.083	0.0034	0.017
7440-43-9	CADMIUM, TOTAL	0.231			MS	5	0.083	0.0062	0.017
7440-70-2	CALCIUM, TOTAL	31900			MS	5	8.3	3.2	6.7
7440-47-3	CHROMIUM, TOTAL	17.9			MS	5	0.42	0.041	0.33
7440-48-4	COBALT, TOTAL	8.14			MS	5	0.083	0.0046	0.025
7440-50-8	COPPER, TOTAL	25.7			MS	5	0.25	0.058	0.17
7439-89-6	IRON, TOTAL	36300			MS	5	8.3	2.0	5.0
7439-92-1	LEAD, TOTAL	19.9			MS	5	0.083	0.0058	0.042
7439-95-4	MAGNESIUM, TOTAL	7540			MS	5	8.3	1.1	6.7
7439-96-5	MANGANESE, TOTAL	609			MS	5	0.17	0.035	0.083
7439-97-6	MERCURY, TOTAL	0.019	J		CV	1	0.039	0.0061	0.020
7440-02-0	NICKEL, TOTAL	14.6			MS	5	0.17	0.022	0.10
7440-09-7	POTASSIUM, TOTAL	3830			MS	5	83	3.8	33
7782-49-2	SELENIUM, TOTAL	0.656			MS	5	0.42	0.032	0.25
7440-22-4	SILVER, TOTAL	0.0872			MS	5	0.083	0.0054	0.033
7440-23-5	SODIUM, TOTAL	165			MS	5	83	2.1	33
7440-28-0	THALLIUM, TOTAL	0.328			MS	5	0.083	0.0079	0.033
7440-62-2	VANADIUM, TOTAL	76.9			MS	5	0.42	0.092	0.33
7440-66-6	ZINC, TOTAL	45.5			MS	5	0.83	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB03-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.0 **Lab Sample ID:** SL2133-006

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	18400			MS	5	11	0.55	4.4
7440-36-0	ANTIMONY, TOTAL	0.16			MS	5	0.11	0.022	0.054
7440-38-2	ARSENIC, TOTAL	5.22			MS	5	0.54	0.16	0.44
7440-39-3	BARIUM, TOTAL	232			MS	5	0.22	0.040	0.11
7440-41-7	BERYLLIUM, TOTAL	0.974			MS	5	0.11	0.0044	0.022
7440-43-9	CADMIUM, TOTAL	0.022	U		MS	5	0.11	0.0082	0.022
7440-70-2	CALCIUM, TOTAL	11400			MS	5	11	4.1	8.7
7440-47-3	CHROMIUM, TOTAL	17.1			MS	5	0.54	0.053	0.44
7440-48-4	COBALT, TOTAL	5.26			MS	5	0.11	0.0060	0.033
7440-50-8	COPPER, TOTAL	13.5			MS	5	0.33	0.076	0.22
7439-89-6	IRON, TOTAL	18500			MS	5	11	2.6	6.5
7439-92-1	LEAD, TOTAL	14.0			MS	5	0.11	0.0076	0.054
7439-95-4	MAGNESIUM, TOTAL	7670			MS	5	11	1.5	8.7
7439-96-5	MANGANESE, TOTAL	176			MS	5	0.22	0.046	0.11
7439-97-6	MERCURY, TOTAL	0.022	J		CV	1	0.040	0.0062	0.020
7440-02-0	NICKEL, TOTAL	11.4			MS	5	0.22	0.029	0.13
7440-09-7	POTASSIUM, TOTAL	4370			MS	5	110	5.0	44
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.54	0.043	0.33
7440-22-4	SILVER, TOTAL	0.0764	J		MS	5	0.11	0.0071	0.044
7440-23-5	SODIUM, TOTAL	804			MS	5	110	2.8	44
7440-28-0	THALLIUM, TOTAL	0.337			MS	5	0.11	0.010	0.044
7440-62-2	VANADIUM, TOTAL	35.2			MS	5	0.54	0.12	0.44
7440-66-6	ZINC, TOTAL	48.7			MS	5	1.1	0.14	0.87

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB03-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.1 **Lab Sample ID:** SL2133-007

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15900			MS	5	9.5	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.14			MS	5	0.095	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.82			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	319			MS	5	0.19	0.035	0.095
7440-41-7	BERYLLIUM, TOTAL	0.848			MS	5	0.095	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.036	J		MS	5	0.095	0.0071	0.019
7440-70-2	CALCIUM, TOTAL	14500			MS	5	9.5	3.6	7.6
7440-47-3	CHROMIUM, TOTAL	15.1			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	6.38			MS	5	0.095	0.0052	0.028
7440-50-8	COPPER, TOTAL	12.1			MS	5	0.28	0.067	0.19
7439-89-6	IRON, TOTAL	14600			MS	5	9.5	2.3	5.7
7439-92-1	LEAD, TOTAL	12.9			MS	5	0.095	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	6970			MS	5	9.5	1.3	7.6
7439-96-5	MANGANESE, TOTAL	222			MS	5	0.19	0.040	0.095
7439-97-6	MERCURY, TOTAL	0.021	J		CV	1	0.036	0.0056	0.018
7440-02-0	NICKEL, TOTAL	11.8			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	3480			MS	5	95	4.3	38
7782-49-2	SELENIUM, TOTAL	0.419	J		MS	5	0.48	0.037	0.28
7440-22-4	SILVER, TOTAL	0.0770	J		MS	5	0.095	0.0062	0.038
7440-23-5	SODIUM, TOTAL	547			MS	5	95	2.4	38
7440-28-0	THALLIUM, TOTAL	0.304			MS	5	0.095	0.0090	0.038
7440-62-2	VANADIUM, TOTAL	28.0			MS	5	0.48	0.10	0.38
7440-66-6	ZINC, TOTAL	46.0			MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB04-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.4 **Lab Sample ID:** SL2133-008

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	27800			MS	5	6.3	0.31	2.5
7440-36-0	ANTIMONY, TOTAL	0.379			MS	5	0.063	0.013	0.031
7440-38-2	ARSENIC, TOTAL	11.6			MS	5	0.31	0.094	0.25
7440-39-3	BARIUM, TOTAL	413			MS	5	0.12	0.023	0.063
7440-41-7	BERYLLIUM, TOTAL	1.24			MS	5	0.063	0.0025	0.012
7440-43-9	CADMIUM, TOTAL	0.012	U		MS	5	0.063	0.0047	0.012
7440-70-2	CALCIUM, TOTAL	78600		D	MS	10	12	4.8	10
7440-47-3	CHROMIUM, TOTAL	24.8			MS	5	0.31	0.031	0.25
7440-48-4	COBALT, TOTAL	6.80			MS	5	0.063	0.0034	0.019
7440-50-8	COPPER, TOTAL	15.4			MS	5	0.19	0.044	0.12
7439-89-6	IRON, TOTAL	22200			MS	5	6.3	1.5	3.8
7439-92-1	LEAD, TOTAL	16.3			MS	5	0.063	0.0044	0.031
7439-95-4	MAGNESIUM, TOTAL	11800			MS	5	6.3	0.85	5.0
7439-96-5	MANGANESE, TOTAL	148			MS	5	0.12	0.026	0.063
7439-97-6	MERCURY, TOTAL	0.023	J		CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	22.9			MS	5	0.12	0.017	0.075
7440-09-7	POTASSIUM, TOTAL	7430			MS	5	63	2.9	25
7782-49-2	SELENIUM, TOTAL	0.527			MS	5	0.31	0.024	0.19
7440-22-4	SILVER, TOTAL	0.126			MS	5	0.063	0.0041	0.025
7440-23-5	SODIUM, TOTAL	1060			MS	5	63	1.6	25
7440-28-0	THALLIUM, TOTAL	0.461			MS	5	0.063	0.0060	0.025
7440-62-2	VANADIUM, TOTAL	59.6			MS	5	0.31	0.069	0.25
7440-66-6	ZINC, TOTAL	60.4			MS	5	0.63	0.081	0.50

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB04-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.7 **Lab Sample ID:** SL2133-009

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	19000			MS	5	7.2	0.36	2.9
7440-36-0	ANTIMONY, TOTAL	0.198			MS	5	0.072	0.014	0.036
7440-38-2	ARSENIC, TOTAL	2.15			MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	233			MS	5	0.14	0.026	0.072
7440-41-7	BERYLLIUM, TOTAL	0.894			MS	5	0.072	0.0029	0.014
7440-43-9	CADMIUM, TOTAL	0.125			MS	5	0.072	0.0054	0.014
7440-70-2	CALCIUM, TOTAL	8630			MS	5	7.2	2.7	5.7
7440-47-3	CHROMIUM, TOTAL	19.2			MS	5	0.36	0.035	0.29
7440-48-4	COBALT, TOTAL	11.6			MS	5	0.072	0.0039	0.022
7440-50-8	COPPER, TOTAL	14.1			MS	5	0.22	0.050	0.14
7439-89-6	IRON, TOTAL	15500			MS	5	7.2	1.7	4.3
7439-92-1	LEAD, TOTAL	12.7			MS	5	0.072	0.0050	0.036
7439-95-4	MAGNESIUM, TOTAL	8130			MS	5	7.2	0.97	5.7
7439-96-5	MANGANESE, TOTAL	314			MS	5	0.14	0.030	0.072
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	16.3			MS	5	0.14	0.019	0.086
7440-09-7	POTASSIUM, TOTAL	3960			MS	5	72	3.3	29
7782-49-2	SELENIUM, TOTAL	0.522			MS	5	0.36	0.028	0.22
7440-22-4	SILVER, TOTAL	0.0980			MS	5	0.072	0.0047	0.029
7440-23-5	SODIUM, TOTAL	706			MS	5	72	1.8	29
7440-28-0	THALLIUM, TOTAL	0.325			MS	5	0.072	0.0068	0.029
7440-62-2	VANADIUM, TOTAL	35.5			MS	5	0.36	0.079	0.29
7440-66-6	ZINC, TOTAL	51.6			MS	5	0.72	0.093	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB05-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.5 **Lab Sample ID:** SL2133-010

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	17900			MS	5	7.0	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.276			MS	5	0.070	0.014	0.035
7440-38-2	ARSENIC, TOTAL	5.44			MS	5	0.35	0.11	0.28
7440-39-3	BARIUM, TOTAL	232			MS	5	0.14	0.026	0.070
7440-41-7	BERYLLIUM, TOTAL	0.951			MS	5	0.070	0.0029	0.014
7440-43-9	CADMIUM, TOTAL	0.0645	J		MS	5	0.070	0.0053	0.014
7440-70-2	CALCIUM, TOTAL	8810			MS	5	7.0	2.7	5.6
7440-47-3	CHROMIUM, TOTAL	16.0			MS	5	0.35	0.035	0.28
7440-48-4	COBALT, TOTAL	8.74			MS	5	0.070	0.0039	0.021
7440-50-8	COPPER, TOTAL	12.8			MS	5	0.21	0.049	0.14
7439-89-6	IRON, TOTAL	16800			MS	5	7.0	1.7	4.2
7439-92-1	LEAD, TOTAL	16.7			MS	5	0.070	0.0049	0.035
7439-95-4	MAGNESIUM, TOTAL	7760			MS	5	7.0	0.95	5.6
7439-96-5	MANGANESE, TOTAL	455			MS	5	0.14	0.030	0.070
7439-97-6	MERCURY, TOTAL	0.026	J		CV	1	0.042	0.0064	0.021
7440-02-0	NICKEL, TOTAL	17.9			MS	5	0.14	0.019	0.084
7440-09-7	POTASSIUM, TOTAL	4230			MS	5	70	3.2	28
7782-49-2	SELENIUM, TOTAL	0.432			MS	5	0.35	0.027	0.21
7440-22-4	SILVER, TOTAL	0.0782			MS	5	0.070	0.0046	0.028
7440-23-5	SODIUM, TOTAL	1180			MS	5	70	1.8	28
7440-28-0	THALLIUM, TOTAL	0.356			MS	5	0.070	0.0067	0.028
7440-62-2	VANADIUM, TOTAL	34.0			MS	5	0.35	0.078	0.28
7440-66-6	ZINC, TOTAL	44.4			MS	5	0.70	0.092	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB05-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 76.2 **Lab Sample ID:** SL2133-011

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15200			MS	5	7.8	0.39	3.1
7440-36-0	ANTIMONY, TOTAL	0.181			MS	5	0.078	0.016	0.039
7440-38-2	ARSENIC, TOTAL	1.98			MS	5	0.39	0.12	0.31
7440-39-3	BARIUM, TOTAL	284			MS	5	0.16	0.028	0.078
7440-41-7	BERYLLIUM, TOTAL	0.852			MS	5	0.078	0.0032	0.016
7440-43-9	CADMIUM, TOTAL	0.166			MS	5	0.078	0.0059	0.016
7440-70-2	CALCIUM, TOTAL	11100			MS	5	7.8	3.0	6.2
7440-47-3	CHROMIUM, TOTAL	14.5			MS	5	0.39	0.038	0.31
7440-48-4	COBALT, TOTAL	9.79			MS	5	0.078	0.0043	0.023
7440-50-8	COPPER, TOTAL	12.1			MS	5	0.23	0.055	0.16
7439-89-6	IRON, TOTAL	15200			MS	5	7.8	1.9	4.7
7439-92-1	LEAD, TOTAL	13.6			MS	5	0.078	0.0055	0.039
7439-95-4	MAGNESIUM, TOTAL	7780			MS	5	7.8	1.1	6.2
7439-96-5	MANGANESE, TOTAL	361			MS	5	0.16	0.033	0.078
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	18.6			MS	5	0.16	0.021	0.094
7440-09-7	POTASSIUM, TOTAL	3520			MS	5	78	3.6	31
7782-49-2	SELENIUM, TOTAL	0.434			MS	5	0.39	0.030	0.23
7440-22-4	SILVER, TOTAL	0.0712	J		MS	5	0.078	0.0051	0.031
7440-23-5	SODIUM, TOTAL	714			MS	5	78	2.0	31
7440-28-0	THALLIUM, TOTAL	0.315			MS	5	0.078	0.0074	0.031
7440-62-2	VANADIUM, TOTAL	27.8			MS	5	0.39	0.086	0.31
7440-66-6	ZINC, TOTAL	41.2			MS	5	0.78	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB06-4

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.1 **Lab Sample ID:** SL2133-012

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	22300			MS	5	6.3	0.31	2.5
7440-36-0	ANTIMONY, TOTAL	0.272			MS	5	0.063	0.013	0.031
7440-38-2	ARSENIC, TOTAL	3.86			MS	5	0.31	0.094	0.25
7440-39-3	BARIUM, TOTAL	208			MS	5	0.12	0.023	0.063
7440-41-7	BERYLLIUM, TOTAL	1.12			MS	5	0.063	0.0025	0.012
7440-43-9	CADMIUM, TOTAL	0.0071	J		MS	5	0.063	0.0047	0.012
7440-70-2	CALCIUM, TOTAL	19900			MS	5	6.3	2.4	5.0
7440-47-3	CHROMIUM, TOTAL	21.9			MS	5	0.31	0.031	0.25
7440-48-4	COBALT, TOTAL	8.50			MS	5	0.063	0.0035	0.019
7440-50-8	COPPER, TOTAL	14.9			MS	5	0.19	0.044	0.12
7439-89-6	IRON, TOTAL	19900			MS	5	6.3	1.5	3.8
7439-92-1	LEAD, TOTAL	13.2			MS	5	0.063	0.0044	0.031
7439-95-4	MAGNESIUM, TOTAL	7860			MS	5	6.3	0.85	5.0
7439-96-5	MANGANESE, TOTAL	308			MS	5	0.12	0.026	0.063
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	24.8			MS	5	0.12	0.017	0.075
7440-09-7	POTASSIUM, TOTAL	5420			MS	5	63	2.9	25
7782-49-2	SELENIUM, TOTAL	0.491			MS	5	0.31	0.025	0.19
7440-22-4	SILVER, TOTAL	0.0960			MS	5	0.063	0.0041	0.025
7440-23-5	SODIUM, TOTAL	202			MS	5	63	1.6	25
7440-28-0	THALLIUM, TOTAL	0.377			MS	5	0.063	0.0060	0.025
7440-62-2	VANADIUM, TOTAL	42.4			MS	5	0.31	0.069	0.25
7440-66-6	ZINC, TOTAL	58.9			MS	5	0.63	0.082	0.50

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SB06-8

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 75.2 **Lab Sample ID:** SL2133-013

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	18300			MS	5	8.6	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.183			MS	5	0.086	0.017	0.043
7440-38-2	ARSENIC, TOTAL	2.56			MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	282			MS	5	0.17	0.031	0.086
7440-41-7	BERYLLIUM, TOTAL	0.922			MS	5	0.086	0.0035	0.017
7440-43-9	CADMIUM, TOTAL	0.017	U		MS	5	0.086	0.0064	0.017
7440-70-2	CALCIUM, TOTAL	18100			MS	5	8.6	3.3	6.9
7440-47-3	CHROMIUM, TOTAL	18.6			MS	5	0.43	0.042	0.34
7440-48-4	COBALT, TOTAL	4.71			MS	5	0.086	0.0047	0.026
7440-50-8	COPPER, TOTAL	13.8			MS	5	0.26	0.060	0.17
7439-89-6	IRON, TOTAL	16400			MS	5	8.6	2.1	5.1
7439-92-1	LEAD, TOTAL	12.4			MS	5	0.086	0.0060	0.043
7439-95-4	MAGNESIUM, TOTAL	8080			MS	5	8.6	1.2	6.9
7439-96-5	MANGANESE, TOTAL	165			MS	5	0.17	0.036	0.086
7439-97-6	MERCURY, TOTAL	0.020	J		CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	12.1			MS	5	0.17	0.023	0.10
7440-09-7	POTASSIUM, TOTAL	4150			MS	5	86	3.9	34
7782-49-2	SELENIUM, TOTAL	0.432			MS	5	0.43	0.033	0.26
7440-22-4	SILVER, TOTAL	0.0978			MS	5	0.086	0.0056	0.034
7440-23-5	SODIUM, TOTAL	171			MS	5	86	2.2	34
7440-28-0	THALLIUM, TOTAL	0.321			MS	5	0.086	0.0081	0.034
7440-62-2	VANADIUM, TOTAL	34.6			MS	5	0.43	0.094	0.34
7440-66-6	ZINC, TOTAL	48.9			MS	5	0.86	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS01

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 84.6 **Lab Sample ID:** SL2133-014

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	14200			MS	5	8.6	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.16			MS	5	0.086	0.017	0.043
7440-38-2	ARSENIC, TOTAL	2.88			MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	158			MS	5	0.17	0.031	0.086
7440-41-7	BERYLLIUM, TOTAL	0.703			MS	5	0.086	0.0035	0.017
7440-43-9	CADMIUM, TOTAL	0.0666	J		MS	5	0.086	0.0064	0.017
7440-70-2	CALCIUM, TOTAL	2740			MS	5	8.6	3.3	6.8
7440-47-3	CHROMIUM, TOTAL	11.8			MS	5	0.43	0.042	0.34
7440-48-4	COBALT, TOTAL	4.57			MS	5	0.086	0.0047	0.026
7440-50-8	COPPER, TOTAL	8.23			MS	5	0.26	0.060	0.17
7439-89-6	IRON, TOTAL	11700			MS	5	8.6	2.1	5.1
7439-92-1	LEAD, TOTAL	9.94			MS	5	0.086	0.0060	0.043
7439-95-4	MAGNESIUM, TOTAL	3590			MS	5	8.6	1.2	6.8
7439-96-5	MANGANESE, TOTAL	206			MS	5	0.17	0.036	0.086
7439-97-6	MERCURY, TOTAL	0.010	J		CV	1	0.037	0.0057	0.019
7440-02-0	NICKEL, TOTAL	9.78			MS	5	0.17	0.023	0.10
7440-09-7	POTASSIUM, TOTAL	3680			MS	5	86	3.9	34
7782-49-2	SELENIUM, TOTAL	0.406	J		MS	5	0.43	0.033	0.26
7440-22-4	SILVER, TOTAL	0.0695	J		MS	5	0.086	0.0056	0.034
7440-23-5	SODIUM, TOTAL	91.2			MS	5	86	2.2	34
7440-28-0	THALLIUM, TOTAL	0.231			MS	5	0.086	0.0081	0.034
7440-62-2	VANADIUM, TOTAL	23.6			MS	5	0.43	0.094	0.34
7440-66-6	ZINC, TOTAL	32.7			MS	5	0.86	0.11	0.68

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS02

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 80.5 **Lab Sample ID:** SL2133-015

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12800			MS	5	8.7	0.43	3.5
7440-36-0	ANTIMONY, TOTAL	0.243			MS	5	0.087	0.017	0.043
7440-38-2	ARSENIC, TOTAL	2.43			MS	5	0.43	0.13	0.35
7440-39-3	BARIUM, TOTAL	169			MS	5	0.17	0.032	0.087
7440-41-7	BERYLLIUM, TOTAL	0.671			MS	5	0.087	0.0035	0.017
7440-43-9	CADMIUM, TOTAL	2.93			MS	5	0.087	0.0065	0.017
7440-70-2	CALCIUM, TOTAL	3930			MS	5	8.7	3.3	6.9
7440-47-3	CHROMIUM, TOTAL	12.6			MS	5	0.43	0.043	0.35
7440-48-4	COBALT, TOTAL	4.75			MS	5	0.087	0.0048	0.026
7440-50-8	COPPER, TOTAL	23.0			MS	5	0.26	0.061	0.17
7439-89-6	IRON, TOTAL	10700			MS	5	8.7	2.1	5.2
7439-92-1	LEAD, TOTAL	21.2			MS	5	0.087	0.0061	0.043
7439-95-4	MAGNESIUM, TOTAL	3590			MS	5	8.7	1.2	6.9
7439-96-5	MANGANESE, TOTAL	218			MS	5	0.17	0.036	0.087
7439-97-6	MERCURY, TOTAL	0.165			CV	1	0.031	0.0048	0.016
7440-02-0	NICKEL, TOTAL	10.2			MS	5	0.17	0.023	0.10
7440-09-7	POTASSIUM, TOTAL	4250			MS	5	87	4.0	35
7782-49-2	SELENIUM, TOTAL	0.447			MS	5	0.43	0.034	0.26
7440-22-4	SILVER, TOTAL	0.221			MS	5	0.087	0.0056	0.035
7440-23-5	SODIUM, TOTAL	89.9			MS	5	87	2.2	35
7440-28-0	THALLIUM, TOTAL	0.228			MS	5	0.087	0.0083	0.035
7440-62-2	VANADIUM, TOTAL	20.3			MS	5	0.43	0.096	0.35
7440-66-6	ZINC, TOTAL	56.3			MS	5	0.87	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS03

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.2 **Lab Sample ID:** SL2133-016

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	17000			MS	5	9.4	0.47	3.8
7440-36-0	ANTIMONY, TOTAL	0.494			MS	5	0.094	0.019	0.047
7440-38-2	ARSENIC, TOTAL	2.93			MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	202			MS	5	0.19	0.034	0.094
7440-41-7	BERYLLIUM, TOTAL	0.803			MS	5	0.094	0.0038	0.019
7440-43-9	CADMIUM, TOTAL	9.59			MS	5	0.094	0.0070	0.019
7440-70-2	CALCIUM, TOTAL	3290			MS	5	9.4	3.6	7.5
7440-47-3	CHROMIUM, TOTAL	18.2			MS	5	0.47	0.046	0.38
7440-48-4	COBALT, TOTAL	6.64			MS	5	0.094	0.0052	0.028
7440-50-8	COPPER, TOTAL	34.0			MS	5	0.28	0.066	0.19
7439-89-6	IRON, TOTAL	13000			MS	5	9.4	2.3	5.6
7439-92-1	LEAD, TOTAL	51.6			MS	5	0.094	0.0066	0.047
7439-95-4	MAGNESIUM, TOTAL	4920			MS	5	9.4	1.3	7.5
7439-96-5	MANGANESE, TOTAL	274			MS	5	0.19	0.039	0.094
7439-97-6	MERCURY, TOTAL	0.487			CV	1	0.038	0.0059	0.019
7440-02-0	NICKEL, TOTAL	13.8			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	5920			MS	5	94	4.3	38
7782-49-2	SELENIUM, TOTAL	0.534			MS	5	0.47	0.037	0.28
7440-22-4	SILVER, TOTAL	0.456			MS	5	0.094	0.0061	0.038
7440-23-5	SODIUM, TOTAL	198			MS	5	94	2.4	38
7440-28-0	THALLIUM, TOTAL	0.259			MS	5	0.094	0.0089	0.038
7440-62-2	VANADIUM, TOTAL	25.7			MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	87.4			MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS04

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.3 **Lab Sample ID:** SL2133-017

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12900			MS	5	10	0.52	4.2
7440-36-0	ANTIMONY, TOTAL	0.19			MS	5	0.10	0.021	0.052
7440-38-2	ARSENIC, TOTAL	2.20			MS	5	0.52	0.16	0.42
7440-39-3	BARIUM, TOTAL	137			MS	5	0.21	0.038	0.10
7440-41-7	BERYLLIUM, TOTAL	0.588			MS	5	0.10	0.0042	0.021
7440-43-9	CADMIUM, TOTAL	0.358			MS	5	0.10	0.0079	0.021
7440-70-2	CALCIUM, TOTAL	2400			MS	5	10	4.0	8.4
7440-47-3	CHROMIUM, TOTAL	11.2			MS	5	0.52	0.051	0.42
7440-48-4	COBALT, TOTAL	4.65			MS	5	0.10	0.0058	0.031
7440-50-8	COPPER, TOTAL	16.7			MS	5	0.31	0.073	0.21
7439-89-6	IRON, TOTAL	9750			MS	5	10	2.5	6.3
7439-92-1	LEAD, TOTAL	13.3			MS	5	0.10	0.0073	0.052
7439-95-4	MAGNESIUM, TOTAL	3560			MS	5	10	1.4	8.4
7439-96-5	MANGANESE, TOTAL	208			MS	5	0.21	0.044	0.10
7439-97-6	MERCURY, TOTAL	0.051			CV	1	0.035	0.0055	0.018
7440-02-0	NICKEL, TOTAL	8.79			MS	5	0.21	0.028	0.12
7440-09-7	POTASSIUM, TOTAL	4440			MS	5	100	4.8	42
7782-49-2	SELENIUM, TOTAL	0.502	J		MS	5	0.52	0.041	0.31
7440-22-4	SILVER, TOTAL	0.244			MS	5	0.10	0.0068	0.042
7440-23-5	SODIUM, TOTAL	108			MS	5	100	2.7	42
7440-28-0	THALLIUM, TOTAL	0.202			MS	5	0.10	0.0099	0.042
7440-62-2	VANADIUM, TOTAL	20.9			MS	5	0.52	0.12	0.42
7440-66-6	ZINC, TOTAL	39.6			MS	5	1.0	0.14	0.84

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS05

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 77.0 **Lab Sample ID:** SL2133-018

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	14100			MS	5	9.6	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.203			MS	5	0.096	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.47			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	154			MS	5	0.19	0.035	0.096
7440-41-7	BERYLLIUM, TOTAL	0.688			MS	5	0.096	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	0.158			MS	5	0.096	0.0072	0.019
7440-70-2	CALCIUM, TOTAL	2540			MS	5	9.6	3.7	7.7
7440-47-3	CHROMIUM, TOTAL	12.2			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	5.05			MS	5	0.096	0.0053	0.029
7440-50-8	COPPER, TOTAL	9.96			MS	5	0.29	0.067	0.19
7439-89-6	IRON, TOTAL	11100			MS	5	9.6	2.3	5.8
7439-92-1	LEAD, TOTAL	13.0			MS	5	0.096	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	4200			MS	5	9.6	1.3	7.7
7439-96-5	MANGANESE, TOTAL	243			MS	5	0.19	0.040	0.096
7439-97-6	MERCURY, TOTAL	0.019	J		CV	1	0.033	0.0052	0.017
7440-02-0	NICKEL, TOTAL	10.0			MS	5	0.19	0.025	0.12
7440-09-7	POTASSIUM, TOTAL	5010			MS	5	96	4.4	38
7782-49-2	SELENIUM, TOTAL	0.504			MS	5	0.48	0.037	0.29
7440-22-4	SILVER, TOTAL	0.177			MS	5	0.096	0.0062	0.038
7440-23-5	SODIUM, TOTAL	196			MS	5	96	2.5	38
7440-28-0	THALLIUM, TOTAL	0.251			MS	5	0.096	0.0091	0.038
7440-62-2	VANADIUM, TOTAL	22.6			MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	35.6			MS	5	0.96	0.12	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14100		NA	MS	5	8.0	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.275		N	MS	5	0.080	0.016	0.040
7440-38-2	ARSENIC, TOTAL	2.45			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	206		NA	MS	5	0.16	0.029	0.080
7440-41-7	BERYLLIUM, TOTAL	0.726			MS	5	0.080	0.0032	0.016
7440-43-9	CADMIUM, TOTAL	2.46		E	MS	5	0.080	0.0060	0.016
7440-70-2	CALCIUM, TOTAL	4790		NA	MS	5	8.0	3.0	6.4
7440-47-3	CHROMIUM, TOTAL	13.5			MS	5	0.40	0.039	0.32
7440-48-4	COBALT, TOTAL	5.20		E	MS	5	0.080	0.0044	0.024
7440-50-8	COPPER, TOTAL	47.6		EA	MS	5	0.24	0.056	0.16
7439-89-6	IRON, TOTAL	11900		NEA	MS	5	8.0	1.9	4.8
7439-92-1	LEAD, TOTAL	29.2		A	MS	5	0.080	0.0056	0.040
7439-95-4	MAGNESIUM, TOTAL	4110		NA	MS	5	8.0	1.1	6.4
7439-96-5	MANGANESE, TOTAL	229		NEA	MS	5	0.16	0.033	0.080
7439-97-6	MERCURY, TOTAL	0.362		NA	CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	11.2		E	MS	5	0.16	0.021	0.096
7440-09-7	POTASSIUM, TOTAL	4860		N	MS	5	80	3.6	32
7782-49-2	SELENIUM, TOTAL	0.494			MS	5	0.40	0.031	0.24
7440-22-4	SILVER, TOTAL	0.249			MS	5	0.080	0.0052	0.032
7440-23-5	SODIUM, TOTAL	94.0			MS	5	80	2.0	32
7440-28-0	THALLIUM, TOTAL	0.246			MS	5	0.080	0.0076	0.032
7440-62-2	VANADIUM, TOTAL	21.4		E	MS	5	0.40	0.088	0.32
7440-66-6	ZINC, TOTAL	88.7		E	MS	5	0.80	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-EB-031518

Matrix: WATER **SDG Name:** SL2133

Percent Solids: 0.00 **Lab Sample ID:** SL2133-020

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12	J		MS	5	100	4.4	40
7440-36-0	ANTIMONY, TOTAL	0.13	J		MS	5	1.0	0.055	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.3	4.0
7440-39-3	BARIUM, TOTAL	1.0	U		MS	5	2.0	0.27	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.034	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.029	0.20
7440-70-2	CALCIUM, TOTAL	82	J		MS	5	100	21	80
7440-47-3	CHROMIUM, TOTAL	0.72	J		MS	5	5.0	0.22	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.060	0.30
7440-50-8	COPPER, TOTAL	0.20	J		MS	5	3.0	0.19	2.0
7439-89-6	IRON, TOTAL	31	J		MS	5	100	13	60
7439-92-1	LEAD, TOTAL	0.50	U		MS	5	1.0	0.075	0.50
7439-95-4	MAGNESIUM, TOTAL	13	J		MS	5	100	8.0	80
7439-96-5	MANGANESE, TOTAL	0.69	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.013	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	31	400
7782-49-2	SELENIUM, TOTAL	1.0	J		MS	5	5.0	0.19	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.050	0.40
7440-23-5	SODIUM, TOTAL	43	J		MS	5	1000	19	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.060	0.40
7440-62-2	VANADIUM, TOTAL	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.9	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS102

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 81.4 **Lab Sample ID:** SL2133-021

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12900			MS	5	9.5	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.218			MS	5	0.095	0.019	0.048
7440-38-2	ARSENIC, TOTAL	2.79			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	165			MS	5	0.19	0.035	0.095
7440-41-7	BERYLLIUM, TOTAL	0.648			MS	5	0.095	0.0039	0.019
7440-43-9	CADMIUM, TOTAL	2.49			MS	5	0.095	0.0071	0.019
7440-70-2	CALCIUM, TOTAL	3260			MS	5	9.5	3.6	7.6
7440-47-3	CHROMIUM, TOTAL	13.2			MS	5	0.48	0.047	0.38
7440-48-4	COBALT, TOTAL	5.09			MS	5	0.095	0.0052	0.028
7440-50-8	COPPER, TOTAL	20.5			MS	5	0.28	0.067	0.19
7439-89-6	IRON, TOTAL	11000			MS	5	9.5	2.3	5.7
7439-92-1	LEAD, TOTAL	22.5			MS	5	0.095	0.0067	0.048
7439-95-4	MAGNESIUM, TOTAL	3500			MS	5	9.5	1.3	7.6
7439-96-5	MANGANESE, TOTAL	246			MS	5	0.19	0.040	0.095
7439-97-6	MERCURY, TOTAL	0.172			CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	9.77			MS	5	0.19	0.025	0.11
7440-09-7	POTASSIUM, TOTAL	4220			MS	5	95	4.3	38
7782-49-2	SELENIUM, TOTAL	0.494			MS	5	0.48	0.037	0.28
7440-22-4	SILVER, TOTAL	0.182			MS	5	0.095	0.0062	0.038
7440-23-5	SODIUM, TOTAL	94.6	J		MS	5	95	2.4	38
7440-28-0	THALLIUM, TOTAL	0.227			MS	5	0.095	0.0091	0.038
7440-62-2	VANADIUM, TOTAL	21.9			MS	5	0.48	0.10	0.38
7440-66-6	ZINC, TOTAL	51.1			MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS104

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 79.0 **Lab Sample ID:** SL2133-022

Concentration Units : mg/Kg drywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12500			MS	5	8.3	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.187			MS	5	0.083	0.017	0.042
7440-38-2	ARSENIC, TOTAL	2.14			MS	5	0.42	0.12	0.33
7440-39-3	BARIUM, TOTAL	147			MS	5	0.17	0.030	0.083
7440-41-7	BERYLLIUM, TOTAL	0.633			MS	5	0.083	0.0034	0.017
7440-43-9	CADMIUM, TOTAL	0.450			MS	5	0.083	0.0062	0.017
7440-70-2	CALCIUM, TOTAL	2520			MS	5	8.3	3.2	6.6
7440-47-3	CHROMIUM, TOTAL	11.5			MS	5	0.42	0.041	0.33
7440-48-4	COBALT, TOTAL	5.02			MS	5	0.083	0.0046	0.025
7440-50-8	COPPER, TOTAL	17.8			MS	5	0.25	0.058	0.17
7439-89-6	IRON, TOTAL	10400			MS	5	8.3	2.0	5.0
7439-92-1	LEAD, TOTAL	14.1			MS	5	0.083	0.0058	0.042
7439-95-4	MAGNESIUM, TOTAL	3900			MS	5	8.3	1.1	6.6
7439-96-5	MANGANESE, TOTAL	244			MS	5	0.17	0.035	0.083
7439-97-6	MERCURY, TOTAL	0.029	J		CV	1	0.037	0.0058	0.019
7440-02-0	NICKEL, TOTAL	9.55			MS	5	0.17	0.022	0.10
7440-09-7	POTASSIUM, TOTAL	4680			MS	5	83	3.8	33
7782-49-2	SELENIUM, TOTAL	0.451			MS	5	0.42	0.032	0.25
7440-22-4	SILVER, TOTAL	0.242			MS	5	0.083	0.0054	0.033
7440-23-5	SODIUM, TOTAL	107			MS	5	83	2.1	33
7440-28-0	THALLIUM, TOTAL	0.234			MS	5	0.083	0.0079	0.033
7440-62-2	VANADIUM, TOTAL	20.5			MS	5	0.42	0.092	0.33
7440-66-6	ZINC, TOTAL	43.5			MS	5	0.83	0.11	0.66

Comments:

QC Summary Section

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: HLC20A Mar 20, 2018 9:27

Analyte	True	Found	%R (1)
MERCURY	6.0	5.98	99.7

SAMPLE: CCV

File: HLC20A Mar 20, 2018 9:33

Analyte	True	Found	%R (1)
MERCURY	5.0	4.96	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20A Mar 20, 2018 10:00

Analyte	True	Found	%R (1)
MERCURY	5.0	5.13	102.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: HLC20B Mar 20, 2018 12:02

Analyte	True	Found	%R (1)
MERCURY	6.0	5.91	98.5

SAMPLE: CCV

File: HLC20B Mar 20, 2018 12:09

Analyte	True	Found	%R (1)
MERCURY	5.0	4.65	93.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20B Mar 20, 2018 12:28

Analyte	True	Found	%R (1)
MERCURY	5.0	5.33	106.6

SAMPLE: CCV

File: HLC20B Mar 20, 2018 12:56

Analyte	True	Found	%R (1)
MERCURY	5.0	5.39	107.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20B Mar 20, 2018 13:20

Analyte	True	Found	%R (1)
MERCURY	5.0	4.59	91.8

SAMPLE: CCV

File: HLC20B Mar 20, 2018 13:47

Analyte	True	Found	%R (1)
MERCURY	5.0	4.98	99.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC20B Mar 20, 2018 14:11

Analyte	True	Found	%R (1)
MERCURY	5.0	4.71	94.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: HLC22A Mar 22, 2018 10:18

Analyte	True	Found	%R (1)
MERCURY	6.0	5.89	98.2

SAMPLE: CCV

File: HLC22A Mar 22, 2018 10:25

Analyte	True	Found	%R (1)
MERCURY	5.0	4.86	97.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: HLC22A Mar 22, 2018 10:53

Analyte	True	Found	%R (1)
MERCURY	5.0	4.53	90.6

SAMPLE: CCV

File: HLC22A Mar 22, 2018 11:21

Analyte	True	Found	%R (1)
MERCURY	5.0	4.96	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC20C Mar 20, 2018 17:33

Analyte	True	Found	%R (1)
ALUMINUM	400.0	390.20	97.5
ANTIMONY	20.0	19.96	99.8
ARSENIC	20.0	20.09	100.4
BARIUM	20.0	20.22	101.1
BERYLLIUM	20.0	19.93	99.6
CADMIUM	20.0	20.45	102.3
CALCIUM	4000.0	4082.00	102.1
CHROMIUM	20.0	19.88	99.4
COBALT	20.0	20.16	100.8
COPPER	20.0	20.13	100.6
IRON	4000.0	4081.00	102.0
LEAD	20.0	19.80	99.0
MAGNESIUM	4000.0	3976.00	99.4
MANGANESE	20.0	19.96	99.8
MOLYBDENUM	40.0	39.30	98.3
NICKEL	20.0	20.31	101.5
POTASSIUM	4000.0	3895.00	97.4
SELENIUM	20.0	20.25	101.3
SILVER	20.0	20.10	100.5
SODIUM	4000.0	3961.00	99.0
THALLIUM	20.0	19.99	99.9
VANADIUM	20.0	20.11	100.6
ZINC	20.0	20.82	104.1

SAMPLE: CCV

File: JLC20C Mar 20, 2018 18:17

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.50	96.9
ANTIMONY	25.0	24.95	99.8
ARSENIC	25.0	25.03	100.1
BARIUM	25.0	25.45	101.8
BERYLLIUM	25.0	25.10	100.4
CADMIUM	25.0	25.59	102.4
CALCIUM	5000.0	5088.00	101.8
CHROMIUM	25.0	24.93	99.7
COBALT	25.0	24.92	99.7
COPPER	25.0	25.06	100.2
IRON	5000.0	5113.00	102.3
LEAD	25.0	24.69	98.8
MAGNESIUM	5000.0	4945.00	98.9
MANGANESE	25.0	24.82	99.3
MOLYBDENUM	25.0	25.31	101.2
NICKEL	25.0	25.08	100.3
POTASSIUM	5000.0	4901.00	98.0
SELENIUM	25.0	25.69	102.8
SILVER	25.0	25.66	102.6
SODIUM	5000.0	4913.00	98.3
THALLIUM	25.0	24.65	98.6
VANADIUM	25.0	24.69	98.8
ZINC	25.0	25.08	100.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC20C Mar 20, 2018 19:06

Analyte	True	Found	%R (1)
ALUMINUM	500.0	483.90	96.8
ANTIMONY	25.0	25.19	100.8
ARSENIC	25.0	24.87	99.5
BARIUM	25.0	25.80	103.2
BERYLLIUM	25.0	24.82	99.3
CADMIUM	25.0	25.11	100.4
CALCIUM	5000.0	5097.00	101.9
CHROMIUM	25.0	24.80	99.2
COBALT	25.0	25.00	100.0
COPPER	25.0	24.76	99.0
IRON	5000.0	5095.00	101.9
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	4897.00	97.9
MANGANESE	25.0	24.63	98.5
MOLYBDENUM	25.0	25.11	100.4
NICKEL	25.0	25.25	101.0
POTASSIUM	5000.0	4910.00	98.2
SELENIUM	25.0	25.11	100.4
SILVER	25.0	25.27	101.1
SODIUM	5000.0	4849.00	97.0
THALLIUM	25.0	24.70	98.8
VANADIUM	25.0	24.98	99.9
ZINC	25.0	24.81	99.2

SAMPLE: CCV

File: JLC20C Mar 20, 2018 19:56

Analyte	True	Found	%R (1)
ALUMINUM	500.0	486.70	97.3
ANTIMONY	25.0	24.98	99.9
ARSENIC	25.0	24.45	97.8
BARIUM	25.0	25.28	101.1
BERYLLIUM	25.0	24.80	99.2
CADMIUM	25.0	24.72	98.9
CALCIUM	5000.0	5108.00	102.2
CHROMIUM	25.0	24.78	99.1
COBALT	25.0	24.76	99.0
COPPER	25.0	24.69	98.8
IRON	5000.0	5088.00	101.8
LEAD	25.0	24.66	98.6
MAGNESIUM	5000.0	4972.00	99.4
MANGANESE	25.0	24.62	98.5
MOLYBDENUM	25.0	24.73	98.9
NICKEL	25.0	25.07	100.3
POTASSIUM	5000.0	4950.00	99.0
SELENIUM	25.0	24.34	97.4
SILVER	25.0	25.09	100.4
SODIUM	5000.0	4901.00	98.0
THALLIUM	25.0	24.47	97.9
VANADIUM	25.0	24.54	98.2
ZINC	25.0	24.77	99.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC20C Mar 20, 2018 20:47

Analyte	True	Found	%R (1)
ALUMINUM	500.0	486.90	97.4
ANTIMONY	25.0	25.06	100.2
ARSENIC	25.0	24.90	99.6
BARIUM	25.0	25.02	100.1
BERYLLIUM	25.0	24.51	98.0
CADMIUM	25.0	24.86	99.4
CALCIUM	5000.0	5103.00	102.1
CHROMIUM	25.0	24.62	98.5
COBALT	25.0	24.54	98.2
COPPER	25.0	24.85	99.4
IRON	5000.0	5065.00	101.3
LEAD	25.0	24.45	97.8
MAGNESIUM	5000.0	4923.00	98.5
MANGANESE	25.0	24.48	97.9
MOLYBDENUM	25.0	24.89	99.6
NICKEL	25.0	24.59	98.4
POTASSIUM	5000.0	4927.00	98.5
SELENIUM	25.0	25.01	100.0
SILVER	25.0	25.14	100.6
SODIUM	5000.0	4858.00	97.2
THALLIUM	25.0	24.37	97.5
VANADIUM	25.0	24.81	99.2
ZINC	25.0	24.53	98.1

SAMPLE: CCV

File: JLC20C Mar 20, 2018 21:37

Analyte	True	Found	%R (1)
ALUMINUM	500.0	487.40	97.5
ANTIMONY	25.0	25.04	100.2
ARSENIC	25.0	25.02	100.1
BARIUM	25.0	25.39	101.6
BERYLLIUM	25.0	24.66	98.6
CADMIUM	25.0	24.90	99.6
CALCIUM	5000.0	5074.00	101.5
CHROMIUM	25.0	25.02	100.1
COBALT	25.0	24.87	99.5
COPPER	25.0	24.91	99.6
IRON	5000.0	5159.00	103.2
LEAD	25.0	24.54	98.2
MAGNESIUM	5000.0	4905.00	98.1
MANGANESE	25.0	24.99	100.0
MOLYBDENUM	25.0	24.98	99.9
NICKEL	25.0	25.26	101.0
POTASSIUM	5000.0	4938.00	98.8
SELENIUM	25.0	25.15	100.6
SILVER	25.0	25.20	100.8
SODIUM	5000.0	4817.00	96.3
THALLIUM	25.0	24.50	98.0
VANADIUM	25.0	25.16	100.6
ZINC	25.0	24.84	99.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC20C Mar 20, 2018 22:28

Analyte	True	Found	%R (1)
ALUMINUM	500.0	493.20	98.6
ANTIMONY	25.0	25.30	101.2
ARSENIC	25.0	25.28	101.1
BARIUM	25.0	25.50	102.0
BERYLLIUM	25.0	25.22	100.9
CADMIUM	25.0	25.05	100.2
CALCIUM	5000.0	5160.00	103.2
CHROMIUM	25.0	25.22	100.9
COBALT	25.0	25.33	101.3
COPPER	25.0	25.27	101.1
IRON	5000.0	5218.00	104.4
LEAD	25.0	24.72	98.9
MAGNESIUM	5000.0	4973.00	99.5
MANGANESE	25.0	25.13	100.5
MOLYBDENUM	25.0	24.98	99.9
NICKEL	25.0	25.48	101.9
POTASSIUM	5000.0	5061.00	101.2
SELENIUM	25.0	25.28	101.1
SILVER	25.0	25.16	100.6
SODIUM	5000.0	4943.00	98.9
THALLIUM	25.0	24.56	98.2
VANADIUM	25.0	25.30	101.2
ZINC	25.0	25.32	101.3

SAMPLE: CCV

File: JLC20C Mar 20, 2018 23:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	491.40	98.3
ANTIMONY	25.0	25.24	101.0
ARSENIC	25.0	25.12	100.5
BARIUM	25.0	25.17	100.7
BERYLLIUM	25.0	25.25	101.0
CADMIUM	25.0	25.11	100.4
CALCIUM	5000.0	5161.00	103.2
CHROMIUM	25.0	25.17	100.7
COBALT	25.0	24.97	99.9
COPPER	25.0	25.27	101.1
IRON	5000.0	5205.00	104.1
LEAD	25.0	24.56	98.2
MAGNESIUM	5000.0	4942.00	98.8
MANGANESE	25.0	25.12	100.5
MOLYBDENUM	25.0	25.09	100.4
NICKEL	25.0	25.35	101.4
POTASSIUM	5000.0	4986.00	99.7
SELENIUM	25.0	25.31	101.2
SILVER	25.0	25.44	101.8
SODIUM	5000.0	4909.00	98.2
THALLIUM	25.0	24.71	98.8
VANADIUM	25.0	25.23	100.9
ZINC	25.0	25.02	100.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC21A Mar 21, 2018 14:56

Analyte	True	Found	%R (1)
ALUMINUM	400.0	396.10	99.0
CALCIUM	4000.0	4035.00	100.9
IRON	4000.0	4101.00	102.5
MAGNESIUM	4000.0	3918.00	98.0
MOLYBDENUM	40.0	38.63	96.6
POTASSIUM	4000.0	3903.00	97.6
SODIUM	4000.0	3874.00	96.9

SAMPLE: CCV

File: JLC21A Mar 21, 2018 15:37

Analyte	True	Found	%R (1)
ALUMINUM	500.0	504.10	100.8
CALCIUM	5000.0	5204.00	104.1
IRON	5000.0	5146.00	102.9
MAGNESIUM	5000.0	5069.00	101.4
MOLYBDENUM	25.0	25.59	102.4
POTASSIUM	5000.0	5069.00	101.4
SODIUM	5000.0	4971.00	99.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC21A Mar 21, 2018 16:23

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.70	100.5
CALCIUM	5000.0	5197.00	103.9
IRON	5000.0	5094.00	101.9
MAGNESIUM	5000.0	4952.00	99.0
MOLYBDENUM	25.0	25.19	100.8
POTASSIUM	5000.0	5029.00	100.6
SODIUM	5000.0	4845.00	96.9

SAMPLE: CCV

File: JLC21A Mar 21, 2018 17:11

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.80	100.6
CALCIUM	5000.0	5148.00	103.0
IRON	5000.0	5095.00	101.9
MAGNESIUM	5000.0	4935.00	98.7
MOLYBDENUM	25.0	24.97	99.9
POTASSIUM	5000.0	5032.00	100.6
SODIUM	5000.0	4840.00	96.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC21A Mar 21, 2018 18:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	516.40	103.3
CALCIUM	5000.0	5113.00	102.3
IRON	5000.0	5130.00	102.6
MAGNESIUM	5000.0	5018.00	100.4
MOLYBDENUM	25.0	24.95	99.8
POTASSIUM	5000.0	4985.00	99.7
SODIUM	5000.0	4872.00	97.4

SAMPLE: CCV

File: JLC21A Mar 21, 2018 18:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.00	99.6
CALCIUM	5000.0	5149.00	103.0
IRON	5000.0	5091.00	101.8
MAGNESIUM	5000.0	4973.00	99.5
MOLYBDENUM	25.0	24.79	99.2
POTASSIUM	5000.0	4973.00	99.5
SODIUM	5000.0	4915.00	98.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC22E Mar 22, 2018 17:17

Analyte	True	Found	%R (1)
ALUMINUM	400.0	397.80	99.5
ARSENIC	20.0	19.34	96.7
CADMIUM	20.0	19.99	99.9
CALCIUM	4000.0	4012.00	100.3
CHROMIUM	20.0	19.33	96.6
COBALT	20.0	19.42	97.1
COPPER	20.0	19.63	98.1
IRON	4000.0	4018.00	100.4
MAGNESIUM	4000.0	3890.00	97.3
MANGANESE	20.0	19.49	97.4
MOLYBDENUM	40.0	38.27	95.7
NICKEL	20.0	19.62	98.1
POTASSIUM	4000.0	3845.00	96.1
SELENIUM	20.0	19.90	99.5
SILVER	20.0	19.82	99.1
SODIUM	4000.0	3813.00	95.3
VANADIUM	20.0	19.51	97.5
ZINC	20.0	20.06	100.3

SAMPLE: CCV

File: JLC22E Mar 22, 2018 18:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	493.40	98.7
ARSENIC	25.0	24.82	99.3
CADMIUM	25.0	25.02	100.1
CALCIUM	5000.0	5013.00	100.3
CHROMIUM	25.0	24.86	99.4
COBALT	25.0	25.02	100.1
COPPER	25.0	25.20	100.8
IRON	5000.0	5019.00	100.4
MAGNESIUM	5000.0	4873.00	97.5
MANGANESE	25.0	24.98	99.9
MOLYBDENUM	25.0	24.60	98.4
NICKEL	25.0	24.92	99.7
POTASSIUM	5000.0	4939.00	98.8
SELENIUM	25.0	24.82	99.3
SILVER	25.0	24.98	99.9
SODIUM	5000.0	4836.00	96.7
VANADIUM	25.0	24.81	99.2
ZINC	25.0	25.09	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC22E Mar 22, 2018 18:50

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.80	99.2
ARSENIC	25.0	25.05	100.2
CADMIUM	25.0	25.49	102.0
CALCIUM	5000.0	5038.00	100.8
CHROMIUM	25.0	25.06	100.2
COBALT	25.0	24.97	99.9
COPPER	25.0	25.31	101.2
IRON	5000.0	5076.00	101.5
MAGNESIUM	5000.0	4847.00	96.9
MANGANESE	25.0	25.13	100.5
MOLYBDENUM	25.0	25.46	101.8
NICKEL	25.0	25.22	100.9
POTASSIUM	5000.0	5003.00	100.1
SELENIUM	25.0	25.25	101.0
SILVER	25.0	25.54	102.2
SODIUM	5000.0	4751.00	95.0
VANADIUM	25.0	25.18	100.7
ZINC	25.0	25.33	101.3

SAMPLE: CCV

File: JLC22E Mar 22, 2018 19:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.50	99.1
ARSENIC	25.0	25.08	100.3
CADMIUM	25.0	25.55	102.2
CALCIUM	5000.0	5138.00	102.8
CHROMIUM	25.0	25.46	101.8
COBALT	25.0	25.38	101.5
COPPER	25.0	25.40	101.6
IRON	5000.0	5137.00	102.7
MAGNESIUM	5000.0	4883.00	97.7
MANGANESE	25.0	25.52	102.1
MOLYBDENUM	25.0	25.85	103.4
NICKEL	25.0	25.46	101.8
POTASSIUM	5000.0	4940.00	98.8
SELENIUM	25.0	24.76	99.0
SILVER	25.0	25.82	103.3
SODIUM	5000.0	4787.00	95.7
VANADIUM	25.0	25.62	102.5
ZINC	25.0	25.27	101.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC22E Mar 22, 2018 20:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.50	98.9
ARSENIC	25.0	24.85	99.4
CADMIUM	25.0	25.65	102.6
CALCIUM	5000.0	5157.00	103.1
CHROMIUM	25.0	25.09	100.4
COBALT	25.0	25.15	100.6
COPPER	25.0	25.43	101.7
IRON	5000.0	5071.00	101.4
MAGNESIUM	5000.0	4817.00	96.3
MANGANESE	25.0	25.11	100.4
MOLYBDENUM	25.0	25.71	102.8
NICKEL	25.0	25.09	100.4
POTASSIUM	5000.0	4939.00	98.8
SELENIUM	25.0	25.42	101.7
SILVER	25.0	26.16	104.6
SODIUM	5000.0	4750.00	95.0
VANADIUM	25.0	25.19	100.8
ZINC	25.0	25.21	100.8

SAMPLE: CCV

File: JLC22E Mar 22, 2018 21:22

Analyte	True	Found	%R (1)
ALUMINUM	500.0	491.80	98.4
ARSENIC	25.0	25.06	100.2
CADMIUM	25.0	24.85	99.4
CALCIUM	5000.0	5145.00	102.9
CHROMIUM	25.0	25.55	102.2
COBALT	25.0	25.29	101.2
COPPER	25.0	25.61	102.4
IRON	5000.0	5124.00	102.5
MAGNESIUM	5000.0	4818.00	96.4
MANGANESE	25.0	25.32	101.3
MOLYBDENUM	25.0	25.37	101.5
NICKEL	25.0	25.53	102.1
POTASSIUM	5000.0	4977.00	99.5
SELENIUM	25.0	25.52	102.1
SILVER	25.0	25.36	101.4
SODIUM	5000.0	4776.00	95.5
VANADIUM	25.0	25.47	101.9
ZINC	25.0	25.11	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC22E Mar 22, 2018 22:13

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.10	99.0
ARSENIC	25.0	25.16	100.6
CADMIUM	25.0	25.50	102.0
CALCIUM	5000.0	5143.00	102.9
CHROMIUM	25.0	25.26	101.0
COBALT	25.0	25.29	101.2
COPPER	25.0	25.50	102.0
IRON	5000.0	5145.00	102.9
MAGNESIUM	5000.0	4862.00	97.2
MANGANESE	25.0	25.39	101.6
MOLYBDENUM	25.0	25.53	102.1
NICKEL	25.0	25.21	100.8
POTASSIUM	5000.0	5027.00	100.5
SELENIUM	25.0	25.44	101.8
SILVER	25.0	25.83	103.3
SODIUM	5000.0	4812.00	96.2
VANADIUM	25.0	25.34	101.4
ZINC	25.0	25.59	102.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICV

File: JLC26B Mar 26, 2018 16:22

Analyte	True	Found	%R (1)
ALUMINUM	400.0	403.00	100.8
ARSENIC	20.0	19.53	97.7
CADMIUM	20.0	19.96	99.8
CALCIUM	4000.0	4003.00	100.1
CHROMIUM	20.0	19.40	97.0
COBALT	20.0	19.52	97.6
COPPER	20.0	19.59	98.0
IRON	4000.0	3993.00	99.8
MAGNESIUM	4000.0	4012.00	100.3
MANGANESE	20.0	19.46	97.3
MOLYBDENUM	40.0	38.12	95.3
NICKEL	20.0	19.67	98.4
POTASSIUM	4000.0	3930.00	98.3
SELENIUM	20.0	19.96	99.8
SILVER	20.0	19.61	98.0
SODIUM	4000.0	3930.00	98.3
VANADIUM	20.0	19.40	97.0
ZINC	20.0	20.16	100.8

SAMPLE: CCV

File: JLC26B Mar 26, 2018 17:05

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.10	102.0
ARSENIC	25.0	25.14	100.6
CADMIUM	25.0	25.64	102.6
CALCIUM	5000.0	5134.00	102.7
CHROMIUM	25.0	25.17	100.7
COBALT	25.0	25.09	100.4
COPPER	25.0	25.34	101.4
IRON	5000.0	5116.00	102.3
MAGNESIUM	5000.0	5127.00	102.5
MANGANESE	25.0	25.18	100.7
MOLYBDENUM	25.0	24.97	99.9
NICKEL	25.0	25.33	101.3
POTASSIUM	5000.0	5053.00	101.1
SELENIUM	25.0	25.50	102.0
SILVER	25.0	25.53	102.1
SODIUM	5000.0	5011.00	100.2
VANADIUM	25.0	24.80	99.2
ZINC	25.0	25.62	102.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCV

File: JLC26B Mar 26, 2018 17:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	518.10	103.6
ARSENIC	25.0	25.50	102.0
CADMIUM	25.0	25.38	101.5
CALCIUM	5000.0	5144.00	102.9
CHROMIUM	25.0	25.14	100.6
COBALT	25.0	25.12	100.5
COPPER	25.0	25.39	101.6
IRON	5000.0	5142.00	102.8
MAGNESIUM	5000.0	5057.00	101.1
MANGANESE	25.0	25.38	101.5
MOLYBDENUM	25.0	25.05	100.2
NICKEL	25.0	25.29	101.2
POTASSIUM	5000.0	5014.00	100.3
SELENIUM	25.0	25.57	102.3
SILVER	25.0	25.70	102.8
SODIUM	5000.0	4974.00	99.5
VANADIUM	25.0	24.93	99.7
ZINC	25.0	25.79	103.2

SAMPLE: CCV

File: JLC26B Mar 26, 2018 18:42

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.40	101.5
ARSENIC	25.0	25.74	103.0
CADMIUM	25.0	25.58	102.3
CALCIUM	5000.0	5130.00	102.6
CHROMIUM	25.0	25.41	101.6
COBALT	25.0	25.42	101.7
COPPER	25.0	25.50	102.0
IRON	5000.0	5181.00	103.6
MAGNESIUM	5000.0	5106.00	102.1
MANGANESE	25.0	25.22	100.9
MOLYBDENUM	25.0	25.22	100.9
NICKEL	25.0	25.54	102.2
POTASSIUM	5000.0	5077.00	101.5
SELENIUM	25.0	25.63	102.5
SILVER	25.0	25.58	102.3
SODIUM	5000.0	4934.00	98.7
VANADIUM	25.0	25.14	100.6
ZINC	25.0	25.72	102.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: HLC20A Mar 20, 2018 09:31

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.17	85.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: HLC20B Mar 20, 2018 12:07

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.20	100.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: HLC22A Mar 22, 2018 10:23

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.20	100.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC20C Mar 20, 2018 17:40

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.06	100.3
ANTIMONY	0.2	0.20	100.0
ARSENIC	1.0	1.02	102.0
BARIUM	0.4	0.41	102.5
BERYLLIUM	0.2	0.20	100.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	20.39	102.0
CHROMIUM	1.0	0.98	98.0
COBALT	0.2	0.21	105.0
COPPER	0.6	0.71	118.3
IRON	20.0	21.35	106.8
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.47	102.3
MANGANESE	0.4	0.40	100.0
MOLYBDENUM	1.0	1.05	105.0
NICKEL	0.4	0.42	105.0
POTASSIUM	200.0	198.10	99.0
SELENIUM	1.0	1.13	113.0
SILVER	0.2	0.22	110.0
SODIUM	200.0	207.40	103.7
THALLIUM	0.2	0.19	95.0
VANADIUM	1.0	1.01	101.0
ZINC	2.0	2.43	121.5•

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC21A Mar 21, 2018 15:03

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.23	101.2
CALCIUM	20.0	18.96	94.8
IRON	20.0	18.68	93.4
MAGNESIUM	20.0	19.76	98.8
MOLYBDENUM	1.0	0.99	99.0
POTASSIUM	200.0	199.40	99.7
SODIUM	200.0	208.70	104.3

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC22E Mar 22, 2018 17:25

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.04	100.2
ARSENIC	1.0	1.15	115.0
CADMIUM	0.2	0.20	100.0
CALCIUM	20.0	21.81	109.1
CHROMIUM	1.0	0.94	94.0
COBALT	0.2	0.21	105.0
COPPER	0.6	0.61	101.7
IRON	20.0	22.97	114.8
MAGNESIUM	20.0	19.83	99.1
MANGANESE	0.4	0.38	95.0
MOLYBDENUM	1.0	0.98	98.0
NICKEL	0.4	0.43	107.5
POTASSIUM	200.0	192.60	96.3
SELENIUM	1.0	1.20	120.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	198.30	99.2
VANADIUM	1.0	0.98	98.0
ZINC	2.0	2.09	104.5

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: PQL

File: JLC26B Mar 26, 2018 16:29

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	19.04	95.2
ARSENIC	1.0	1.04	104.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	19.97	99.8
CHROMIUM	1.0	1.02	102.0
COBALT	0.2	0.22	110.0
COPPER	0.6	0.64	106.7
IRON	20.0	17.40	87.0
MAGNESIUM	20.0	20.22	101.1
MANGANESE	0.4	0.40	100.0
MOLYBDENUM	1.0	0.95	95.0
NICKEL	0.4	0.39	97.5
POTASSIUM	200.0	201.30	100.6
SELENIUM	1.0	1.19	119.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	210.10	105.1
VANADIUM	1.0	0.97	97.0
ZINC	2.0	2.06	103.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: HLC20A Mar 20, 2018 9:29

Analyte	Result	C
MERCURY	-0.040	U

SAMPLE: CCB

File: HLC20A Mar 20, 2018 9:35

Analyte	Result	C
MERCURY	-0.035	U

SAMPLE: CCB

File: HLC20A Mar 20, 2018 10:02

Analyte	Result	C
MERCURY	-0.034	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: HLC20B Mar 20, 2018 12:04

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC20B Mar 20, 2018 12:11

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC20B Mar 20, 2018 12:30

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB
File: HLC20B Mar 20, 2018 12:59

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB
File: HLC20B Mar 20, 2018 13:22

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB
File: HLC20B Mar 20, 2018 13:50

Analyte	Result	C
MERCURY	0.024	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: HLC20B Mar 20, 2018 14:13

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: HLC22A Mar 22, 2018 10:21

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC22A Mar 22, 2018 10:27

Analyte	Result	C
MERCURY	0.024	U

SAMPLE: CCB

File: HLC22A Mar 22, 2018 10:55

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: HLC22A Mar 22, 2018 11:23

Analyte	Result	C
MERCURY	0.024	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB
File: JLC20C Mar 20, 2018 17:37

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.011	J
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 18:21

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.010	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.037	J
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 19:10

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB
File: JLC20C Mar 20, 2018 20:00

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.024	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 20:51

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.007	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC20C Mar 20, 2018 21:41

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.007	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: JLC20C Mar 20, 2018 22:32

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.009	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.037	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB

File: JLC20C Mar 20, 2018 23:23

Analyte	Result	C
ALUMINUM	1.900	U
ANTIMONY	0.006	U
ARSENIC	0.180	U
BARIUM	0.075	U
BERYLLIUM	0.004	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.009	J
COPPER	0.030	U
IRON	4.300	U
LEAD	0.010	U
MAGNESIUM	1.300	U
MANGANESE	0.038	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
THALLIUM	0.008	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: JLC21A Mar 21, 2018 15:00

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.036	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLC21A Mar 21, 2018 15:40

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	-5.579	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.045	J
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLC21A Mar 21, 2018 16:27

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	-4.412	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: JLC21A Mar 21, 2018 17:15

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U

SAMPLE: CCB

File: JLC21A Mar 21, 2018 18:04

Analyte	Result	C
ALUMINUM	14.670	B
CALCIUM	9.193	J
IRON	6.456	J
MAGNESIUM	8.290	J
MOLYBDENUM	0.058	J
POTASSIUM	7.900	U
SODIUM	5.128	J

SAMPLE: CCB

File: JLC21A Mar 21, 2018 18:53

Analyte	Result	C
ALUMINUM	1.900	U
CALCIUM	5.300	U
IRON	4.300	U
MAGNESIUM	1.300	U
MOLYBDENUM	0.034	U
POTASSIUM	7.900	U
SODIUM	4.400	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB
File: JLC22E Mar 22, 2018 17:21

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC22E Mar 22, 2018 18:05

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.035	J
NICKEL	0.018	U
POTASSIUM	-10.590	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC22E Mar 22, 2018 18:54

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB
File: JLC22E Mar 22, 2018 19:44

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.568	J
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC22E Mar 22, 2018 20:35

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	-0.191	U
CADMIUM	0.007	U
CALCIUM	5.702	J
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB
File: JLC22E Mar 22, 2018 21:27

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	-0.307	U
CADMIUM	0.007	U
CALCIUM	5.622	J
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.027	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: JLC22E Mar 22, 2018 22:17

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.008	J
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICB

File: JLC26B Mar 26, 2018 16:26

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

SAMPLE: CCB

File: JLC26B Mar 26, 2018 17:09

Analyte	Result	C
ALUMINUM	49.710	B
ARSENIC	0.350	J
CADMIUM	0.105	B
CALCIUM	44.900	B
CHROMIUM	0.201	J
COBALT	0.110	B
COPPER	0.188	J
IRON	27.730	B
MAGNESIUM	67.070	B
MANGANESE	0.200	J
MOLYBDENUM	0.360	J
NICKEL	0.122	J
POTASSIUM	48.810	J
SELENIUM	0.470	U
SILVER	0.015	J
SODIUM	55.320	J
VANADIUM	0.098	J
ZINC	0.430	J

SAMPLE: CCB

File: JLC26B Mar 26, 2018 17:57

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.021	U
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: CCB

File: JLC26B Mar 26, 2018 18:46

Analyte	Result	C
ALUMINUM	1.900	U
ARSENIC	0.180	U
CADMIUM	0.007	U
CALCIUM	5.300	U
CHROMIUM	0.062	U
COBALT	0.012	J
COPPER	0.030	U
IRON	4.300	U
MAGNESIUM	1.300	U
MANGANESE	0.030	J
MOLYBDENUM	0.034	U
NICKEL	0.018	U
POTASSIUM	7.900	U
SELENIUM	0.470	U
SILVER	0.003	U
SODIUM	4.400	U
VANADIUM	0.063	U
ZINC	0.270	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC19HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC19IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19IMS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
ALUMINUM	1.4	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	8.0	U
CHROMIUM	0.12	J
COBALT	0.030	U
COPPER	0.075	J
IRON	6.0	U
LEAD	0.031	J
MAGNESIUM	1.7	J
MANGANESE	0.10	U
NICKEL	0.052	J
POTASSIUM	40	U
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	4.0	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.80	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC20HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC20IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20IMS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
ALUMINUM	1.1	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	5.4	J
CHROMIUM	0.13	J
COBALT	0.030	U
COPPER	0.20	U
IRON	6.0	U
LEAD	0.030	J
MAGNESIUM	8.0	U
MANGANESE	0.049	J
NICKEL	0.063	J
POTASSIUM	40	U
SELENIUM	0.044	J
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.26	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSLC21HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC21HGS1

Concentration Units : mg/Kg drywt

Analyte	RESULT	C
MERCURY	0.017	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLC19HGW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19HGW2

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWLC19IMW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	8.3	J
ANTIMONY	0.10	J
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	80	U
CHROMIUM	0.66	J
COBALT	0.30	U
COPPER	2.0	U
IRON	14	J
LEAD	0.50	U
MAGNESIUM	80	U
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	400	U
SELENIUM	1.2	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC20C Mar 20, 2018 17:48

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95700.00	95.7
ANTIMONY	0	0.07	
ARSENIC	0	0.34	
BARIUM	0	0.09	
BERYLLIUM	0	0.00	
CADMIUM	0	0.02	
CALCIUM	100000.00	98950.00	99.0
CHROMIUM	0	0.88	
COBALT	0	0.10	
COPPER	0	0.97	
IRON	100000.00	95490.00	95.5
LEAD	0	0.09	
MAGNESIUM	100000.00	96440.00	96.4
MANGANESE	0	0.33	
MOLYBDENUM	2000.00	1966.00	98.3
NICKEL	0	-0.09	
POTASSIUM	100000.00	98660.00	98.7
SELENIUM	0	0.20	
SILVER	0	0.03	
SODIUM	100000.00	97650.00	97.7
THALLIUM	0	0.00	
VANADIUM	0	0.20	
ZINC	0	2.28	

SAMPLE: ICSAB

File: JLC20C Mar 20, 2018 17:53

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96200.00	96.2
ANTIMONY	20.00	20.65	105.0
ARSENIC	20.00	21.27	105.0
BARIUM	21.00	21.34	100.0
BERYLLIUM	20.00	20.99	105.0
CADMIUM	20.00	19.62	100.0
CALCIUM	100000.00	100000.00	100.0
CHROMIUM	20.00	21.50	110.0
COBALT	20.00	20.49	100.0
COPPER	20.00	20.60	105.0
IRON	100000.00	97530.00	97.5
LEAD	20.00	21.68	110.0
MAGNESIUM	100000.00	97350.00	97.4
MANGANESE	20.00	20.70	105.0
MOLYBDENUM	2000.00	1998.00	99.9
NICKEL	20.00	19.86	100.0
POTASSIUM	100000.00	99710.00	99.7
SELENIUM	20.00	20.57	105.0
SILVER	20.00	19.27	95.0
SODIUM	100000.00	98390.00	98.4
THALLIUM	20.00	21.78	110.0
VANADIUM	20.00	21.28	105.0
ZINC	20.00	21.47	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC21A Mar 21, 2018 15:11

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	94680.00	94.7
CALCIUM	100000.00	95910.00	95.9
IRON	100000.00	93650.00	93.7
MAGNESIUM	100000.00	94340.00	94.3
MOLYBDENUM	2000.00	1885.00	94.3
POTASSIUM	100000.00	96960.00	97.0
SODIUM	100000.00	94290.00	94.3

SAMPLE: ICSAB

File: JLC21A Mar 21, 2018 15:15

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	93340.00	93.3
CALCIUM	100000.00	95000.00	95.0
IRON	100000.00	92240.00	92.2
MAGNESIUM	100000.00	92740.00	92.7
MOLYBDENUM	2000.00	1887.00	94.3
POTASSIUM	100000.00	95980.00	96.0
SODIUM	100000.00	92720.00	92.7

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC22E Mar 22, 2018 17:33

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95920.00	95.9
ARSENIC	0	0.33	
CADMIUM	0	0.09	
CALCIUM	100000.00	97010.00	97.0
CHROMIUM	0	0.85	
COBALT	0	0.10	
COPPER	0	0.99	
IRON	100000.00	90580.00	90.6
MAGNESIUM	100000.00	94160.00	94.2
MANGANESE	0	0.33	
MOLYBDENUM	2000.00	1841.00	92.0
NICKEL	0	-0.07	
POTASSIUM	100000.00	97790.00	97.8
SELENIUM	0	0.34	
SILVER	0	0.02	
SODIUM	100000.00	95480.00	95.5
VANADIUM	0	0.19	
ZINC	0	2.38	

SAMPLE: ICSAB

File: JLC22E Mar 22, 2018 17:37

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95880.00	95.9
ARSENIC	20.00	20.07	100.0
CADMIUM	20.00	18.83	95.0
CALCIUM	100000.00	97010.00	97.0
CHROMIUM	20.00	20.45	100.0
COBALT	20.00	19.40	95.0
COPPER	20.00	19.57	100.0
IRON	100000.00	91780.00	91.8
MAGNESIUM	100000.00	93700.00	93.7
MANGANESE	20.00	19.91	100.0
MOLYBDENUM	2000.00	1880.00	94.0
NICKEL	20.00	18.72	95.0
POTASSIUM	100000.00	97430.00	97.4
SELENIUM	20.00	19.53	100.0
SILVER	20.00	18.51	95.0
SODIUM	100000.00	94740.00	94.7
VANADIUM	20.00	20.28	100.0
ZINC	20.00	20.67	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Concentration Units: ug/L

SAMPLE: ICSA

File: JLC26B Mar 26, 2018 16:37

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95400.00	95.4
ARSENIC	0	0.38	
CADMIUM	0	0.08	
CALCIUM	100000.00	94520.00	94.5
CHROMIUM	0	0.74	
COBALT	0	0.09	
COPPER	0	0.88	
IRON	100000.00	89940.00	89.9
MAGNESIUM	100000.00	95140.00	95.1
MANGANESE	0	0.29	
MOLYBDENUM	2000.00	1802.00	90.1
NICKEL	0	-0.11	
POTASSIUM	100000.00	96960.00	97.0
SELENIUM	0	0.18	
SILVER	0	0.02	
SODIUM	100000.00	96140.00	96.1
VANADIUM	0	0.20	
ZINC	0	2.26	

SAMPLE: ICSAB

File: JLC26B Mar 26, 2018 16:41

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	96870.00	96.9
ARSENIC	20.00	19.72	100.0
CADMIUM	20.00	18.64	95.0
CALCIUM	100000.00	96200.00	96.2
CHROMIUM	20.00	20.08	100.0
COBALT	20.00	19.01	95.0
COPPER	20.00	19.10	95.0
IRON	100000.00	89700.00	89.7
MAGNESIUM	100000.00	95310.00	95.3
MANGANESE	20.00	19.49	95.0
MOLYBDENUM	2000.00	1839.00	92.0
NICKEL	20.00	18.54	95.0
POTASSIUM	100000.00	98350.00	98.4
SELENIUM	20.00	19.21	95.0
SILVER	20.00	18.49	90.0
SODIUM	100000.00	96010.00	96.0
VANADIUM	20.00	19.84	100.0
ZINC	20.00	20.51	105.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06S

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019P

Concentration Units : mg/Kg drywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	17200		14100		160.17	1917.0	N	78	124	MS
ANTIMONY, TOTAL	3.13		0.275		8.01	35.7	N	72	124	MS
ARSENIC, TOTAL	9.57		2.45		8.01	88.9		82	118	MS
BARIUM, TOTAL	395		206		160.17	117.8	N	86	116	MS
BERYLLIUM, TOTAL	4.78		0.726		4	101.5		80	120	MS
CADMIUM, TOTAL	20.2		2.46		20.02	88.7		84	116	MS
CALCIUM, TOTAL	5210		4790		200.21	209.6	N	86	118	MS
CHROMIUM, TOTAL	31.7		13.5		16.02	113.6		83	119	MS
COBALT, TOTAL	42.1		5.20		40.04	92.1		84	115	MS
COPPER, TOTAL	69.9		47.6		20.02	111.5		84	119	MS
IRON, TOTAL	13400		11900		80.09	1870.9	N	81	124	MS
LEAD, TOTAL	38.3		29.2		8.01	113.4		84	118	MS
MAGNESIUM, TOTAL	4820		4110		400.43	177.6	N	80	123	MS
MANGANESE, TOTAL	282		229		40.04	131.9	N	85	116	MS
MERCURY, TOTAL	0.452		0.362		0.18	50.2	N	80	124	CV
NICKEL, TOTAL	47.8		11.2		40.04	91.3		84	119	MS
POTASSIUM, TOTAL	6330		4860		800.86	183.2	N	85	119	MS
SELENIUM, TOTAL	7.15		0.494		8.01	83.1		80	119	MS
SILVER, TOTAL	3.83		0.249		4	89.6		83	118	MS
SODIUM, TOTAL	693		94.0		600.64	99.8		79	125	MS
THALLIUM, TOTAL	8.37		0.246		8.01	101.4		83	118	MS
VANADIUM, TOTAL	63.9		21.4		40.04	106.3		82	116	MS
ZINC, TOTAL	127		88.7		40.04	96.7		82	119	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06S

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019S

Concentration Units : mg/Kg drywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	16800		14100		160.17	1679.5	N	78	124	MS
ANTIMONY, TOTAL	3.16		0.275		8.01	36.0	N	72	124	MS
ARSENIC, TOTAL	9.39		2.45		8.01	86.7		82	118	MS
BARIUM, TOTAL	386		206		160.17	112.7		86	116	MS
BERYLLIUM, TOTAL	4.56		0.726		4	96.0		80	120	MS
CADMIUM, TOTAL	20.3		2.46		20.02	89.3		84	116	MS
CALCIUM, TOTAL	4440		4790		200.21	-174.4	N	86	118	MS
CHROMIUM, TOTAL	31.1		13.5		16.02	109.9		83	119	MS
COBALT, TOTAL	42.0		5.20		40.04	91.8		84	115	MS
COPPER, TOTAL	66.1		47.6		20.02	92.5		84	119	MS
IRON, TOTAL	12800		11900		80.09	1070.9	N	81	124	MS
LEAD, TOTAL	36.1		29.2		8.01	86.4		84	118	MS
MAGNESIUM, TOTAL	4600		4110		400.43	123.6	N	80	123	MS
MANGANESE, TOTAL	270		229		40.04	103.1		85	116	MS
MERCURY, TOTAL	0.480		0.362		0.19	62.2	N	80	124	CV
NICKEL, TOTAL	47.0		11.2		40.04	89.4		84	119	MS
POTASSIUM, TOTAL	6050		4860		800.86	148.2	N	85	119	MS
SELENIUM, TOTAL	7.26		0.494		8.01	84.5		80	119	MS
SILVER, TOTAL	3.86		0.249		4	90.4		83	118	MS
SODIUM, TOTAL	684		94.0		600.64	98.2		79	125	MS
THALLIUM, TOTAL	8.40		0.246		8.01	101.8		83	118	MS
VANADIUM, TOTAL	64.0		21.4		40.04	106.4		82	116	MS
ZINC, TOTAL	122		88.7		40.04	84.2		82	119	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06S

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	35600		35500		200	45.0	A	80	120	MS
ANTIMONY, TOTAL	2.87		0.692		2	108.7		80	120	MS
ARSENIC, TOTAL	16.6		6.16		10	104.6		80	120	MS
BARIUM, TOTAL	510		519		4	-235.0	A	80	120	MS
BERYLLIUM, TOTAL	4.19		1.82		2	118.4		80	120	MS
CADMIUM, TOTAL	7.95		6.18		2	88.4		80	120	MS
CALCIUM, TOTAL	11900		12000		200	-40.0	A	80	120	MS
CHROMIUM, TOTAL	43.3		34.0		10	92.7		80	120	MS
COBALT, TOTAL	14.7		13.1		2	82.0		80	120	MS
COPPER, TOTAL	123		120		6	45.0	A	80	120	MS
IRON, TOTAL	29400		29900		200	-250.0	A	80	120	MS
LEAD, TOTAL	73.3		73.3		2	2.0	A	80	120	MS
MAGNESIUM, TOTAL	10000		10300		200	-135.0	A	80	120	MS
MANGANESE, TOTAL	564		574		4	-255.0	A	80	120	MS
MERCURY, TOTAL	1.64		1.93		1	-29.2	A	80	120	CV
NICKEL, TOTAL	31.8		28.2		4	89.8		80	120	MS
POTASSIUM, TOTAL	14300		12200		2000	104.0		80	120	MS
SELENIUM, TOTAL	11.2		1.24		10	99.9		80	120	MS
SILVER, TOTAL	2.72		0.627		2	104.9		80	120	MS
SODIUM, TOTAL	2510		236		2000	113.7		80	120	MS
THALLIUM, TOTAL	2.81		0.618		2	109.5		80	120	MS
VANADIUM, TOTAL	65.2		53.6		10	115.7		80	120	MS
ZINC, TOTAL	239		223		20	80.5		80	120	MS

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06

Matrix: SOIL **SDG Name:** SL2133

Percent Solids: 78.5 **Lab Sample ID:** SL2133-019

Concentration Units : mg/Kg drywt

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ALUMINUM, TOTAL		16800		17200		2.2		MS
ANTIMONY, TOTAL		3.16		3.13		0.8		MS
ARSENIC, TOTAL		9.39		9.57		1.9		MS
BARIUM, TOTAL		386		395		2.1		MS
BERYLLIUM, TOTAL		4.56		4.78		4.7		MS
CADMIUM, TOTAL		20.3		20.2		0.5		MS
CALCIUM, TOTAL		4440		5210		15.9		MS
CHROMIUM, TOTAL		31.1		31.7		1.9		MS
COBALT, TOTAL		42.0		42.1		0.3		MS
COPPER, TOTAL		66.1		69.9		5.6		MS
IRON, TOTAL		12800		13400		4.9		MS
LEAD, TOTAL		36.1		38.3		5.8		MS
MAGNESIUM, TOTAL		4600		4820		4.6		MS
MANGANESE, TOTAL		270		282		4.2		MS
MERCURY, TOTAL		0.480		0.452		6.0		CV
NICKEL, TOTAL		47.0		47.8		1.6		MS
POTASSIUM, TOTAL		6050		6330		4.5		MS
SELENIUM, TOTAL		7.26		7.15		1.6		MS
SILVER, TOTAL		3.86		3.83		0.9		MS
SODIUM, TOTAL		684		693		1.3		MS
THALLIUM, TOTAL		8.40		8.37		0.4		MS
VANADIUM, TOTAL		64.0		63.9		0.1		MS
ZINC, TOTAL		122		127		4.0		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OLC20HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.807	97.6	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC19HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.884	106.0	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC19IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC19IMS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200	198	99.0	78	124
ANTIMONY	10.0	10.2	102.5	72	124
ARSENIC	10.0	10.0	100.0	82	118
BARIUM	200	205	102.6	86	116
BERYLLIUM	5.00	4.93	98.6	80	120
CADMIUM	25.0	25.5	102.0	84	116
CALCIUM	250	253	101.0	86	118
CHROMIUM	20.0	19.4	97.0	83	119
COBALT	50.0	50.2	100.3	84	115
COPPER	25.0	24.7	98.7	84	119
IRON	100	97.3	97.3	81	124
LEAD	10.0	10.2	102.3	84	118
MAGNESIUM	500	508	101.5	80	123
MANGANESE	50.0	48.8	97.7	85	116
NICKEL	50.0	50.5	101.0	84	119
POTASSIUM	1000	976	97.5	85	119
SELENIUM	10.0	9.78	97.8	80	119
SILVER	5.00	5.11	102.2	83	118
SODIUM	750	731	97.5	79	125
THALLIUM	10.0	10.0	100.6	83	118
VANADIUM	50.0	49.0	98.1	82	116
ZINC	50.0	47.9	95.8	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC20HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.864	103.6	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC20IMS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20IMS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200	209	104.5	78	124
ANTIMONY	10.0	10.3	102.6	72	124
ARSENIC	10.0	10.1	101.1	82	118
BARIUM	200	207	103.7	86	116
BERYLLIUM	5.00	4.93	98.6	80	120
CADMIUM	25.0	25.4	101.6	84	116
CALCIUM	250	258	103.3	86	118
CHROMIUM	20.0	19.7	98.6	83	119
COBALT	50.0	51.0	102.0	84	115
COPPER	25.0	24.8	99.0	84	119
IRON	100	98.0	98.0	81	124
LEAD	10.0	10.3	103.1	84	118
MAGNESIUM	500	524	104.8	80	123
MANGANESE	50.0	49.9	99.7	85	116
NICKEL	50.0	50.4	100.8	84	119
POTASSIUM	1000	1000	100.1	85	119
SELENIUM	10.0	10.0	100.2	80	119
SILVER	5.00	5.14	103.0	83	118
SODIUM	750	735	98.0	79	125
THALLIUM	10.0	10.2	101.8	83	118
VANADIUM	50.0	50.1	100.2	82	116
ZINC	50.0	48.2	96.3	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOLC21HGS1

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC21HGS1

Concentration Units : mg/Kg drywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.833	0.839	101.2	80	124

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLC19HGW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19HGW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	4.60	92.0	82	119

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWLC19IMW2

Matrix: WATER **SDG Name:** SL2133

QC Batch ID: LC19IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000	2240	111.9	84	117
ANTIMONY	100	112	112.1	85	117
ARSENIC	100	111	110.9	84	116
BARIUM	2000	2260	113.1	86	114
BERYLLIUM	50.0	53.4	106.9	83	121
CADMIUM	250	278	111.4	87	115
CALCIUM	2500	2790	111.6	87	118
CHROMIUM	200	220	109.9	85	116
COBALT	500	572	114.4	86	115
COPPER	250	277	110.8	85	118
IRON	1000	1120	111.9	87	118
LEAD	100	111	110.9	88	115
MAGNESIUM	5000	5780	115.6	83	118
MANGANESE	500	560	112.0	87	115
NICKEL	500	563	112.6	85	117
POTASSIUM	10000	10900	108.6	87	115
SELENIUM	100	108	108.2	80	120
SILVER	50.0	56.2	112.4	85	116
SODIUM	7500	8060	107.4	85	117
THALLIUM	100	108	107.9	82	116
VANADIUM	500	570	113.9	86	115
ZINC	500	502	100.5	83	119

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SL2133

QC Batch ID: LC20HGS1 **Lab Sample ID:** LCSOLC20HGS1

Concentration Units: mg/Kg drywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.864	0.807	6.8	

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ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** CHAAP-20B-SS06L

Matrix: SOIL **SDG Name:** SL2133

Lab Sample ID: SL2133-019L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	35500		37400		5.4		MS
ANTIMONY, TOTAL	0.692		0.82	J	18.5		MS
ARSENIC, TOTAL	6.16		7.2		16.9		MS
BARIUM, TOTAL	519		541		4.2		MS
BERYLLIUM, TOTAL	1.82		1.98		8.8		MS
CADMIUM, TOTAL	6.18		7.38		19.4	E	MS
CALCIUM, TOTAL	12000		13000		8.3		MS
CHROMIUM, TOTAL	34.0		39.1		15.0		MS
COBALT, TOTAL	13.1		15.4		17.6	E	MS
COPPER, TOTAL	120		142		18.3	E	MS
IRON, TOTAL	29900		36000		20.4	E	MS
LEAD, TOTAL	73.3		75.1		2.5		MS
MAGNESIUM, TOTAL	10300		11100		7.8		MS
MANGANESE, TOTAL	574		684		19.2	E	MS
MERCURY, TOTAL	1.93		1.96		1.6		CV
NICKEL, TOTAL	28.2		33.2		17.7	E	MS
POTASSIUM, TOTAL	12200		12900		5.7		MS
SELENIUM, TOTAL	1.24		2.0	J	61.3		MS
SILVER, TOTAL	0.627		0.732	J	16.7		MS
SODIUM, TOTAL	236		220	J	6.8		MS
THALLIUM, TOTAL	0.618		0.64	J	3.6		MS
VANADIUM, TOTAL	53.6		61.9		15.5	E	MS
ZINC, TOTAL	223		270		21.1	E	MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/11/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
MERCURY	0.20	0.024	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/15/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	20	1.9	MS
ANTIMONY	0.20	0.0056	MS
ARSENIC	1.0	0.18	MS
BARIUM	0.40	0.075	MS
BERYLLIUM	0.20	0.0037	MS
CADMIUM	0.20	0.0069	MS
CALCIUM	20	5.3	MS
CHROMIUM	1.0	0.062	MS
COBALT	0.20	0.0062	MS
COPPER	0.60	0.030	MS
IRON	20	4.3	MS
LEAD	0.20	0.010	MS
MAGNESIUM	20	1.3	MS
MANGANESE	0.40	0.021	MS
MOLYBDENUM	1.0	0.034	MS
NICKEL	0.40	0.018	MS
POTASSIUM	200	7.9	MS
SELENIUM	1.0	0.47	MS
SILVER	0.20	0.0030	MS
SODIUM	200	4.4	MS
THALLIUM	0.20	0.0084	MS
VANADIUM	1.0	0.063	MS
ZINC	2.0	0.27	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.017	mg/Kg	CV	SW846 7471B / SW846 7471B

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / SW846 7470A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.0	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.20	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.040	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.060	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
IRON	12	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	16	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.20	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.24	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.60	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.080	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	80	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.080	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	1.6	ug/L	MS	SW846 3010A / SW846 6020A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.010	mg/kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.080	mg/kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.020	mg/kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.0040	mg/Kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.0040	mg/kg	MS	SW846 3050B / SW846 6020A
CALCIUM	1.6	mg/kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.080	mg/kg	MS	SW846 3050B / SW846 6020A
COBALT	0.0060	mg/kg	MS	SW846 3050B / SW846 6020A
COPPER	0.040	mg/kg	MS	SW846 3050B / SW846 6020A
IRON	1.2	mg/kg	MS	SW846 3050B / SW846 6020A
LEAD	0.010	mg/Kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	1.6	mg/kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.020	mg/kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.024	mg/kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	8.0	mg/Kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.060	mg/kg	MS	SW846 3050B / SW846 6020A
SILVER	0.0080	mg/kg	MS	SW846 3050B / SW846 6020A
SODIUM	8.0	mg/kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.0080	mg/kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.080	mg/Kg	MS	SW846 3050B / SW846 6020A
ZINC	0.16	mg/kg	MS	SW846 3050B / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.0052	mg/Kg	CV	SW846 7471B / SW846 7471B

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.013	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.011	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.054	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.0067	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.0059	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	4.1	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.044	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.012	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.037	ug/L	MS	SW846 3010A / SW846 6020A
IRON	2.6	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.015	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	1.6	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.070	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.030	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	6.1	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.037	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.010	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	3.7	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.012	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.0040	mg/kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.029	mg/kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.0073	mg/kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.00081	mg/kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.0015	mg/kg	MS	SW846 3050B / SW846 6020A
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.0098	mg/kg	MS	SW846 3050B / SW846 6020A
COBALT	0.0011	mg/kg	MS	SW846 3050B / SW846 6020A
COPPER	0.014	mg/kg	MS	SW846 3050B / SW846 6020A
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020A
LEAD	0.0014	mg/kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.0084	mg/kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.0053	mg/kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.0078	mg/kg	MS	SW846 3050B / SW846 6020A
SILVER	0.0013	mg/kg	MS	SW846 3050B / SW846 6020A
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.0019	mg/kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.022	mg/kg	MS	SW846 3050B / SW846 6020A
ZINC	0.026	mg/kg	MS	SW846 3050B / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/31/2018

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	2000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	1000	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	2000	MS
COBALT	0.10	1000	MS
COPPER	0.10	2000	MS
IRON	0.03	100000	MS
LEAD	0.10	2000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	2000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	1000	MS
SILVER	0.10	100	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	2000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19HGS1

Matrix: SOIL **SDG Name:** SL2133

Method: CV **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC19HGS1	LCSOLC19HGS1	0.6	0.1	
PBSLC19HGS1	PBSLC19HGS1	0.6	0.1	
CHAAP-20B-SB01-11	SL2133-001	0.8	0.1	A
CHAAP-20B-SB01-4	SL2133-002	0.73	0.1	A
CHAAP-20B-SB01-8	SL2133-003	0.66	0.1	A
CHAAP-20B-SB02-4	SL2133-004	0.75	0.1	A
CHAAP-20B-SB02-8	SL2133-005	0.68	0.1	A
CHAAP-20B-SB03-4	SL2133-006	0.65	0.1	A
CHAAP-20B-SB03-8	SL2133-007	0.73	0.1	A
CHAAP-20B-SB04-4	SL2133-008	0.71	0.1	A
CHAAP-20B-SB04-8	SL2133-009	0.74	0.1	A
CHAAP-20B-SB05-4	SL2133-010	0.62	0.1	A
CHAAP-20B-SB05-8	SL2133-011	0.74	0.1	A
CHAAP-20B-SB06-4	SL2133-012	0.68	0.1	A
CHAAP-20B-SB06-8	SL2133-013	0.71	0.1	A
CHAAP-20B-SS01	SL2133-014	0.64	0.1	A
CHAAP-20B-SS02	SL2133-015	0.8	0.1	A
CHAAP-20B-SS03	SL2133-016	0.68	0.1	A
CHAAP-20B-SS04	SL2133-017	0.72	0.1	A
CHAAP-20B-SS05	SL2133-018	0.78	0.1	A
CHAAP-20B-SS06	SL2133-019	0.68	0.1	A
CHAAP-20B-SS06P	SL2133-019P	0.68	0.1	A
CHAAP-20B-SS06S	SL2133-019S	0.68	0.1	A
CHAAP-20B-SS102	SL2133-021	0.66	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19HGW2

Matrix: WATER **SDG Name:** SL2133

Method: CV **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLC19HGW2	LCSWLC19HGW2	0.025	0.025	
PBWLC19HGW2	PBWLC19HGW2	0.025	0.025	
CHAAP-20B-EB-031518	SL2133-020	0.025	0.025	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19IMS1

Matrix: SOIL **SDG Name:** SL2133

Method: MS **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC19IMS1	LCSOLC19IMS1	1	0.1	
PBSLC19IMS1	PBSLC19IMS1	1	0.1	
CHAAP-20B-SB01-11	SL2133-001	1.76	0.1	A
CHAAP-20B-SB01-4	SL2133-002	1.41	0.1	A
CHAAP-20B-SB01-8	SL2133-003	1.34	0.1	A
CHAAP-20B-SB02-4	SL2133-004	1.56	0.1	A
CHAAP-20B-SB02-8	SL2133-005	1.61	0.1	A
CHAAP-20B-SB03-4	SL2133-006	1.19	0.1	A
CHAAP-20B-SB03-8	SL2133-007	1.38	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC19IMW2

Matrix: WATER **SDG Name:** SL2133

Method: MS **Prep Date:** 03/19/2018

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWLC19IMW2	LCSWLC19IMW2	0.05	0.05	
PBWLC19IMW2	PBWLC19IMW2	0.05	0.05	
CHAAP-20B-EB-031518	SL2133-020	0.05	0.05	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC20HGS1

Matrix: SOIL **SDG Name:** SL2133

Method: CV **Prep Date:** 03/20/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OLC20HGS1	LC2OLC20HGS1	0.6	0.1	
LCSOLC20HGS1	LCSOLC20HGS1	0.6	0.1	
PBSLC20HGS1	PBSLC20HGS1	0.6	0.1	
CHAAP-20B-SS104	SL2133-022	0.68	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC20IMS1

Matrix: SOIL **SDG Name:** SL2133

Method: MS **Prep Date:** 03/20/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC20IMS1	LCSOLC20IMS1	1	0.1	
PBSLC20IMS1	PBSLC20IMS1	1	0.1	
CHAAP-20B-SB04-4	SL2133-008	2.01	0.1	A
CHAAP-20B-SB04-8	SL2133-009	1.82	0.1	A
CHAAP-20B-SB05-4	SL2133-010	1.83	0.1	A
CHAAP-20B-SB05-8	SL2133-011	1.68	0.1	A
CHAAP-20B-SB06-4	SL2133-012	2.01	0.1	A
CHAAP-20B-SB06-8	SL2133-013	1.55	0.1	A
CHAAP-20B-SS01	SL2133-014	1.38	0.1	A
CHAAP-20B-SS02	SL2133-015	1.43	0.1	A
CHAAP-20B-SS03	SL2133-016	1.38	0.1	A
CHAAP-20B-SS04	SL2133-017	1.22	0.1	A
CHAAP-20B-SS05	SL2133-018	1.35	0.1	A
CHAAP-20B-SS06	SL2133-019	1.6	0.1	A
CHAAP-20B-SS06P	SL2133-019P	1.59	0.1	A
CHAAP-20B-SS06S	SL2133-019S	1.59	0.1	A
CHAAP-20B-SS102	SL2133-021	1.29	0.1	A
CHAAP-20B-SS104	SL2133-022	1.52	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** LC21HGS1

Matrix: SOIL **SDG Name:** SL2133

Method: CV **Prep Date:** 03/21/2018

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOLC21HGS1	LCSOLC21HGS1	0.6	0.1	
PBSLC21HGS1	PBSLC21HGS1	0.6	0.1	
CHAAP-20B-SS06P	SL2133-019RP	0.69	0.1	A
CHAAP-20B-SS06S	SL2133-019RS	0.68	0.1	A

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20A

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	9:14	Hg
Standard #1 (0.2 ppb		1	9:16	Hg
Standard #2 (0.5 ppb		1	9:18	Hg
Standard #3 (1.0 ppb		1	9:20	Hg
Standard #4 (5.0 ppb		1	9:22	Hg
Standard #5 (10.0 pp		1	9:25	Hg
ICV		1	9:27	HG
ICB		1	9:29	HG
PQL		1	9:31	HG
CCV		1	9:33	HG
CCB		1	9:35	HG
PBWLC19HGW2		1	9:37	HG
LCSWLC19HGW2		1	9:39	HG
SL2133-020	CHAAP-20B-EB-031518	1	9:42	HG
ZZZZZZ		1	9:44	
ZZZZZZ		1	9:46	
ZZZZZZ		1	9:48	
ZZZZZZ		1	9:50	
ZZZZZZ		1	9:54	
ZZZZZZ		1	9:56	
ZZZZZZ		1	9:58	
CCV		1	10:00	HG
CCB		1	10:02	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20B

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	11:48	Hg
Standard #1 (0.2 ppb		1	11:50	Hg
Standard #2 (0.5 ppb		1	11:53	Hg
Standard #3 (1.0 ppb		1	11:55	Hg
Standard #4 (5.0 ppb		1	11:57	Hg
Standard #5 (10.0 pp		1	11:59	Hg
ICV		1	12:02	HG
ICB		1	12:04	HG
PQL		1	12:07	HG
CCV		1	12:09	HG
CCB		1	12:11	HG
PBSLC19HGS1		1	12:13	HG
LCSOLC19HGS1		1	12:15	HG
SL2133-001	CHAAP-20B-SB01-11	1	12:17	HG
SL2133-002	CHAAP-20B-SB01-4	1	12:19	HG
SL2133-003	CHAAP-20B-SB01-8	1	12:21	HG
SL2133-004	CHAAP-20B-SB02-4	1	12:24	HG
SL2133-005	CHAAP-20B-SB02-8	1	12:26	HG
CCV		1	12:28	HG
CCB		1	12:30	HG
SL2133-006	CHAAP-20B-SB03-4	1	12:35	HG
SL2133-007	CHAAP-20B-SB03-8	1	12:37	HG
SL2133-008	CHAAP-20B-SB04-4	1	12:39	HG
SL2133-009	CHAAP-20B-SB04-8	1	12:41	HG
SL2133-010	CHAAP-20B-SB05-4	1	12:44	HG
SL2133-011	CHAAP-20B-SB05-8	1	12:46	HG
SL2133-012	CHAAP-20B-SB06-4	1	12:48	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20B

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SL2133-013	CHAAP-20B-SB06-8	1	12:50	HG
SL2133-014	CHAAP-20B-SS01	1	12:52	HG
SL2133-015	CHAAP-20B-SS02	1	12:54	HG
CCV		1	12:56	HG
CCB		1	12:59	HG
SL2133-016	CHAAP-20B-SS03	1	13:01	HG
SL2133-017	CHAAP-20B-SS04	1	13:03	HG
SL2133-018	CHAAP-20B-SS05	1	13:05	HG
SL2133-019	CHAAP-20B-SS06	1	13:07	HG
SL2133-019L	CHAAP-20B-SS06L	5	13:09	HG
ZZZZZZ		1	13:11	
ZZZZZZ		1	13:14	
ZZZZZZ		1	13:16	
SL2133-021	CHAAP-20B-SS102	1	13:18	HG
CCV		1	13:20	HG
CCB		1	13:22	HG
PBSLC20HGS1		1	13:24	HG
LCSOLC20HGS1		1	13:26	HG
LC2OLC20HGS1		1	13:30	HG
SL2133-022	CHAAP-20B-SS104	1	13:32	HG
ZZZZZZ		1	13:34	
ZZZZZZ		1	13:37	
ZZZZZZ		1	13:39	
ZZZZZZ		1	13:41	
ZZZZZZ		1	13:43	
ZZZZZZ		1	13:45	
CCV		1	13:47	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC20B

Date: 3/20/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	13:50	HG
ZZZZZZ		1	13:52	
ZZZZZZ		1	13:54	
ZZZZZZ		1	13:56	
ZZZZZZ		1	13:58	
ZZZZZZ		1	14:00	
ZZZZZZ		1	14:03	
SL2133-019A	CHAAP-20B-SS06A	2	14:05	HG
ZZZZZZ		2	14:07	
ZZZZZZ		2	14:09	
CCV		1	14:11	HG
CCB		1	14:13	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC22A

Date: 3/22/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	10:06	Hg
Standard #1 (0.2 ppb		1	10:08	Hg
Standard #2 (0.5 ppb		1	10:10	Hg
Standard #3 (1.0 ppb		1	10:12	Hg
Standard #4 (5.0 ppb		1	10:14	Hg
Standard #5 (10.0 pp		1	10:16	Hg
ICV		1	10:18	HG
ICB		1	10:21	HG
PQL		1	10:23	HG
CCV		1	10:25	HG
CCB		1	10:27	HG
PBSLC21HGS1		1	10:29	HG
LCSOLC21HGS1		1	10:34	HG
ZZZZZZ		1	10:36	
ZZZZZZ		5	10:38	
ZZZZZZ		1	10:40	
ZZZZZZ		1	10:42	
ZZZZZZ		1	10:45	
ZZZZZZ		1	10:47	
ZZZZZZ		1	10:49	
ZZZZZZ		1	10:51	
CCV		1	10:53	HG
CCB		1	10:55	HG
SL2133-019RP	CHAAP-20B-SS06P	1	10:57	HG
SL2133-019RS	CHAAP-20B-SS06S	1	11:00	HG
ZZZZZZ		1	11:02	
ZZZZZZ		1	11:04	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: CETAC M6100 **File Name:** HLC22A

Date: 3/22/2018 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	11:06	
ZZZZZZ		1	11:08	
ZZZZZZ		1	11:10	
ZZZZZZ		1	11:14	
ZZZZZZ		1	11:16	
ZZZZZZ		1	11:18	
CCV		1	11:21	HG
CCB		1	11:23	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	14:01	
200.8 TUNE		1	14:04	
Cal Blank		1	17:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 6		1	17:29	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	17:33	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	17:37	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	17:40	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	17:44	
ICSA		1	17:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	17:53	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	17:57	
ZZZZZZ		1	18:01	
ZZZZZZ		1	18:04	
ZZZZZZ		1	18:09	
ZZZZZZ		1	18:13	
CCV		1	18:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSLC19IMS1		5	18:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSOLC19IMS1		5	18:29	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:33	
ZZZZZZ		5	18:37	
ZZZZZZ		5	18:41	
ZZZZZZ		5	18:45	
ZZZZZZ		5	18:50	
ZZZZZZ		5	18:54	
ZZZZZZ		5	18:58	
ZZZZZZ		1	19:02	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	19:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	19:14	
ZZZZZZ		5	19:19	
ZZZZZZ		25	19:23	
ZZZZZZ		5	19:27	
ZZZZZZ		5	19:31	
ZZZZZZ		5	19:35	
ZZZZZZ		5	19:40	
ZZZZZZ		5	19:44	
ZZZZZZ		5	19:48	
ZZZZZZ		1	19:52	
CCV		1	19:56	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	20:04	
SL2133-001	CHAAP-20B-SB01-11	5	20:09	Al Sb Ba Be Ca Pb Mg K Na Tl
SL2133-002	CHAAP-20B-SB01-4	5	20:13	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-003	CHAAP-20B-SB01-8	5	20:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-004	CHAAP-20B-SB02-4	5	20:21	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-005	CHAAP-20B-SB02-8	5	20:25	Al Sb Ba Be Ca Pb Mg K Na Tl
SL2133-006	CHAAP-20B-SB03-4	5	20:30	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-007	CHAAP-20B-SB03-8	5	20:34	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	20:38	
ZZZZZZ		5	20:42	
CCV		1	20:47	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:51	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSLC20IMS1		5	20:55	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
LCSOLC20IMS1		5	20:59	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-008	CHAAP-20B-SB04-4	5	21:03	Sb Ba Be Pb Mg K Na Tl
SL2133-009	CHAAP-20B-SB04-8	5	21:07	Sb Ba Be Ca Pb Mg K Na Tl
SL2133-010	CHAAP-20B-SB05-4	5	21:12	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-011	CHAAP-20B-SB05-8	5	21:16	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-012	CHAAP-20B-SB06-4	5	21:20	Sb Ba Be Ca Pb Mg K Na Tl
SL2133-013	CHAAP-20B-SB06-8	5	21:24	Sb Ba Be Ca Pb Mg K Na Tl
SL2133-014	CHAAP-20B-SS01	5	21:29	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	21:33	
CCV		1	21:37	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	21:41	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL2133-015	CHAAP-20B-SS02	5	21:46	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-016	CHAAP-20B-SS03	5	21:50	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-017	CHAAP-20B-SS04	5	21:54	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-018	CHAAP-20B-SS05	5	21:58	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019	CHAAP-20B-SS06	5	22:03	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019L	CHAAP-20B-SS06L	25	22:07	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019A	CHAAP-20B-SS06A	5	22:11	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019S	CHAAP-20B-SS06S	5	22:15	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-019P	CHAAP-20B-SS06P	5	22:20	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	22:24	
CCV		1	22:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	22:32	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SL2133-021	CHAAP-20B-SS102	5	22:37	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SL2133-022	CHAAP-20B-SS104	5	22:41	Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	22:45	
ZZZZZZ		1	22:49	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC20C

Date: 3/20/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
PBWLC19IMW2		5	22:53	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
LCSWLC19IMW2		5	22:58	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
SL2133-020	CHAAP-20B-EB-031518	5	23:02	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
ZZZZZZ		5	23:06	
ZZZZZZ		5	23:10	
ZZZZZZ		1	23:14	
CCV		1	23:18	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	23:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC21A

Date: 3/21/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
6020 TUNE		1	14:00							
200.8 TUNE		1	14:03							
Cal Blank		1	14:49	Al	Ca	Fe	Mg	Mo	K	Na
Cal Std 6		1	14:53	Al	Ca	Fe	Mg	Mo	K	Na
ICV		1	14:56	Al	Ca	Fe	Mg	Mo	K	Na
ICB		1	15:00	Al	Ca	Fe	Mg	Mo	K	Na
PQL		1	15:03	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:07							
ICSA		1	15:11	Al	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	15:15	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	15:18							
ZZZZZZ		1	15:22							
ZZZZZZ		1	15:25							
ZZZZZZ		1	15:29							
ZZZZZZ		1	15:33							
CCV		1	15:37	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	15:40	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	15:44							
ZZZZZZ		10	15:48							
ZZZZZZ		5	15:52							
ZZZZZZ		10	15:56							
ZZZZZZ		5	16:00							
ZZZZZZ		10	16:04							
SL2133-004	CHAAP-20B-SB02-4	10	16:08		Ca					
ZZZZZZ		5	16:11							
ZZZZZZ		10	16:15							
ZZZZZZ		1	16:19							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC21A

Date: 3/21/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements					
CCV		1	16:23	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	16:27	Al	Ca	Fe	Mg	Mo	K	Na
PBSLC20IMS1		5	16:31	Al						
LCSOLC20IMS1		5	16:35	Al						
SL2133-008	CHAAP-20B-SB04-4	5	16:39	Al						
SL2133-008	CHAAP-20B-SB04-4	10	16:43		Ca					
SL2133-009	CHAAP-20B-SB04-8	5	16:47	Al						
ZZZZZZ		10	16:51							
SL2133-010	CHAAP-20B-SB05-4	5	16:55	Al						
SL2133-011	CHAAP-20B-SB05-8	5	16:59	Al						
SL2133-012	CHAAP-20B-SB06-4	5	17:03	Al						
ZZZZZZ		1	17:07							
CCV		1	17:11	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	17:15	Al	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		10	17:19							
SL2133-013	CHAAP-20B-SB06-8	5	17:23	Al						
ZZZZZZ		10	17:27							
SL2133-014	CHAAP-20B-SS01	5	17:31	Al						
SL2133-015	CHAAP-20B-SS02	5	17:36	Al						
SL2133-016	CHAAP-20B-SS03	5	17:40	Al						
SL2133-017	CHAAP-20B-SS04	5	17:44	Al						
SL2133-018	CHAAP-20B-SS05	5	17:48	Al						
SL2133-019	CHAAP-20B-SS06	5	17:52	Al						
ZZZZZZ		1	17:56							
CCV		1	18:00	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	18:04	Al	Ca	Fe	Mg	Mo	K	Na
SL2133-019L	CHAAP-20B-SS06L	25	18:08	Al						

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC21A

Date: 3/21/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements					
SL2133-019A	CHAAP-20B-SS06A	5	18:12	Al					
SL2133-019S	CHAAP-20B-SS06S	5	18:16	Al					
SL2133-019P	CHAAP-20B-SS06P	5	18:20	Al					
SL2133-021	CHAAP-20B-SS102	5	18:25	Al					
SL2133-022	CHAAP-20B-SS104	5	18:29	Al					
ZZZZZZ		1	18:33						
ZZZZZZ		1	18:37						
ZZZZZZ		5	18:41						
ZZZZZZ		5	18:45						
CCV		1	18:49	Al	Ca	Fe	Mg	Mo	K	Na
CCB		1	18:53	Al	Ca	Fe	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC22E

Date: 3/22/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	13:55	
200.8 TUNE		1	13:57	
Cal Blank		1	17:09	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std 6		1	17:13	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	17:17	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	17:21	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	17:25	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	17:29	
ICSA		1	17:33	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	17:37	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	17:41	
ZZZZZZ		1	17:45	
ZZZZZZ		1	17:49	
ZZZZZZ		1	17:53	
ZZZZZZ		1	17:57	
CCV		1	18:01	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	18:05	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	18:09	
ZZZZZZ		5	18:13	
ZZZZZZ		5	18:18	
SL2133-005	CHAAP-20B-SB02-8	5	18:22	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-008	CHAAP-20B-SB04-4	5	18:26	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-009	CHAAP-20B-SB04-8	5	18:30	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-012	CHAAP-20B-SB06-4	5	18:34	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
SL2133-013	CHAAP-20B-SB06-8	5	18:38	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
ZZZZZZ		1	18:42	
ZZZZZZ		1	18:46	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC22E

Date: 3/22/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																			
CCV		1	18:50	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
CCB		1	18:54	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
ZZZZZZ		5	18:58																				
ZZZZZZ		5	19:03																				
ZZZZZZ		5	19:06																				
ZZZZZZ		5	19:11																				
ZZZZZZ		5	19:15																				
ZZZZZZ		5	19:19																				
ZZZZZZ		1	19:24																				
ZZZZZZ		1	19:28																				
ZZZZZZ		5	19:32																				
ZZZZZZ		5	19:36																				
CCV		1	19:40	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
CCB		1	19:44	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
ZZZZZZ		5	19:48																				
ZZZZZZ		5	19:53																				
ZZZZZZ		5	19:57																				
ZZZZZZ		5	20:01																				
ZZZZZZ		5	20:05																				
ZZZZZZ		5	20:10																				
ZZZZZZ		5	20:14																				
ZZZZZZ		5	20:18																				
ZZZZZZ		25	20:23																				
ZZZZZZ		1	20:27																				
CCV		1	20:31	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
CCB		1	20:35	Al	As	Cd	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	V	Zn		
ZZZZZZ		5	20:39																				

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC22E

Date: 3/22/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	20:44	
ZZZZZZ		5	20:48	
ZZZZZZ		5	20:52	
ZZZZZZ		5	20:57	
ZZZZZZ		5	21:01	
ZZZZZZ		5	21:05	
ZZZZZZ		5	21:10	
ZZZZZZ		5	21:14	
ZZZZZZ		1	21:18	
CCV		1	21:22	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	21:27	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		5	21:31	
ZZZZZZ		5	21:35	
ZZZZZZ		1	21:39	
PBWLC19IMW2		5	21:43	Zn
LCSWLC19IMW2		5	21:48	Zn
ZZZZZZ		5	21:52	
ZZZZZZ		5	21:56	
SL2133-020	CHAAP-20B-EB-031518	5	22:00	Zn
ZZZZZZ		1	22:04	
ZZZZZZ		1	22:08	
CCV		1	22:13	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	22:17	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC26B

Date: 3/26/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
6020 TUNE		1	13:56	
200.8 TUNE		1	13:59	
Cal Blank		1	16:14	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
Cal Std 6		1	16:18	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICV		1	16:22	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICB		1	16:26	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
PQL		1	16:29	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	16:33	
ICSA		1	16:37	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ICSAB		1	16:41	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	16:46	
ZZZZZZ		1	16:49	
ZZZZZZ		1	16:53	
ZZZZZZ		1	16:57	
ZZZZZZ		1	17:01	
CCV		1	17:05	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	17:09	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		1	17:13	
ZZZZZZ		1	17:17	
ZZZZZZ		1	17:21	
ZZZZZZ		1	17:25	
ZZZZZZ		1	17:29	
ZZZZZZ		1	17:33	
ZZZZZZ		1	17:37	
ZZZZZZ		1	17:41	
ZZZZZZ		5	17:45	
ZZZZZZ		10	17:49	

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SL2133

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JLC26B

Date: 3/26/2018 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	17:53	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	17:57	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
ZZZZZZ		20	18:02	
SL2133-001	CHAAP-20B-SB01-11	5	18:06	As Cd Cr Co Cu Fe Mn Ni Se Ag V Zn
ZZZZZZ		10	18:10	
ZZZZZZ		20	18:14	
ZZZZZZ		1	18:18	
ZZZZZZ		1	18:22	
ZZZZZZ		5	18:26	
ZZZZZZ		1	18:30	
ZZZZZZ		1	18:34	
ZZZZZZ		1	18:38	
CCV		1	18:42	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn
CCB		1	18:46	Al As Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na V Zn

Raw Data Section

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: Cetac M6100 (H) **ANALYST:** JS **ANALYSIS DATE:** 03/20/2018

FILE NAME: HLC20A **METHOD: CVAA**

☑ 245.1
☑ 7470
☐ 7471
☑ DoD
☐ _____

REVIEWED
MD 3/20/18
KATAHDIN ANALYTICAL
METALS SECTION

Analyte : Mercury

$SnCl_2$ Lot : MR1969

STANDARDS USED:

Standard Name	Prep. Date	Expiration Date	Standard Conc.
Cal. Blank / ICB / CCB	03/20/2018	06/30/2018	0.00 ug/L
Standard #1 / PQL	03/20/2018	06/30/2018	0.20 ug/L
Standard #2	03/20/2018	06/30/2018	0.50 ug/L
Standard #3	03/20/2018	06/30/2018	1.00 ug/L
Standard #4	03/20/2018	06/30/2018	5.00 ug/L
Standard #5	03/20/2018	06/30/2018	10.00 ug/L
ICV	03/20/2018	03/31/2018	6.00 ug/L

Additional Comments and Notes:

MD 3/20/18

Post Spike (245.1/7470): 0.005 mL MS2112 (pipet M17) into 8.0mL (pipet M12) of sample

Post Spike (7471): 0.008 mL MS2112 (pipet M17) into 8.0mL (pipet M12) of sample

5x Dilution: 1.6mL (pipet M12) of sample + 6.4mL (pipet M12) of Cal. Blank

O flag: Sample concentration over calibration, re-analyzed at dilution

Q flag: Analytical run QC outside laboratory limits

INSTRUMENT RUNLOG

Instrument: CETAC M6100

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
Calibration Blank	1.0000	HLC20A	3/20/2018	9:14	JS
Standard #1 (0.2 ppb)	1.0000	HLC20A	3/20/2018	9:16	JS
Standard #2 (0.5 ppb)	1.0000	HLC20A	3/20/2018	9:18	JS
Standard #3 (1.0 ppb)	1.0000	HLC20A	3/20/2018	9:20	JS
Standard #4 (5.0 ppb)	1.0000	HLC20A	3/20/2018	9:22	JS
Standard #5 (10.0 ppb)	1.0000	HLC20A	3/20/2018	9:25	JS
ICV	1.0000	HLC20A	3/20/2018	9:27	JS
ICB	1.0000	HLC20A	3/20/2018	9:29	JS
PQL	1.0000	HLC20A	3/20/2018	9:31	JS
CCV	1.0000	HLC20A	3/20/2018	9:33	JS
CCB	1.0000	HLC20A	3/20/2018	9:35	JS
PBWLC19HGW2	1.0000	HLC20A	3/20/2018	9:37	JS
LCSWLC19HGW2	1.0000	HLC20A	3/20/2018	9:39	JS
SL2133-020	1.0000	HLC20A	3/20/2018	9:42	JS
SL2137-002	1.0000	HLC20A	3/20/2018	9:44	JS
PBWLC19HGW1	1.0000	HLC20A	3/20/2018	9:46	JS
LCSWLC19HGW1	1.0000	HLC20A	3/20/2018	9:48	JS
SL2039-001	1.0000	HLC20A	3/20/2018	9:50	JS
SL2088-001	1.0000	HLC20A	3/20/2018	9:54	JS
SL2052-001	1.0000	HLC20A	3/20/2018	9:56	JS
LCSWLC19HGW1	1.0000	HLC20A	3/20/2018	9:58	JS
CCV	1.0000	HLC20A	3/20/2018	10:00	JS
CCB	1.0000	HLC20A	3/20/2018	10:02	JS
SL2153-001	1.0000	HLC20A	3/20/2018	10:05	JS
SL2154-001	1.0000	HLC20A	3/20/2018	10:07	JS
SL2155-001	1.0000	HLC20A	3/20/2018	10:09	JS
SL2156-001	1.0000	HLC20A	3/20/2018	10:11	JS
SL2158-001	1.0000	HLC20A	3/20/2018	10:13	JS
SL2160-004	1.0000	HLC20A	3/20/2018	10:15	JS
SL2160-004L	5.0000	HLC20A	3/20/2018	10:17	JS
SL2160-004S	1.0000	HLC20A	3/20/2018	10:20	JS
SL2160-004P	1.0000	HLC20A	3/20/2018	10:22	JS
SL2160-005	1.0000	HLC20A	3/20/2018	10:24	JS
CCV	1.0000	HLC20A	3/20/2018	10:26	JS
CCB	1.0000	HLC20A	3/20/2018	10:28	JS

JS 3.21.18

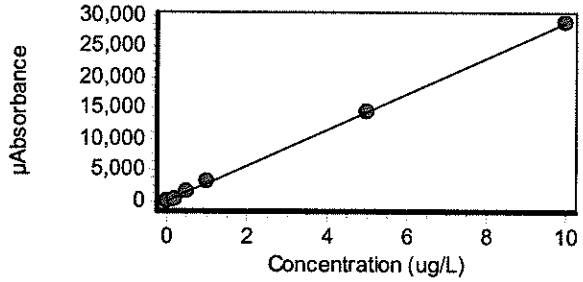
Report Generated By CETAC QuickTrace
Analyst: kasgc
Worksheet file: C:\Program Files\QuickTrace\Worksheets\HLC20A.wsz
Date Started: 3/20/2018 8:31:23 AM
Comment:

Results

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Calibration Blank				STD	03/20/18 09:14:25 am	0.000	-5	459.84		1.00
Replicates	4.4	-37.2	2.0	11.7						
Standard #1 (0.2 ppb)				STD	03/20/18 09:16:31 am	0.200	461	6.62		1.00
Replicates	499.4	441.0	432.8	472.5						
Standard #2 (0.5 ppb)				STD	03/20/18 09:18:38 am	0.500	1482	2.25		1.00
Replicates	1495.5	1504.4	1496.1	1432.6						
Standard #3 (1.0 ppb)				STD	03/20/18 09:20:46 am	1.000	3267	0.75		1.00
Replicates	3245.8	3270.9	3251.1	3300.1						
Standard #4 (5.0 ppb)				STD	03/20/18 09:22:54 am	5.000	14560	0.77		1.00
Replicates	14577.7	14653.5	14611.3	14399.5						
Standard #5 (10.0 ppb)				STD	03/20/18 09:25:02 am	10.000	28845	0.16		1.00
Replicates	28871.2	28837.6	28887.6	28784.1						

Calibration

Equation: A = 78.771 + 2882.561C
R2: 0.99978
SEE: 192.1306
Flags:



ICV				ICV	03/20/18 09:27:12 am	5.983	17326	0.34		1.00
Replicates	17403.2	17314.5	17327.0	17261.0						
% Recovery	99.72									
ICB				ICB	03/20/18 09:29:18 am	-0.040	-37	52.19		1.00
Replicates	-20.5	-23.5	-62.5	-42.5						

Katahdin Analytical Services 4000136

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL					CRDL	03/20/18 09:31:24 am	0.172	574	4.40		1.00
	Replicates	562.6	601.5	586.5	544.5						
	% Recovery	85.87									
CCV					CCV	03/20/18 09:33:32 am	4.958	14370	0.19		1.00
	Replicates	14347.3	14361.9	14409.2	14361.4						
	% Recovery	99.16									
CCB					CCB	03/20/18 09:35:39 am	-0.035	-23	108.55		1.00
	Replicates	-44.4	4.5	-44.8	-8.3						
PBWLC19HGW2					PBK	03/20/18 09:37:46 am	-0.008	55	38.32		1.00
	Replicates	30.2	64.3	79.6	47.8						
LCSWLC19HGW2					LCS	03/20/18 09:39:53 am	4.601	13342	2.38		1.00
	Replicates	13806.2	13281.6	13159.1	13121.4						
	% Recovery	92.02									
SL2133-020					UNK	03/20/18 09:42:01 am	-0.035	-21	53.82		1.00
	Replicates	-8.9	-14.2	-28.7	-32.6						
SL2137-002					UNK	03/20/18 09:44:09 am	0.000	80	10.69		1.00
	Replicates	76.2	72.5	92.1	79.1						
PBWLC19HGW1					PBK	03/20/18 09:46:17 am	-0.006	61	19.59		1.00
	Replicates	73.0	48.3	68.8	53.2						
LCSWLC19HGW1					LCS	03/20/18 09:48:25 am	4.060	11781	0.57	JS 3.20.18	1.00
	Replicates	11795.0	11688.0	11789.5	11850.1						
	% Recovery	81.19								Outside 245.1 limits, reanalyzed	
SL2039-001					UNK	03/20/18 09:50:33 am	-0.018	27	100.93		1.00
	Replicates	31.1	32.5	53.7	-10.6						
SL2088-001					UNK	03/20/18 09:54:21 am	0.017	128	41.05		1.00
	Replicates	185.1	158.1	100.4	69.7						
SL2052-001					~~LCS~~ UNK MD 3/20/18	03/20/18 09:56:30 am	-0.004	66	30.08		1.00
	Replicates	60.4	72.7	42.6	89.9						
JS 3.21.18	~~% Recovery~~	~~-0.09~~				JS 3.20.18				Inappropriately flagged	

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
LCSWLC19HGW1				LCS	03/20/18 09:58:39 am	4.840	14030	0.40		1.00
Replicates	13968.1	14006.9	14101.8	14041.9						
% Recovery	96.80									
CCV				CCV	03/20/18 10:00:47 am	5.135	14881	0.50		1.00
Replicates	14950.7	14920.6	14869.5	14781.5						
% Recovery	102.70									
CCB				CCB	03/20/18 10:02:54 am	-0.034	-18	95.74		1.00
Replicates	3.5	-25.9	-37.1	-13.3						
SL2153-001				UNK	03/20/18 10:05:02 am	-0.008	56	31.71		1.00
Replicates	74.4	48.6	67.7	35.2						
SL2154-001				UNK	03/20/18 10:07:10 am	0.041	197	5.54		1.00
Replicates	186.8	190.5	211.5	197.8						
SL2155-001				UNK	03/20/18 10:09:18 am	0.429	1315	2.12		1.00
Replicates	1289.3	1354.8	1308.6	1307.4						
SL2156-001				UNK	03/20/18 10:11:27 am	1.095	3234	1.68		1.00
Replicates	3178.3	3200.9	3297.4	3258.9						
SL2158-001				UNK	03/20/18 10:13:35 am	-0.028	-2	208.52		1.00
Replicates	3.7	32.0	-51.8	9.7						
SL2160-004				UNK	03/20/18 10:15:45 am	0.008	102	15.33		1.00
Replicates	84.0	107.1	120.3	95.3						
SL2160-004L				UNK	03/20/18 10:17:53 am	-0.138	-1	145.78		5.00
Replicates	-6.4	26.5	-40.0	17.0						
SL2160-004S				UNK	03/20/18 10:20:01 am	1.019	3015	0.81		1.00
Replicates	3001.9	3017.6	3048.0	2992.3						
SL2160-004P				UNK	03/20/18 10:22:10 am	1.048	3101	0.71		1.00
Replicates	3078.3	3085.7	3117.9	3121.4						

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: Cetac M6100 (H) **ANALYST**: JS **ANALYSIS DATE**: 03/20/2018

FILE NAME: HLC20B **METHOD**: CVAA

☐ 245.1
☐ 7470
☑ 7471
☑ DoD
☐ _____

REVIEWED
MD 3/20/18
KATAHDIN ANALYTICAL
METALS SECTION

Analyte : Mercury

$SnCl_2$ Lot : MR1969

STANDARDS USED:

Standard Name	Prep. Date	Expiration Date	Standard Conc.
Cal. Blank / ICB / CCB	03/20/2018	06/30/2018	0.00 ug/L
Standard #1 / PQL	03/20/2018	06/30/2018	0.20 ug/L
Standard #2	03/20/2018	06/30/2018	0.50 ug/L
Standard #3	03/20/2018	06/30/2018	1.00 ug/L
Standard #4	03/20/2018	06/30/2018	5.00 ug/L
Standard #5	03/20/2018	06/30/2018	10.00 ug/L
ICV	03/20/2018	03/31/2018	6.00 ug/L

Additional Comments and Notes:

MP 3/20/18

Post Spike (245.1/7470): 0.005 mL MS2112 (pipet M17) into 8.0mL (pipet M12) of sample

Post Spike (7471): 0.008 mL MS2112 (pipet M17) into 8.0mL (pipet M12) of sample

5x Dilution: 1.6mL (pipet M12) of sample + 6.4mL (pipet M12) of Cal. Blank

2x Dilution: 4.0mL (pipet M12) of sample + 4.0mL (pipet M12) of Cal. Blank

O flag: Sample concentration over calibration, re-analyzed at dilution

Q flag: Analytical run QC outside laboratory limits

INSTRUMENT RUNLOG

Instrument: CETAC M6100

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
Calibration Blank	1.0000	HLC20B	3/20/2018	11:48	JS
Standard #1 (0.2 ppb)	1.0000	HLC20B	3/20/2018	11:50	JS
Standard #2 (0.5 ppb)	1.0000	HLC20B	3/20/2018	11:53	JS
Standard #3 (1.0 ppb)	1.0000	HLC20B	3/20/2018	11:55	JS
Standard #4 (5.0 ppb)	1.0000	HLC20B	3/20/2018	11:57	JS
Standard #5 (10.0 ppb)	1.0000	HLC20B	3/20/2018	11:59	JS
ICV	1.0000	HLC20B	3/20/2018	12:02	JS
ICB	1.0000	HLC20B	3/20/2018	12:04	JS
PQL	1.0000	HLC20B	3/20/2018	12:07	JS
CCV	1.0000	HLC20B	3/20/2018	12:09	JS
CCB	1.0000	HLC20B	3/20/2018	12:11	JS
PBSLC19HGS1	1.0000	HLC20B	3/20/2018	12:13	JS
LCSOLC19HGS1	1.0000	HLC20B	3/20/2018	12:15	JS
SL2133-001	1.0000	HLC20B	3/20/2018	12:17	JS
SL2133-002	1.0000	HLC20B	3/20/2018	12:19	JS
SL2133-003	1.0000	HLC20B	3/20/2018	12:21	JS
SL2133-004	1.0000	HLC20B	3/20/2018	12:24	JS
SL2133-005	1.0000	HLC20B	3/20/2018	12:26	JS
CCV	1.0000	HLC20B	3/20/2018	12:28	JS
CCB	1.0000	HLC20B	3/20/2018	12:30	JS
SL2133-006	1.0000	HLC20B	3/20/2018	12:35	JS
SL2133-007	1.0000	HLC20B	3/20/2018	12:37	JS
SL2133-008	1.0000	HLC20B	3/20/2018	12:39	JS
SL2133-009	1.0000	HLC20B	3/20/2018	12:41	JS
SL2133-010	1.0000	HLC20B	3/20/2018	12:44	JS
SL2133-011	1.0000	HLC20B	3/20/2018	12:46	JS
SL2133-012	1.0000	HLC20B	3/20/2018	12:48	JS
SL2133-013	1.0000	HLC20B	3/20/2018	12:50	JS
SL2133-014	1.0000	HLC20B	3/20/2018	12:52	JS
SL2133-015	1.0000	HLC20B	3/20/2018	12:54	JS
CCV	1.0000	HLC20B	3/20/2018	12:56	JS
CCB	1.0000	HLC20B	3/20/2018	12:59	JS
SL2133-016	1.0000	HLC20B	3/20/2018	13:01	JS
SL2133-017	1.0000	HLC20B	3/20/2018	13:03	JS
SL2133-018	1.0000	HLC20B	3/20/2018	13:05	JS
SL2133-019	1.0000	HLC20B	3/20/2018	13:07	JS
SL2133-019L	5.0000	HLC20B	3/20/2018	13:09	JS
SL2133-019A	1.0000	HLC20B	3/20/2018	13:11	JS
SL2133-019S	1.0000	HLC20B	3/20/2018	13:14	JS
SL2133-019P	1.0000	HLC20B	3/20/2018	13:16	JS
SL2133-021	1.0000	HLC20B	3/20/2018	13:18	JS
CCV	1.0000	HLC20B	3/20/2018	13:20	JS
CCB	1.0000	HLC20B	3/20/2018	13:22	JS
PBSLC20HGS1	1.0000	HLC20B	3/20/2018	13:24	JS

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
LCSOLC20HGS1	1.0000	HLC20B	3/20/2018	13:26	JS
LC2OLC20HGS1	1.0000	HLC20B	3/20/2018	13:30	JS
SL2133-022	1.0000	HLC20B	3/20/2018	13:32	JS
SL2135-001	1.0000	HLC20B	3/20/2018	13:34	JS
SL2135-002	1.0000	HLC20B	3/20/2018	13:37	JS
SL2188-001	1.0000	HLC20B	3/20/2018	13:39	JS
SL2188-001L	1.0000	HLC20B	3/20/2018	13:41	JS
SL2188-001A	1.0000	HLC20B	3/20/2018	13:43	JS
SL2188-001S	1.0000	HLC20B	3/20/2018	13:45	JS
CCV	1.0000	HLC20B	3/20/2018	13:47	JS
CCB	1.0000	HLC20B	3/20/2018	13:50	JS
SL2188-001P	1.0000	HLC20B	3/20/2018	13:52	JS
SL2291-001	1.0000	HLC20B	3/20/2018	13:54	JS
SL2291-002	1.0000	HLC20B	3/20/2018	13:56	JS
SL2292-001	1.0000	HLC20B	3/20/2018	13:58	JS
SL2292-002	1.0000	HLC20B	3/20/2018	14:00	JS
RINSE	1.0000	HLC20B	3/20/2018	14:03	JS
SL2133-019A	2.0000	HLC20B	3/20/2018	14:05	JS
SL2133-019S	2.0000	HLC20B	3/20/2018	14:07	JS
SL2133-019P	2.0000	HLC20B	3/20/2018	14:09	JS
CCV	1.0000	HLC20B	3/20/2018	14:11	JS
CCB	1.0000	HLC20B	3/20/2018	14:13	JS

MD 3/22/18

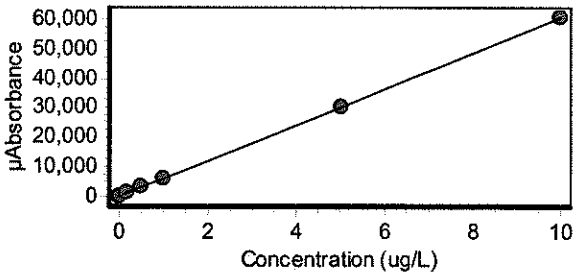
Report Generated By CETAC QuickTrace
Analyst: kasgc
Worksheet file: C:\Program Files\QuickTrace\Worksheets\HLC20B.wsz
Date Started: 3/20/2018 11:46:26 AM
Comment:

Results

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Calibration Blank				STD	03/20/18 11:48:48 am	0.000	3	279.11		1.00
Replicates	-21.8	-34.8	36.7	31.2						
Standard #1 (0.2 ppb)				STD	03/20/18 11:50:54 am	0.200	1260	1.44		1.00
Replicates	1274.8	1259.1	1234.8	1271.3						
Standard #2 (0.5 ppb)				STD	03/20/18 11:53:01 am	0.500	3138	0.98		1.00
Replicates	3165.8	3156.6	3097.1	3131.3						
Standard #3 (1.0 ppb)				STD	03/20/18 11:55:09 am	1.000	6354	1.24		1.00
Replicates	6447.0	6361.7	6351.9	6255.1						
Standard #4 (5.0 ppb)				STD	03/20/18 11:57:17 am	5.000	30219	1.27		1.00
Replicates	30695.9	30338.2	30030.4	29812.0						
Standard #5 (10.0 ppb)				STD	03/20/18 11:59:25 am	10.000	60653	1.01		1.00
Replicates	61478.2	60746.8	60267.0	60120.8						

Calibration

Equation: A = 95.116 + 6051.262C
R2: 0.99997
SEE: 135.5612
Flags:



ICV				ICV	03/20/18 12:02:49 pm	5.909	35850	2.85		1.00
Replicates	35295.1	34970.9	35850.2	37283.4						
% Recovery	98.48									
ICB				ICB	03/20/18 12:04:55 pm	-0.013	15	114.23		1.00
Replicates	21.0	21.0	-10.2	29.8						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL					CRDL	03/20/18 12:07:02 pm	0.204	1332	2.24		1.00
	Replicates	1342.3	1287.3	1346.5	1350.8						
	% Recovery	102.18									
CCV					CCV	03/20/18 12:09:10 pm	4.648	28220	0.90		1.00
	Replicates	28568.0	28236.7	28088.2	27986.9						
	% Recovery	92.96									
CCB					CCB	03/20/18 12:11:16 pm	-0.013	16	143.09		1.00
	Replicates	6.2	23.4	43.4	-9.5						
PBSLC19HGS1					PBK	03/20/18 12:13:23 pm	-0.011	26	40.45		1.00
	Replicates	18.0	17.7	39.7	27.1						
LCSOLC19HGS1					LCS	03/20/18 12:15:31 pm	5.306	32205	0.91		1.00
	Replicates	32625.1	32062.2	31965.2	32165.8						
	% Recovery	106.12									
SL2133-001					UNK	03/20/18 12:17:38 pm	0.118	810	5.77		1.00
	Replicates	793.7	870.6	815.9	759.3						
SL2133-002					UNK	03/20/18 12:19:46 pm	0.122	832	3.29		1.00
	Replicates	826.9	839.2	797.2	863.0						
SL2133-003					UNK	03/20/18 12:21:55 pm	0.111	768	3.94		1.00
	Replicates	812.3	744.2	755.0	761.3						
SL2133-004					UNK	03/20/18 12:24:02 pm	0.141	949	5.90		1.00
	Replicates	866.0	984.9	977.7	969.0						
SL2133-005					UNK	03/20/18 12:26:10 pm	0.097	685	4.54		1.00
	Replicates	711.5	670.8	647.6	709.4						
CCV					CCV	03/20/18 12:28:18 pm	5.326	32325	1.11		1.00
	Replicates	32790.1	32424.7	32063.8	32021.7						
	% Recovery	106.52									
CCB					CCB	03/20/18 12:30:25 pm	-0.011	30	66.71		1.00
	Replicates	24.0	5.9	53.2	37.9						

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
SL2133-006					UNK	03/20/18 12:35:31 pm	0.112	770	9.21		1.00
Replicates	848.0	795.6	754.6	680.0							
SL2133-007					UNK	03/20/18 12:37:40 pm	0.118	809	3.01		1.00
Replicates	820.9	773.5	812.6	828.0							
SL2133-008					UNK	03/20/18 12:39:48 pm	0.132	895	2.84		1.00
Replicates	901.3	867.3	883.3	926.4							
SL2133-009					UNK	03/20/18 12:41:56 pm	0.113	779	3.85		1.00
Replicates	823.5	757.2	768.0	767.9							
SL2133-010					UNK	03/20/18 12:44:04 pm	0.124	847	2.66		1.00
Replicates	816.9	844.5	869.0	858.2							
SL2133-011					UNK	03/20/18 12:46:13 pm	0.114	786	2.88		1.00
Replicates	810.5	796.5	779.2	758.0							
SL2133-012					UNK	03/20/18 12:48:22 pm	0.110	762	1.10		1.00
Replicates	767.2	750.5	759.8	768.8							
SL2133-013					UNK	03/20/18 12:50:31 pm	0.105	733	5.27		1.00
Replicates	749.5	777.1	714.5	689.3							
SL2133-014					UNK	03/20/18 12:52:39 pm	0.054	419	2.36		1.00
Replicates	416.4	419.5	432.0	408.2							
SL2133-015					UNK	03/20/18 12:54:47 pm	1.066	6547	1.43		1.00
Replicates	6674.3	6558.5	6463.9	6491.4							
CCV					CCV	03/20/18 12:56:55 pm	5.388	32698	0.62		1.00
Replicates	32835.4	32434.5	32649.7	32874.3							
% Recovery	107.76										
CCB					CCB	03/20/18 12:59:02 pm	-0.022	-38	33.33		1.00
Replicates	-23.2	-31.9	-47.8	-49.6							

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
SL2133-016				UNK	03/20/18 01:01:10 pm	2.559	15583	1.24		1.00
Replicates	15843.0	15602.8	15490.3	15394.7						
SL2133-017				UNK	03/20/18 01:03:20 pm	0.290	1848	4.06		1.00
Replicates	1932.3	1883.3	1816.0	1761.2						
SL2133-018				UNK	03/20/18 01:05:29 pm	0.117	805	4.81		1.00
Replicates	860.1	803.7	780.0	776.0						
SL2133-019				UNK	03/20/18 01:07:38 pm	1.933	11791	1.53		1.00
Replicates	12019.1	11848.6	11678.5	11618.6						
SL2133-019L				UNK	03/20/18 01:09:46 pm	1.962	2470	1.66		5.00
Replicates	2527.3	2468.7	2432.8	2450.3						
SL2133-019A				UNK	03/20/18 01:11:55 pm	2.655	16163	1.52		1.00
Replicates	16453.2	16276.4	16000.5	15923.5						
SL2133-019S				UNK	03/20/18 01:14:05 pm	2.365	14404	2.06		1.00
Replicates	14787.0	14481.3	14229.5	14120.0						
SL2133-019P				UNK	03/20/18 01:16:15 pm	2.179	13283	2.25		1.00
Replicates	13648.8	13400.1	13085.7	12998.6						
SL2133-021				UNK	03/20/18 01:18:23 pm	0.923	5683	1.45		1.00
Replicates	5790.0	5686.2	5665.6	5590.4						
CCV				CCV	03/20/18 01:20:32 pm	4.595	27899	1.23		1.00
Replicates	28343.5	27988.8	27664.8	27599.1						
% Recovery	91.89									
CCB				CCB	03/20/18 01:22:38 pm	-0.018	-15	186.87		1.00
Replicates	19.4	-24.2	-47.7	-7.9						
PBSLC20HGS1				PBK	03/20/18 01:24:47 pm	-0.005	63	43.79		1.00
Replicates	60.6	93.1	71.4	26.9						

3/23/2018

re-analyzed to confirm results

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
LCSOLC20HGS1				LCS	03/20/18 01:26:57 pm	5.185	31473	1.41		1.00
Replicates	32058.0	31558.1	31225.6	31050.6						
% Recovery	103.71									
LC2OLC20HGS1				LCS	03/20/18 01:30:37 pm	4.844	29405	1.81		1.00
Replicates	30090.9	29535.1	29117.6	28877.0						
% Recovery	96.87									
SL2133-022				UNK	03/20/18 01:32:47 pm	0.156	1039	3.29		1.00
Replicates	1049.9	1080.4	1024.4	1000.7						
SL2135-001				UNK	03/20/18 01:34:56 pm	1.347	8248	0.93		1.00
Replicates	8362.0	8211.4	8200.7	8216.2						
SL2135-002				UNK	03/20/18 01:37:06 pm	1.096	6724	0.17		1.00
Replicates	6741.0	6720.6	6716.5	6719.5						
SL2188-001				UNK	03/20/18 01:39:16 pm	0.358	2263	1.43		1.00
Replicates	2286.1	2217.7	2262.2	2286.5						
SL2188-001L				UNK	03/20/18 01:41:26 pm	0.056	435	6.20		1.00
Replicates	474.0	424.7	426.3	413.3						
SL2188-001A				UNK	03/20/18 01:43:36 pm	0.946	5820	2.73		1.00
Replicates	5997.6	5894.8	5753.6	5635.8						
SL2188-001S				UNK	03/20/18 01:45:46 pm	1.073	6586	2.67		1.00
Replicates	6794.9	6662.1	6478.5	6408.1						
CCV				CCV	03/20/18 01:47:54 pm	4.983	30252	1.06		1.00
Replicates	30645.3	30350.3	30111.8	29898.8						
% Recovery	99.67									
CCB				CCB	03/20/18 01:50:00 pm	-0.021	-30	55.26		1.00
Replicates	-34.1	-7.9	-31.3	-48.6						
SL2188-001P				UNK	03/20/18 01:52:10 pm	1.213	7438	1.98		1.00
Replicates	7614.0	7499.5	7349.6	7288.1						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
SL2291-001				UNK	03/20/18 01:54:20 pm	0.955	5871	2.51		1.00
Replicates	6024.1	5960.2	5800.4	5700.9						
SL2291-002				UNK	03/20/18 01:56:31 pm	0.667	4129	4.27		1.00
Replicates	4354.4	4164.4	4061.9	3937.2						
SL2292-001				UNK	03/20/18 01:58:41 pm	6.975	42303	4.35		1.00
Replicates	44709.9	42706.9	41263.4	40530.5						
SL2292-002 MP 3/22/18				UNK	03/20/18 02:00:51 pm	6.683	40533	2.59		1.00
Replicates	41906.9	40711.2	40066.4	39446.9						
RINSE				UNK	03/20/18 02:03:01 pm	-0.009	38	31.50		1.00
Replicates	38.7	22.2	51.4	41.0						
SL2133-019A				UNK	03/20/18 02:05:12 pm	3.276	10008	2.06		2.00
Replicates	10261.3	10090.8	9858.4	9823.3						
SL2133-019S				UNK	03/20/18 02:07:23 pm	2.295	7038	2.34		2.00
Replicates	7257.5	7056.0	6964.7	6873.2						
SL2133-019P				UNK	03/20/18 02:09:34 pm	2.121	6514	2.18		2.00
Replicates	6697.8	6547.6	6432.1	6377.0						
CCV				CCV	03/20/18 02:11:42 pm	4.709	28589	1.25		1.00
Replicates	29008.7	28728.1	28438.1	28181.4						
% Recovery	94.18									
CCB				CCB	03/20/18 02:13:48 pm	-0.014	12	202.69		1.00
Replicates	-16.0	4.9	16.7	43.2						

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: Cetac M6100 (H) **ANALYST**: AMJ **ANALYSIS DATE**: 03/22/2018

FILE NAME: HLC22A **METHOD: CVAA**

☐ 245.1
☐ 7470
☑ 7471
☑ DoD
☐ _____

REVIEWED
JS3.23.18
KATAHDIN ANALYTICAL
METALS SECTION

Analyte : Mercury

$SnCl_2$ Lot : MR1969

STANDARDS USED:

Standard Name	Prep. Date	Expiration Date	Standard Conc.
Cal. Blank / ICB / CCB	03/22/2018	06/30/2018	0.00 ug/L
Standard #1 / PQL	03/22/2018	06/30/2018	0.20 ug/L
Standard #2	03/22/2018	06/30/2018	0.50 ug/L
Standard #3	03/22/2018	06/30/2018	1.00 ug/L
Standard #4	03/22/2018	06/30/2018	5.00 ug/L
Standard #5	03/22/2018	06/30/2018	10.00 ug/L
ICV	03/22/2018	03/31/2018	6.00 ug/L

Additional Comments and Notes:

JS3.23.18

Post Spike (245.1/7470): 0.005 mL MS2112 (pipet M17) into 8.0mL (pipet M12) of sample

Post Spike (7471): 0.008 mL MS2112 (pipet M17) into 8.0mL (pipet M12) of sample

2x Dilution: 3.0mL (pipet M12) of sample + 3.0 (pipet M12) of cal. blank

5x Dilution: 1.6mL (pipet M12) of sample + 6.4mL (pipet M12) of Cal. Blank

O flag: Sample concentration over calibration, re-analyzed at dilution

Q flag: Analytical run QC outside laboratory limits

INSTRUMENT RUNLOG

Instrument: CETAC M6100

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
Calibration Blank	1.0000	HLC22A	3/22/2018	10:06	MD
Standard #1 (0.2 ppb)	1.0000	HLC22A	3/22/2018	10:08	MD
Standard #2 (0.5 ppb)	1.0000	HLC22A	3/22/2018	10:10	MD
Standard #3 (1.0 ppb)	1.0000	HLC22A	3/22/2018	10:12	MD
Standard #4 (5.0 ppb)	1.0000	HLC22A	3/22/2018	10:14	MD
Standard #5 (10.0 ppb)	1.0000	HLC22A	3/22/2018	10:16	MD
ICV	1.0000	HLC22A	3/22/2018	10:18	MD
ICB	1.0000	HLC22A	3/22/2018	10:21	MD
PQL	1.0000	HLC22A	3/22/2018	10:23	MD
CCV	1.0000	HLC22A	3/22/2018	10:25	MD
CCB	1.0000	HLC22A	3/22/2018	10:27	MD
PBSLC21HGS1	1.0000	HLC22A	3/22/2018	10:29	MD
LCSOLC21HGS1	1.0000	HLC22A	3/22/2018	10:34	MD
SL2004-007	1.0000	HLC22A	3/22/2018	10:36	MD
SL2004-007L	5.0000	HLC22A	3/22/2018	10:38	MD
SL2004-007A	1.0000	HLC22A	3/22/2018	10:40	MD
SL2004-007S	1.0000	HLC22A	3/22/2018	10:42	MD
SL2004-007P	1.0000	HLC22A	3/22/2018	10:45	MD
SL2005-005	1.0000	HLC22A	3/22/2018	10:47	MD
SL2006-005	1.0000	HLC22A	3/22/2018	10:49	MD
SL2006-006	1.0000	HLC22A	3/22/2018	10:51	MD
CCV	1.0000	HLC22A	3/22/2018	10:53	MD
CCB	1.0000	HLC22A	3/22/2018	10:55	MD
SL2133-019RP	1.0000	HLC22A	3/22/2018	10:57	MD
SL2133-019RS	1.0000	HLC22A	3/22/2018	11:00	MD
SL2302-001	1.0000	HLC22A	3/22/2018	11:02	MD
SL2310-001	1.0000	HLC22A	3/22/2018	11:04	MD
PBSLC22HGS1	1.0000	HLC22A	3/22/2018	11:06	MD
LCSOLC22HGS1	1.0000	HLC22A	3/22/2018	11:08	MD
SL2329-001	1.0000	HLC22A	3/22/2018	11:10	MD
SL2329-002	1.0000	HLC22A	3/22/2018	11:14	MD
SL2329-003	1.0000	HLC22A	3/22/2018	11:16	MD
SL2329-004	1.0000	HLC22A	3/22/2018	11:18	MD
CCV	1.0000	HLC22A	3/22/2018	11:21	MD
CCB	1.0000	HLC22A	3/22/2018	11:23	MD
SL2329-005	1.0000	HLC22A	3/22/2018	11:25	MD
SL2329-006	1.0000	HLC22A	3/22/2018	11:27	MD
SL2329-007	1.0000	HLC22A	3/22/2018	11:29	MD
SL2329-008	1.0000	HLC22A	3/22/2018	11:31	MD
SL2329-008L	5.0000	HLC22A	3/22/2018	11:33	MD
SL2329-008A	1.0000	HLC22A	3/22/2018	11:36	MD
SL2329-008S	1.0000	HLC22A	3/22/2018	11:38	MD
SL2329-008P	1.0000	HLC22A	3/22/2018	11:40	MD
SL2329-009	1.0000	HLC22A	3/22/2018	11:42	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2329-010	1.0000	HLC22A	3/22/2018	11:49	MD
CCV	1.0000	HLC22A	3/22/2018	11:51	MD
CCB	1.0000	HLC22A	3/22/2018	11:53	MD
SL2329-011	1.0000	HLC22A	3/22/2018	11:55	MD
SL2329-012	1.0000	HLC22A	3/22/2018	11:58	MD
SL2329-013	1.0000	HLC22A	3/22/2018	12:00	MD
SL2329-014	1.0000	HLC22A	3/22/2018	12:02	MD
SL2329-017	1.0000	HLC22A	3/22/2018	12:04	MD
SL2329-018	1.0000	HLC22A	3/22/2018	12:06	MD
SL2004-007A	2.0000	HLC22A	3/22/2018	12:08	MD
SL2004-007P	2.0000	HLC22A	3/22/2018	12:11	MD
SL2329-008A	1.0000	HLC22A	3/22/2018	12:13	MD
SL2329-008S	1.0000	HLC22A	3/22/2018	12:19	MD
CCV	1.0000	HLC22A	3/22/2018	12:22	MD
CCB	1.0000	HLC22A	3/22/2018	12:24	MD

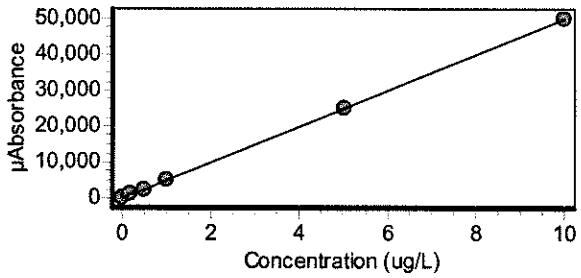
Report Generated By CETAC QuickTrace
Analyst: kasgc
Worksheet file: C:\Program Files\QuickTrace\Worksheets\HLC22A.wsz
Date Started: 3/22/2018 10:03:36 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Calibration Blank					STD	03/22/18 10:06:09 am	0.000	58	18.85		1.00
Replicates	44.5	59.9	71.2	57.2							
Standard #1 (0.2 ppb)					STD	03/22/18 10:08:16 am	0.200	1053	1.86		1.00
Replicates	1064.8	1050.3	1026.8	1071.0							
Standard #2 (0.5 ppb)					STD	03/22/18 10:10:23 am	0.500	2492	0.81		1.00
Replicates	2511.9	2505.9	2471.7	2477.5							
Standard #3 (1.0 ppb)					STD	03/22/18 10:12:30 am	1.000	5046	0.32		1.00
Replicates	5062.3	5055.3	5042.1	5026.0							
Standard #4 (5.0 ppb)					STD	03/22/18 10:14:39 am	5.000	24773	0.84		1.00
Replicates	25045.4	24819.8	24573.6	24652.6							
Standard #5 (10.0 ppb)					STD	03/22/18 10:16:47 am	10.000	49790	2.51		1.00
Replicates	51272.2	50196.2	49364.6	48326.2							

Calibration

Equation: A = 35.168 + 4970.132C
R2: 0.99999
SEE: 69.3204
Flags:



ICV					ICV	03/22/18 10:18:56 am	5.890	29307	1.05		1.00
Replicates	29725.8	29348.1	29070.9	29083.9							
% Recovery	98.16										
ICB					ICB	03/22/18 10:21:02 am	-0.003	20	13.80		1.00
Replicates	23.2	18.9	22.4	17.3							

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL					CRDL	03/22/18 10:23:09 am	0.204	1051	5.06		1.00
	Replicates	1128.7	1025.3	1011.3	1037.0						
	% Recovery	102.15									
CCV					CCV	03/22/18 10:25:17 am	4.855	24164	0.75		1.00
	Replicates	24412.6	24180.4	24005.2	24059.1						
	% Recovery	97.10									
CCB					CCB	03/22/18 10:27:23 am	-0.016	-43	44.59		1.00
	Replicates	-49.2	-37.9	-65.9	-20.0						
PBSLC21HGS1					PBK	03/22/18 10:29:30 am	-0.008	-3	596.18		1.00
	Replicates	20.5	-28.6	0.2	-5.6						
LCSOLC21HGS1					LCS	03/22/18 10:34:25 am	5.032	25046	0.32		1.00
	Replicates	25149.1	25032.5	24955.7	25044.9						
	% Recovery	100.64									
SL2004-007					UNK	03/22/18 10:36:33 am	3.103	15455	0.11		1.00
	Replicates	15472.5	15439.3	15442.6	15467.1						
SL2004-007L					UNK	03/22/18 10:38:41 am	2.636	2656	2.37		5.00
	Replicates	2741.3	2651.5	2639.5	2590.1						
SL2004-007A					UNK	03/22/18 10:40:49 am	3.335	16609	2.24		1.00
	Replicates	17091.3	16693.7	16415.0	16237.9						
							data rejected sample reran				
SL2004-007S					UNK	03/22/18 10:42:57 am	3.925	19542	1.89		1.00
	Replicates	19952.0	19736.7	19346.2	19134.7						
SL2004-007P					UNK	03/22/18 10:45:04 am	3.434	17104	1.15		1.00
	Replicates	17286.5	17260.2	16904.2	16966.0						
							data rejected sample reran				
SL2005-005					UNK	03/22/18 10:47:13 am	4.162	20721	1.94		1.00
	Replicates	21220.2	20841.1	20529.7	20293.4						
SL2006-005					UNK	03/22/18 10:49:22 am	1.070	5353	0.81		1.00
	Replicates	5407.3	5338.6	5360.4	5304.1						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
SL2006-006				UNK	03/22/18 10:51:31 am	0.786	3943	2.02		1.00
Replicates	4026.5	3993.5	3888.9	3862.4						
CCV				CCV	03/22/18 10:53:39 am	4.533	22563	1.53		1.00
Replicates	23024.4	22626.7	22333.2	22268.9						
% Recovery	90.65									
CCB				CCB	03/22/18 10:55:46 am	-0.017	-49	44.73		1.00
Replicates	-27.2	-35.8	-55.8	-76.0						
SL2133-019RP				UNK	03/22/18 10:57:55 am	2.451	12218	1.93		1.00
Replicates	12498.0	12307.0	12116.7	11951.5						
SL2133-019RS				UNK	03/22/18 11:00:02 am	2.564	12777	0.91		1.00
Replicates	12903.7	12842.7	12655.2	12706.0						
SL2302-001				UNK	03/22/18 11:02:10 am	2.276	11347	2.14		1.00
Replicates	11698.9	11312.8	11215.5	11159.8						
SL2310-001				UNK	03/22/18 11:04:19 am	0.430	2174	1.64		1.00
Replicates	2217.6	2188.9	2150.4	2140.1						
PBSLC22HGS1				PBK	03/22/18 11:06:28 am	-0.019	-59	79.74		1.00
Replicates	9.2	-79.0	-69.0	-98.1						
LCSOLC22HGS1				LCS	03/22/18 11:08:37 am	4.727	23528	0.66		1.00
Replicates	23718.6	23588.0	23412.8	23392.3						
% Recovery	94.54									
SL2329-001				UNK	03/22/18 11:10:45 am	0.080	431	6.11		1.00
Replicates	462.2	415.6	442.8	404.0						
SL2329-002				UNK	03/22/18 11:14:35 am	0.102	543	6.69		1.00
Replicates	507.6	560.5	584.7	517.4						
SL2329-003				UNK	03/22/18 11:16:44 am	0.089	475	1.76		1.00
Replicates	471.4	466.9	486.2	477.4						

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
SL2329-004				UNK	03/22/18 11:18:53 am	0.123	647	4.03		1.00
Replicates	669.0	670.0	622.5	626.5						
CCV				CCV	03/22/18 11:21:01 am	4.960	24687	3.60		1.00
Replicates	25926.9	24722.8	24128.8	23968.5						
% Recovery	99.20									
CCB				CCB	03/22/18 11:23:07 am	-0.015	-41	75.99		1.00
Replicates	-83.8	-30.9	-41.5	-9.0						
SL2329-005				UNK	03/22/18 11:25:17 am	0.076	411	7.94		1.00
Replicates	423.4	367.0	409.4	444.2						
SL2329-006				UNK	03/22/18 11:27:25 am	0.113	596	3.43		1.00
Replicates	601.5	620.7	588.5	572.4						
SL2329-007				UNK	03/22/18 11:29:34 am	0.096	511	6.05		1.00
Replicates	471.7	536.6	501.0	534.6						
SL2329-008				UNK	03/22/18 11:31:43 am	0.098	521	3.78		1.00
Replicates	536.6	511.9	538.6	497.9						
SL2329-008L				UNK	03/22/18 11:33:52 am	0.090	124	16.01		5.00
Replicates	135.4	103.2	112.7	146.3						
SL2329-008A				UNK	03/22/18 11:36:02 am	0.976	4887	1.92		1.00
Replicates	4990.0	4943.0	4802.0	4812.5						
						data rejected sample reran				
SL2329-008S				UNK	03/22/18 11:38:11 am	1.255	6273	1.04		1.00
Replicates	6367.6	6260.1	6245.0	6220.5						
						data rejected sample reran				
SL2329-008P				UNK	03/22/18 11:40:20 am	0.963	4822	0.43		1.00
Replicates	4808.5	4841.6	4799.6	4837.0						
SL2329-009				UNK	03/22/18 11:42:30 am	0.120	634	2.77		1.00
Replicates	655.2	613.3	629.0	638.5						

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 03/20/2018

FILE NAME: JLC20C **METHOD: ICP-MS**

- ☐ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
JS 3.22.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by _____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17581	02/21/2018	02/21/2019	0 ug/L
Standard 1	MW17608	03/09/2018	03/21/2018	Varies by Element
ICV	MW17588	02/23/2018	05/23/2018	Varies by Element
PQL	MW17610	03/12/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17570	02/16/2018	05/14/2018	Varies by Element
ICSA	MW17613	03/14/2018	03/20/2018	Varies by Element
ICSAB	MW17614	03/14/2018	03/20/2018	Varies by Element
CCV	MW17615	03/14/2018	03/21/2018	Varies by Element
Internal Standard	MW17585	02/22/2018	05/22/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Zn failed for DOD in the opening PQL, accepted all DOD samples with zinc concentrations greater than 10x the PQL result for zinc
- Accepted results for DOD samples with low Bi internal standard recoveries were accepted for internal std. recovery within DOD limits (30-120% recovery)

JS 3.22.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17581(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL of MW17581(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC20C	3/20/2018	5:25:00 14:01	MD
200.8 TUNE	1	JLC20C	3/20/2018	5:25:00 14:04	MD
Cal Blank	1	JLC20C	3/20/2018	5:25:00 17:25	MD
Cal Std 6	1	JLC20C	3/20/2018	5:29:00 17:29	MD
ICV	1	JLC20C	3/20/2018	5:33:00 17:33	MD
ICB	1	JLC20C	3/20/2018	5:37:00 17:37	MD
PQL	1	JLC20C	3/20/2018	5:40:00 17:40	MD
RINSE	1	JLC20C	3/20/2018	5:44:00 17:44	MD
ICSA	1	JLC20C	3/20/2018	5:48:00 17:48	MD
ICSAB	1	JLC20C	3/20/2018	5:53:00 17:53	MD
RINSE	1	JLC20C	3/20/2018	5:57:00 17:57	MD
LRS1	1	JLC20C	3/20/2018	6:01:00 18:01	MD
LRS2	1	JLC20C	3/20/2018	6:04:00 18:04	MD
RINSE	1	JLC20C	3/20/2018	6:09:00 18:09	MD
RINSE	1	JLC20C	3/20/2018	6:13:00 18:13	MD
CCV	1	JLC20C	3/20/2018	6:17:00 18:17	MD
CCB	1	JLC20C	3/20/2018	6:21:00 18:21	MD
PBSLC19IMS1	5	JLC20C	3/20/2018	6:25:00 18:25	MD
LCSOLC19IMS1	5	JLC20C	3/20/2018	6:29:00 18:29	MD
SL2079-001	5	JLC20C	3/20/2018	6:33:00 18:33	MD
SL2079-002	5	JLC20C	3/20/2018	6:37:00 18:37	MD
SL2079-003	5	JLC20C	3/20/2018	6:41:00 18:41	MD
SL2079-004	5	JLC20C	3/20/2018	6:45:00 18:45	MD
SL2079-005	5	JLC20C	3/20/2018	6:50:00 18:50	MD
SL2079-006	5	JLC20C	3/20/2018	6:54:00 18:54	MD
SL2079-007	5	JLC20C	3/20/2018	6:58:00 18:58	MD
RINSE	1	JLC20C	3/20/2018	7:02:00 19:02	MD
CCV	1	JLC20C	3/20/2018	7:06:00 19:06	MD
CCB	1	JLC20C	3/20/2018	7:10:00 19:10	MD
SL2079-008	5	JLC20C	3/20/2018	7:14:00 19:14	MD
SL2079-009	5	JLC20C	3/20/2018	7:19:00 19:19	MD
SL2079-009L	25	JLC20C	3/20/2018	7:23:00 19:23	MD
SL2079-009A	5	JLC20C	3/20/2018	7:27:00 19:27	MD
SL2079-009S	5	JLC20C	3/20/2018	7:31:00 19:31	MD
SL2079-009P	5	JLC20C	3/20/2018	7:35:00 19:35	MD
SL2079-010	5	JLC20C	3/20/2018	7:40:00 19:40	MD
SL2079-011	5	JLC20C	3/20/2018	7:44:00 19:44	MD
SL2079-012	5	JLC20C	3/20/2018	7:48:00 19:48	MD
RINSE	1	JLC20C	3/20/2018	7:52:00 19:52	MD
CCV	1	JLC20C	3/20/2018	7:56:00 19:56	MD
CCB	1	JLC20C	3/20/2018	8:00:00 20:00	MD
SL2079-013	5	JLC20C	3/20/2018	8:04:00 20:04	MD
SL2133-001	5	JLC20C	3/20/2018	8:09:00 20:09	MD
SL2133-002	5	JLC20C	3/20/2018	8:13:00 20:13	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2133-003	5	JLC20C	3/20/2018	8:17:00 20:17	MD
SL2133-004	5	JLC20C	3/20/2018	8:21:00 20:21	MD
SL2133-005	5	JLC20C	3/20/2018	8:25:00 20:25	MD
SL2133-006	5	JLC20C	3/20/2018	8:30:00 20:30	MD
SL2133-007	5	JLC20C	3/20/2018	8:34:00 20:34	MD
PBWLC16IMW1	5	JLC20C	3/20/2018	8:38:00 20:38	MD
LCSWLC16IMW1	5	JLC20C	3/20/2018	8:42:00 20:42	MD
CCV	1	JLC20C	3/20/2018	8:47:00 20:47	MD
CCB	1	JLC20C	3/20/2018	8:51:00 20:51	MD
PBSLC20IMS1	5	JLC20C	3/20/2018	8:55:00 20:55	MD
LCSOLC20IMS1	5	JLC20C	3/20/2018	8:59:00 20:59	MD
SL2133-008	5	JLC20C	3/20/2018	9:03:00 21:03	MD
SL2133-009	5	JLC20C	3/20/2018	9:07:00 21:07	MD
SL2133-010	5	JLC20C	3/20/2018	9:12:00 21:12	MD
SL2133-011	5	JLC20C	3/20/2018	9:16:00 21:16	MD
SL2133-012	5	JLC20C	3/20/2018	9:20:00 21:20	MD
SL2133-013	5	JLC20C	3/20/2018	9:24:00 21:24	MD
SL2133-014	5	JLC20C	3/20/2018	9:29:00 21:29	MD
RINSE	1	JLC20C	3/20/2018	9:33:00 21:33	MD
CCV	1	JLC20C	3/20/2018	9:37:00 21:37	MD
CCB	1	JLC20C	3/20/2018	9:41:00 21:41	MD
SL2133-015	5	JLC20C	3/20/2018	9:46:00 21:46	MD
SL2133-016	5	JLC20C	3/20/2018	9:50:00 21:50	MD
SL2133-017	5	JLC20C	3/20/2018	9:54:00 21:54	MD
SL2133-018	5	JLC20C	3/20/2018	9:58:00 21:58	MD
SL2133-019	5	JLC20C	3/20/2018	10:03:0 22:03	MD
SL2133-019L	25	JLC20C	3/20/2018	10:07:0 22:07	MD
SL2133-019A	5	JLC20C	3/20/2018	10:11:0 22:11	MD
SL2133-019S	5	JLC20C	3/20/2018	10:15:0 22:15	MD
SL2133-019P	5	JLC20C	3/20/2018	10:20:0 22:20	MD
RINSE	1	JLC20C	3/20/2018	10:24:0 22:24	MD
CCV	1	JLC20C	3/20/2018	10:28:0 22:28	MD
CCB	1	JLC20C	3/20/2018	10:32:0 22:32	MD
SL2133-021	5	JLC20C	3/20/2018	10:37:0 22:37	MD
SL2133-022	5	JLC20C	3/20/2018	10:41:0 22:41	MD
RINSE	1	JLC20C	3/20/2018	10:45:0 22:45	MD
RINSE	1	JLC20C	3/20/2018	10:49:0 22:49	MD
PBWLC19IMW2	5	JLC20C	3/20/2018	10:53:0 22:53	MD
LCSWLC19IMW2	5	JLC20C	3/20/2018	10:58:0 22:58	MD
SL2133-020	5	JLC20C	3/20/2018	11:02:0 23:02	MD
SL2138-011	5	JLC20C	3/20/2018	11:06:0 23:06	MD
SL2138-012	5	JLC20C	3/20/2018	11:10:0 23:10	MD
RINSE	1	JLC20C	3/20/2018	11:14:0 23:14	MD
CCV	1	JLC20C	3/20/2018	11:18:0 23:18	MD
CCB	1	JLC20C	3/20/2018	11:23:0 23:23	MD
SL2138-001	5	JLC20C	3/20/2018	11:27:0 23:27	MD
SL2138-002	5	JLC20C	3/20/2018	11:31:0 23:31	MD

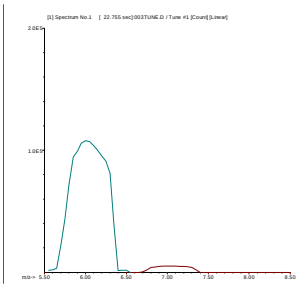
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2138-003	5	JLC20C	3/20/2018 11:35:0	23:35	MD
RINSE	1	JLC20C	3/20/2018 11:39:0	23:39	MD
RINSE	1	JLC20C	3/20/2018 11:43:0	23:43	MD
SL2138-004	5	JLC20C	3/20/2018 11:48:0	23:48	MD
SL2138-005	5	JLC20C	3/20/2018 11:52:0	23:52	MD
SL2138-006	5	JLC20C	3/20/2018 11:56:0	23:56	MD
RINSE	1	JLC20C	3/21/2018	0:00	MD
RINSE	1	JLC20C	3/21/2018 12:04:0	0:04	MD
CCV	1	JLC20C	3/21/2018 12:08:0	0:08	MD
CCB	1	JLC20C	3/21/2018 12:12:0	0:12	MD
SL2138-007	5	JLC20C	3/21/2018 12:17:0	0:17	MD
SL2138-008	5	JLC20C	3/21/2018 12:21:0	0:21	MD
SL2138-009	5	JLC20C	3/21/2018 12:25:0	0:25	MD
RINSE	1	JLC20C	3/21/2018 12:29:0	0:29	MD
RINSE	1	JLC20C	3/21/2018 12:33:0	0:33	MD
SL2138-010	5	JLC20C	3/21/2018 12:38:0	0:38	MD
RINSE	1	JLC20C	3/21/2018 12:42:0	0:42	MD
RINSE	1	JLC20C	3/21/2018 12:46:0	0:46	MD
RINSE	1	JLC20C	3/21/2018 12:50:0	0:50	MD
RINSE	1	JLC20C	3/21/2018 12:54:0	0:54	MD
CCV	1	JLC20C	3/21/2018 12:58:0	0:58	MD
CCB	1	JLC20C	3/21/2018 1:03:00	1:03	MD
PQL	1	JLC20C	3/21/2018 1:07:00	1:07	MD
CCV	1	JLC20C	3/21/2018 1:11:00	1:11	MD
CCB	1	JLC20C	3/21/2018 1:15:00	1:15	MD

6020 QC Tune Report

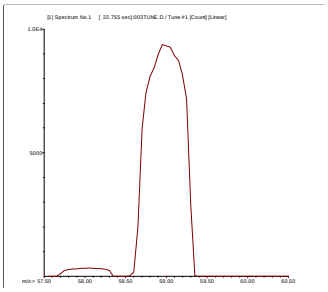
Data File: C:\ICPCHEM\1\DATA\JLC20A.B\003TUNE.D
Date Acquired: Mar 20 2018 02:01 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

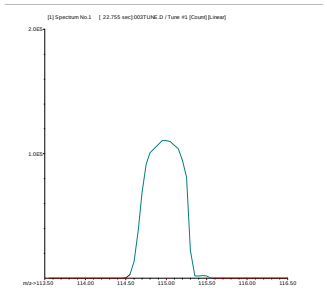
Element	Actual	Required	Flag
7 Li	0.64	5.00	
59 Co	1.48	5.00	
115 In	1.07	5.00	
205 Tl	1.00	5.00	



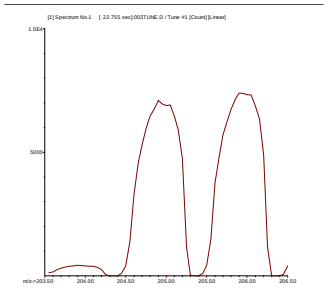
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



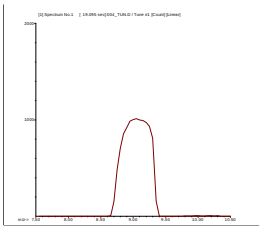
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

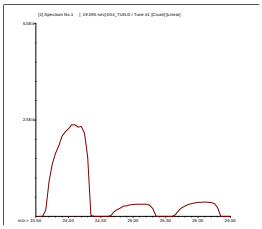
Data File: C:\ICPCHEM\1\DATA\JLC20A.B\004_TUN.D
Date Acquired: Mar 20 2018 02:04 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

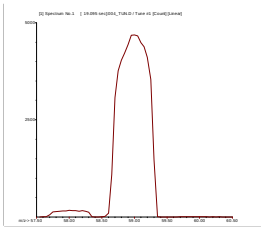
Element	Actual	Required	Flag
9 Be	1.83	5.00	
24 Mg	1.12	5.00	
59 Co	2.21	5.00	
115 In	1.49	5.00	
208 Pb	0.97	5.00	



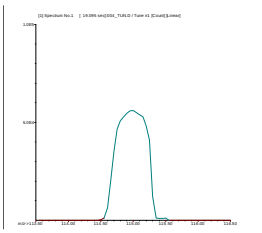
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



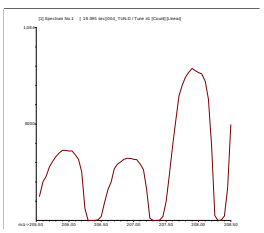
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000160

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.I
Date Acquired: Mar 20 2018 05:25 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 20 2018 05:27 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3440039.00	A	32650.00	0.95
9	Be	18.89	P	5.09	26.96
11	B	360.02	P	57.83	16.06
23	Na	45458.00	P	886.00	1.95
25	Mg	137.79	P	31.51	22.87
27	Al	2067.46	P	100.10	4.84
28	Si	6967709.00	A	249300.00	3.58
29	Si	527997.50	P	16940.00	3.21
39	K	1168954.00	A	4387.00	0.38
43	Ca	262.99	P	12.83	4.88
44	Ca	12502.06	P	889.70	7.12
45	Sc	3153680.00	A	29810.00	0.95
51	V	2088.25	P	710.50	34.02
52	Cr	7455.41	P	71.79	0.96
53	Cr	6241.47	P	219.70	3.52
55	Mn	1542.36	P	68.02	4.41
56	Fe	1711136.00	A	9485.00	0.55
57	Fe	14044.61	P	416.50	2.97
59	Co	77.78	P	26.94	34.63
60	Ni	66.57	P	18.36	27.58
63	Cu	241.12	P	26.94	11.17
65	Cu	101.11	P	5.09	5.04
66	Zn	902.28	P	22.20	2.46
68	Zn	3564.99	P	167.70	4.70
72	Ge		P		
75	As	-12.18	P	21.39	175.60
82	Se	-22.63	P	28.83	127.43
88	Sr	125.94	P	16.97	13.48
89	Y	4049389.00	A	24800.00	0.61
98	Mo	40.74	P	10.81	26.54
107	Ag	27.78	P	15.03	54.11
109	Ag	21.11	P	13.88	65.75
111	Cd	1056.06	P	7.48	0.71
114	Cd	-2.71	P	9.68	357.00
115	In	3549920.00	A	24980.00	0.70
118	Sn	435.58	P	8.39	1.93
120	Sn	561.14	P	73.14	13.03
121	Sb	55.56	P	9.62	17.32
123	Sb	47.78	P	13.88	29.05
135	Ba	13.33	P	0.00	0.00
137	Ba	27.78	P	1.93	6.93
159	Tb	4277856.00	A	42970.00	1.00
182	W	82.23	P	27.76	33.76
203	Tl	36.67	P	3.33	9.09
205	Tl	40.00	P	11.55	28.87
208	Pb	275.57	P	23.65	8.58
209	Bi	2443113.00	A	27370.00	1.12
232	Th	25.56	P	11.71	45.82
238	U	7.78	P	8.39	107.85

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\016CALI.D\016CALI.D#
Date Acquired: Mar 20 2018 05:29 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 20 2018 05:27 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3651432.00	A	81820.00	2.24
9 Be	128394.70	P	866.40	0.67
11 B	77476.97	P	2700.00	3.48
23 Na	85578048.00	A	820500.00	0.96
25 Mg	7408177.00	A	76280.00	1.03
27 Al	7377639.00	A	46260.00	0.63
28 Si	10945840.00	A	90020.00	0.82
29 Si	875658.00	A	5930.00	0.68
39 K	95396176.00	A	1675000.00	1.76
43 Ca	173911.00	P	4543.00	2.61
44 Ca	2777314.00	A	49090.00	1.77
45 Sc	3350597.00	A	55350.00	1.65
51 V	607008.63	P	4260.00	0.70
52 Cr	527407.63	P	7068.00	1.34
53 Cr	68067.10	P	983.60	1.45
55 Mn	658685.69	P	4575.00	0.69
56 Fe	107301400.00	A	185000.00	0.17
57 Fe	2604992.00	A	14500.00	0.56
59 Co	569045.63	P	6012.00	1.06
60 Ni	125009.50	P	1939.00	1.55
63 Cu	291833.69	P	3151.00	1.08
65 Cu	136754.70	P	1040.00	0.76
66 Zn	67977.86	P	1083.00	1.59
68 Zn	50948.79	P	592.60	1.16
72 Ge		P		
75 As	64992.34	P	1064.00	1.64
82 Se	4591.80	P	20.83	0.45
88 Sr	667868.88	P	7136.00	1.07
89 Y	4352465.00	A	43880.00	1.01
98 Mo	210651.91	P	1510.00	0.72
107 Ag	323493.91	P	4067.00	1.26
109 Ag	307495.81	P	5220.00	1.70
111 Cd	62591.72	P	937.00	1.50
114 Cd	134615.59	P	1813.00	1.35
115 In	3843002.00	A	24180.00	0.63
118 Sn	183977.91	P	1166.00	0.63
120 Sn	254328.41	P	4778.00	1.88
121 Sb	228947.59	P	1382.00	0.60
123 Sb	171637.00	P	2434.00	1.42
135 Ba	51542.68	P	764.20	1.48
137 Ba	89473.65	P	994.00	1.11
159 Tb	4621247.00	A	56150.00	1.22
182 W	203653.91	P	2989.00	1.47
203 Tl	178254.70	P	1219.00	0.68
205 Tl	423863.00	P	6014.00	1.42
208 Pb	587184.13	P	6019.00	1.03
209 Bi	2570094.00	A	37590.00	1.46
232 Th	672103.69	P	10860.00	1.62
238 U	646366.69	P	3445.00	0.53

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3651432.00	2.24	3440039.00	106.1	79.5 - 120.4	
45 Sc	3350597.30	1.65	3153680.00	106.2	79.5 - 120.4	
89 Y	4352465.50	1.01	4049389.00	107.5	79.5 - 120.4	
159 Tb	4621247.50	1.22	4277856.00	108.0	79.5 - 120.4	
209 Bi	2570094.00	1.46	2443113.00	105.2	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000162

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\017_ICV.D\017_ICV.D#
Date Acquired: Mar 20 2018 05:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.93	ppb	0.58	20	99.65	
11 B	20.09	ppb	3.37	20	100.45	
23 Na	3,961.	ppb	0.33	4,000	99.025	
25 Mg	3,976.	ppb	1.40	4,000	99.4	
27 Al	390.2	ppb	0.45	400	97.55	
28 Si	324.3	ppb	13.24	400	81.075	
29 Si	400.	ppb	54.58	400	100	
39 K	3,895.	ppb	0.85	4,000	97.375	
43 Ca	4,008.	ppb	2.34	4,000	100.2	
44 Ca	4,082.	ppb	0.19	4,000	102.05	
51 V	20.11	ppb	1.80	20	100.55	
52 Cr	19.88	ppb	0.94	20	99.4	
53 Cr	18.81	ppb	0.33	20	94.05	
55 Mn	19.96	ppb	0.89	20	99.8	
56 Fe	3,991.	ppb	0.77	4,000	99.775	
57 Fe	4,081.	ppb	1.18	4,000	102.025	
59 Co	20.16	ppb	1.12	20	100.8	
60 Ni	20.31	ppb	0.76	20	101.55	
63 Cu	20.11	ppb	0.26	20	100.55	
65 Cu	20.13	ppb	0.21	20	100.65	
66 Zn	20.82	ppb	2.78	20	104.1	
68 Zn	20.56	ppb	0.65	20	102.8	
75 As	20.09	ppb	1.61	20	100.45	
82 Se	20.25	ppb	3.20	20	101.25	
88 Sr	19.62	ppb	1.42	20	98.1	
98 Mo	39.3	ppb	1.49	40	98.25	
107 Ag	20.1	ppb	2.18	20	100.5	
109 Ag	19.97	ppb	1.19	20	99.85	
111 Cd	20.47	ppb	1.90	20	102.35	
114 Cd	20.45	ppb	1.34	20	102.25	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.81	ppb	2.12	20	99.05	
120 Sn	19.81	ppb	1.05	20	99.05	
121 Sb	19.6	ppb	1.32	20	98	
123 Sb	19.96	ppb	0.87	20	99.8	
135 Ba	20.22	ppb	0.57	20	101.1	
137 Ba	20.17	ppb	0.60	20	100.85	
182 W	19.91	ppb	2.04	20	99.55	
203 Tl	19.99	ppb	1.82	20	99.95	
205 Tl	20.34	ppb	1.39	20	101.7	
208 Pb	19.8	ppb	1.99	20	99	
232 Th	19.49	ppb	1.82	20	97.45	
238 U	19.68	ppb	1.67	20	98.4	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3599457.80	0.11	3440039.00	104.6	80 - 120.4	
45 Sc	3325251.50	0.44	3153680.00	105.4	80 - 120.4	
89 Y	4263809.50	0.94	4049389.00	105.3	80 - 120.4	
159 Tb	4533759.00	0.98	4277856.00	106.0	80 - 120.4	
209 Bi	2575436.30	0.92	2443113.00	105.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000163

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\018_ICB.D\018_ICB.D#
Date Acquired: Mar 20 2018 05:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0009	ppb	224.89	1.00	
11 B	0.7327	ppb	15.38	1.00	
23 Na	0.1187	ppb	132.43	1.00	
25 Mg	0.0231	ppb	154.42	1.00	
27 Al	0.0833	ppb	56.43	1.00	
28 Si	84.84	ppb	135.08	1.00	
29 Si	21.06	ppb	99.43	1.00	
39 K	0.6075	ppb	308.48	1.00	
43 Ca	-2.064	ppb	126.55	1.00	
44 Ca	-1.268	ppb	118.38	1.00	
51 V	-0.014	ppb	413.17	1.00	
52 Cr	-0.0273	ppb	55.18	1.00	
53 Cr	-0.6058	ppb	48.00	1.00	
55 Mn	-0.0115	ppb	12.97	1.00	
56 Fe	-3.744	ppb	53.95	1.00	
57 Fe	1.432	ppb	19.11	1.00	
59 Co	0.0063	ppb	52.13	1.00	
60 Ni	0.0014	ppb	209.02	1.00	
63 Cu	0.0004	ppb	1700.80	1.00	
65 Cu	0.0027	ppb	309.73	1.00	
66 Zn	-0.0251	ppb	207.38	1.00	
68 Zn	0.2806	ppb	22.39	1.00	
75 As	0.0533	ppb	343.40	1.00	
82 Se	0.2307	ppb	22.23	1.00	
88 Sr	0.001	ppb	501.18	1.00	
98 Mo	0.0244	ppb	8.19	1.00	
107 Ag	0.0003	ppb	240.21	1.00	
109 Ag	0.0001	ppb	3364.60	1.00	
111 Cd	-0.0394	ppb	141.29	1.00	
114 Cd	-0.0001	ppb	4544.60	1.00	
115 In	--------	---	--------	---	
118 Sn	-0.003	ppb	461.54	1.00	
120 Sn	0.0052	ppb	125.55	1.00	
121 Sb	0.0011	ppb	440.36	1.00	
123 Sb	0.0113	ppb	87.27	1.00	
135 Ba	0.0098	ppb	107.39	1.00	
137 Ba	0.0057	ppb	92.17	1.00	
182 W	0.0202	ppb	19.02	1.00	
203 Tl	0.0012	ppb	224.57	1.00	
205 Tl	0.0032	ppb	32.94	1.00	
208 Pb	0.0018	ppb	76.11	1.00	
232 Th	0.0077	ppb	39.40	1.00	
238 U	0.0033	ppb	39.87	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3331690.80	0.98	3440039.00	96.9	79.5 - 120	
45 Sc	3103388.50	1.33	3153680.00	98.4	79.5 - 120	
89 Y	3993805.80	0.85	4049389.00	98.6	79.5 - 120	
159 Tb	4203028.00	0.81	4277856.00	98.3	79.5 - 120	
209 Bi	2396445.50	1.09	2443113.00	98.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000164

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\019_PQL.D\019_PQL.D#
Date Acquired: Mar 20 2018 05:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2032	ppb	0.90	0.20	101.6	
11 B	4.572	ppb	5.04	4.00	114.3	
23 Na	207.4	ppb	1.67	200.00	103.7	
25 Mg	20.47	ppb	2.61	20.00	102.35	
27 Al	20.06	ppb	0.72	20.00	100.3	
28 Si	114.2	ppb	89.58	100.00	114.2	
29 Si	70.97	ppb	75.64	100.00	70.97	Fail-DoD
39 K	198.1	ppb	2.15	200.00	99.05	
43 Ca	18.82	ppb	17.58	20.00	94.1	
44 Ca	20.39	ppb	4.67	20.00	101.95	
51 V	1.008	ppb	8.49	1.00	100.8	
52 Cr	0.981	ppb	0.99	1.00	98.1	
53 Cr	0.6507	ppb	50.02	---	#VALUE!	
55 Mn	0.4045	ppb	0.58	0.40	101.125	
56 Fe	19.62	ppb	5.17	20.00	98.1	
57 Fe	21.35	ppb	5.50	20.00	106.75	
59 Co	0.2144	ppb	8.53	0.20	107.2	
60 Ni	0.4239	ppb	5.04	0.40	105.975	
63 Cu	0.6477	ppb	2.78	0.60	107.95	
65 Cu	0.7066	ppb	2.05	0.60	117.767	
66 Zn	2.427	ppb	6.46	2.00	121.35	Fail-DoD
68 Zn	2.413	ppb	4.93	2.00	120.65	
75 As	1.017	ppb	18.05	1.00	101.7	
82 Se	1.127	ppb	37.05	1.00	112.7	
88 Sr	1.033	ppb	2.20	1.00	103.3	
98 Mo	1.05	ppb	4.20	1.00	105	
107 Ag	0.2185	ppb	4.81	0.20	109.25	
109 Ag	0.2179	ppb	2.60	0.20	108.95	
111 Cd	0.1959	ppb	10.36	0.20	97.95	
114 Cd	0.1858	ppb	7.04	0.20	92.9	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.033	ppb	6.23	1.00	103.3	
120 Sn	1.012	ppb	2.01	1.00	101.2	
121 Sb	0.1735	ppb	5.17	0.20	86.75	
123 Sb	0.1994	ppb	12.04	0.20	99.7	
135 Ba	0.405	ppb	6.05	0.40	101.25	
137 Ba	0.4028	ppb	4.93	0.40	100.7	
182 W	1.002	ppb	2.06	1.00	100.2	
203 Tl	0.1854	ppb	8.41	0.20	92.7	
205 Tl	0.1879	ppb	5.86	0.20	93.95	
208 Pb	0.1874	ppb	2.53	0.20	93.7	
232 Th	0.1926	ppb	0.95	0.20	96.3	
238 U	0.1982	ppb	3.90	0.20	99.1	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3371708.50	1.29	3440039.00	98.0	80 - 120.4	
45 Sc	3113596.30	1.47	3153680.00	98.7	80 - 120.4	
89 Y	3988083.30	1.03	4049389.00	98.5	80 - 120.4	
159 Tb	4315815.00	0.68	4277856.00	100.9	80 - 120.4	
209 Bi	2462107.80	0.44	2443113.00	100.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000165

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\020SMPL.D\020SMPL.D#
Date Acquired: Mar 20 2018 05:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	213.84	100.	
11 B	0.2901	0.2901	ppb	13.59	1000.	
23 Na	-0.0486	-0.0486	ppb	296.07	200000.	
25 Mg	0.0632	0.0632	ppb	69.63	200000.	
27 Al	0.0132	0.0132	ppb	382.60	200000.	
28 Si	50.18	50.18	ppb	78.00	#VALUE!	
29 Si	28.46	28.46	ppb	41.74	10000.	
39 K	1.275	1.275	ppb	75.37	200000.	
43 Ca	-4.972	-4.972	ppb	50.66	#VALUE!	
44 Ca	0.4231	0.4231	ppb	612.15	200000.	
51 V	-0.0133	-0.0133	ppb	116.95	1000.	
52 Cr	-0.0291	-0.0291	ppb	94.30	2000.	
53 Cr	-0.5063	-0.5063	ppb	12.15	#VALUE!	
55 Mn	-0.0051	-0.0051	ppb	81.62	2000.	
56 Fe	-1.993	-1.993	ppb	205.47	#VALUE!	
57 Fe	1.097	1.097	ppb	139.74	100000.	
59 Co	0.0065	0.0065	ppb	108.49	1000.	
60 Ni	-0.003	-0.003	ppb	290.10	1000.	
63 Cu	0.0008	0.0008	ppb	286.55	#VALUE!	
65 Cu	-0.0008	-0.0008	ppb	873.01	2000.	
66 Zn	0.0273	0.0273	ppb	241.00	2000.	
68 Zn	0.0794	0.0794	ppb	138.52	#VALUE!	
75 As	-0.1005	-0.1005	ppb	127.96	1000.	
82 Se	0.1405	0.1405	ppb	293.95	1000.	
88 Sr	0.0023	0.0023	ppb	61.87	2000.	
98 Mo	0.003	0.003	ppb	126.68	1000.	
107 Ag	0.0006	0.0006	ppb	310.29	100.	
109 Ag	-0.0003	-0.0003	ppb	197.86	#VALUE!	
111 Cd	-0.0305	-0.0305	ppb	97.54	#VALUE!	
114 Cd	-0.0014	-0.0014	ppb	192.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0008	-0.0008	ppb	1008.70	1000.	
120 Sn	0.009	0.009	ppb	55.05	#VALUE!	
121 Sb	0.0012	0.0012	ppb	394.51	#VALUE!	
123 Sb	0.0026	0.0026	ppb	117.76	1000.	
135 Ba	0.0037	0.0037	ppb	418.71	2000.	
137 Ba	-0.0039	-0.0039	ppb	125.23	#VALUE!	
182 W	0.0033	0.0033	ppb	23.48	1000.	
203 Tl	-0.0015	-0.0015	ppb	169.06	1000.	
205 Tl	0.0002	0.0002	ppb	283.76	#VALUE!	
208 Pb	0.0027	0.0027	ppb	102.83	2000.	
232 Th	0.0034	0.0034	ppb	79.19	1000.	
238 U	0.001	0.001	ppb	0.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3324830.30	1.13	3440039.00	96.7	69.5 - 120	
45 Sc	3085808.80	0.20	3153680.00	97.8	69.5 - 120	
89 Y	3993560.80	0.10	4049389.00	98.6	69.5 - 120	
159 Tb	4230002.00	1.00	4277856.00	98.9	69.5 - 120	
209 Bi	2405876.30	0.47	2443113.00	98.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000166

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\021ICSA.D\021ICSA.D#
Date Acquired: Mar 20 2018 05:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	79.59		
11 B	0.6169	ppb	4.02		
23 Na	97,650.	ppb	1.10		
25 Mg	96,440.	ppb	1.21		
27 Al	95,700.	ppb	0.73		
28 Si	-80.62	ppb	29.48		
29 Si	-147.4	ppb	8.56		
39 K	98,660.	ppb	0.98		
43 Ca	101,900.	ppb	0.77		
44 Ca	98,950.	ppb	0.85		
51 V	0.2002	ppb	4.60		
52 Cr	0.8755	ppb	1.46		
53 Cr	-0.1417	ppb	90.61		
55 Mn	0.3337	ppb	2.86		
56 Fe	98,130.	ppb	2.74		
57 Fe	95,490.	ppb	2.65		
59 Co	0.0972	ppb	14.61		
60 Ni	-0.0862	ppb	31.76		
63 Cu	3.042	ppb	1.11		
65 Cu	0.967	ppb	3.53		
66 Zn	2.283	ppb	3.61		
68 Zn	0.2122	ppb	57.87		
75 As	0.3416	ppb	20.35		
82 Se	0.2011	ppb	41.40		
88 Sr	0.9121	ppb	4.08		
98 Mo	1,966.	ppb	1.42		
107 Ag	0.0252	ppb	10.24		
109 Ag	0.0281	ppb	2.31		
111 Cd	0.0907	ppb	19.45		
114 Cd	0.0189	ppb	88.64		
115 In	--------	---	--------		
118 Sn	0.0387	ppb	39.82		
120 Sn	0.0394	ppb	6.49		
121 Sb	0.0672	ppb	21.61		
123 Sb	0.066	ppb	19.62		
135 Ba	0.0861	ppb	7.77		
137 Ba	0.0694	ppb	15.52		
182 W	0.2417	ppb	6.29		
203 Tl	-0.0028	ppb	138.59		
205 Tl	0.0044	ppb	35.76		
208 Pb	0.0871	ppb	4.13		
232 Th	0.0112	ppb	24.54		
238 U	0.0019	ppb	49.23		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3363915.00	0.92	3440039.00	97.8	69.5 - 120.4	
45 Sc	3281377.80	0.91	3153680.00	104.0	69.5 - 120.4	
89 Y	4210051.00	2.07	4049389.00	104.0	69.5 - 120.4	
159 Tb	4428196.50	0.81	4277856.00	103.5	69.5 - 120.4	
209 Bi	2280791.00	1.67	2443113.00	93.4	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000167

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\022ICSB.D\022ICSB.D#
Date Acquired: Mar 20 2018 05:53 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.99	ppb	1.50	20.00	79.5 - 120	
11 B	20.19	ppb	0.67	20.00	79.5 - 120	
23 Na	98,390.	ppb	1.86	100000.00	79.5 - 120	
25 Mg	97,350.	ppb	1.77	100000.00	79.5 - 120	
27 Al	96,200.	ppb	1.60	100000.00	79.5 - 120	
28 Si	429.9	ppb	6.42	---	##### - #####	
29 Si	270.6	ppb	72.03	---	##### - #####	
39 K	99,710.	ppb	1.82	100000.00	79.5 - 120	
43 Ca	102,400.	ppb	2.26	100000.00	79.5 - 120	
44 Ca	100,000.	ppb	2.11	100000.00	79.5 - 120	
51 V	21.28	ppb	2.24	20.00	79.5 - 120	
52 Cr	21.5	ppb	2.09	20.00	79.5 - 120	
53 Cr	21.11	ppb	2.09	---	##### - #####	
55 Mn	20.7	ppb	2.35	20.00	79.5 - 120	
56 Fe	99,300.	ppb	2.38	100000.00	79.5 - 120	
57 Fe	97,530.	ppb	1.75	100000.00	79.5 - 120	
59 Co	20.49	ppb	2.06	20.00	79.5 - 120	
60 Ni	19.86	ppb	3.61	20.00	79.5 - 120	
63 Cu	22.78	ppb	2.50	20.00	79.5 - 120	
65 Cu	20.6	ppb	2.91	20.00	79.5 - 120	
66 Zn	21.47	ppb	2.19	20.00	79.5 - 120	
68 Zn	19.63	ppb	3.39	20.00	79.5 - 120	
75 As	21.27	ppb	2.21	20.00	79.5 - 120	
82 Se	20.57	ppb	3.40	20.00	79.5 - 120	
88 Sr	21.6	ppb	0.85	20.00	79.5 - 120	
98 Mo	1,998.	ppb	1.36	2000.00	79.5 - 120	
107 Ag	19.27	ppb	1.50	20.00	79.5 - 120	
109 Ag	19.29	ppb	0.96	20.00	79.5 - 120	
111 Cd	19.67	ppb	2.22	20.00	79.5 - 120	
114 Cd	19.62	ppb	1.98	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.05	ppb	0.51	20.00	79.5 - 120	
120 Sn	20.18	ppb	2.09	20.00	79.5 - 120	
121 Sb	20.68	ppb	1.48	20.00	79.5 - 120	
123 Sb	20.65	ppb	1.58	20.00	79.5 - 120	
135 Ba	21.34	ppb	2.56	20.00	79.5 - 120	
137 Ba	20.95	ppb	0.26	20.00	79.5 - 120	
182 W	20.6	ppb	0.79	20.00	79.5 - 120	
203 Tl	21.78	ppb	1.69	20.00	79.5 - 120	
205 Tl	21.78	ppb	0.63	20.00	79.5 - 120	
208 Pb	21.68	ppb	0.96	20.00	79.5 - 120	
232 Th	22.8	ppb	1.63	20.00	79.5 - 120	
238 U	22.58	ppb	1.09	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3350610.50	1.08	3440039.00	97.4	69.5 - 120	
45 Sc	3305461.50	0.80	3153680.00	104.8	69.5 - 120	
89 Y	4241910.00	0.72	4049389.00	104.8	69.5 - 120	
159 Tb	4500148.00	0.35	4277856.00	105.2	69.5 - 120	
209 Bi	2308974.80	0.65	2443113.00	94.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000168

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\023SMPL.D\023SMPL.D#
Date Acquired: Mar 20 2018 05:57 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	410.88	100.	
11 B	0.3959	0.3959	ppb	16.19	1000.	
23 Na	5.787	5.787	ppb	85.59	200000.	
25 Mg	3.966	3.966	ppb	101.99	200000.	
27 Al	3.791	3.791	ppb	99.34	200000.	
28 Si	19.09	19.09	ppb	270.67	#VALUE!	
29 Si	-78.6	-78.6	ppb	4.56	10000.	
39 K	0.038	0.038	ppb	10021.00	200000.	
43 Ca	3.778	3.778	ppb	70.22	#VALUE!	
44 Ca	4.237	4.237	ppb	69.46	200000.	
51 V	0.0023	0.0023	ppb	1141.50	1000.	
52 Cr	-0.0199	-0.0199	ppb	6.77	2000.	
53 Cr	-0.4427	-0.4427	ppb	25.16	#VALUE!	
55 Mn	-0.0119	-0.0119	ppb	19.03	2000.	
56 Fe	4.518	4.518	ppb	95.31	#VALUE!	
57 Fe	2.322	2.322	ppb	100.52	100000.	
59 Co	0.003	0.003	ppb	74.82	1000.	
60 Ni	-0.0057	-0.0057	ppb	78.81	1000.	
63 Cu	0.005	0.005	ppb	144.20	#VALUE!	
65 Cu	0.0069	0.0069	ppb	185.20	2000.	
66 Zn	-0.0135	-0.0135	ppb	539.20	2000.	
68 Zn	0.019	0.019	ppb	708.64	#VALUE!	
75 As	0.1056	0.1056	ppb	118.66	1000.	
82 Se	0.4062	0.4062	ppb	86.68	1000.	
88 Sr	0.0039	0.0039	ppb	131.96	2000.	
98 Mo	0.3902	0.3902	ppb	27.55	1000.	
107 Ag	0.0027	0.0027	ppb	150.95	100.	
109 Ag	0.0016	0.0016	ppb	42.99	#VALUE!	
111 Cd	-0.0705	-0.0705	ppb	4.64	#VALUE!	
114 Cd	-0.0014	-0.0014	ppb	298.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0133	-0.0133	ppb	49.96	1000.	
120 Sn	0.0088	0.0088	ppb	123.66	#VALUE!	
121 Sb	0.0109	0.0109	ppb	47.92	#VALUE!	
123 Sb	0.008	0.008	ppb	83.40	1000.	
135 Ba	-0.0008	-0.0008	ppb	714.80	2000.	
137 Ba	-0.0002	-0.0002	ppb	3139.60	#VALUE!	
182 W	-0.0039	-0.0039	ppb	58.51	1000.	
203 Tl	0.0008	0.0008	ppb	280.73	1000.	
205 Tl	0.0059	0.0059	ppb	48.95	#VALUE!	
208 Pb	0.0004	0.0004	ppb	1026.90	2000.	
232 Th	0.004	0.004	ppb	24.99	1000.	
238 U	0.0027	0.0027	ppb	40.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3056349.00	2.19	3440039.00	88.8	69.5 - 120	
45 Sc	2947844.00	0.95	3153680.00	93.5	69.5 - 120	
89 Y	3860015.00	1.16	4049389.00	95.3	69.5 - 120	
159 Tb	4151257.00	0.67	4277856.00	97.0	69.5 - 120	
209 Bi	2353446.80	0.21	2443113.00	96.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000169

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\024SMPL.D\024SMPL.D#
Date Acquired: Mar 20 2018 06:01 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	103.9	103.9	ppb	2.40	100.	>LDR
11 B	565.6	565.6	ppb	5.07	1000.	
23 Na	3.054	3.054	ppb	3.64	200000.	
25 Mg	0.879	0.879	ppb	6.15	200000.	
27 Al	0.6976	0.6976	ppb	18.42	200000.	
28 Si	-51.73	-51.73	ppb	137.56	#VALUE!	
29 Si	-134.7	-134.7	ppb	27.86	10000.	LOW
39 K	-7.505	-7.505	ppb	45.89	200000.	
43 Ca	1,518.	1,518.	ppb	3.92	#VALUE!	
44 Ca	143.2	143.2	ppb	5.71	200000.	
51 V	1,017.	1,017.	ppb	2.82	1000.	>LDR
52 Cr	2,017.	2,017.	ppb	2.50	2000.	>LDR
53 Cr	2,056.	2,056.	ppb	3.09	#VALUE!	
55 Mn	2,019.	2,019.	ppb	2.62	2000.	>LDR
56 Fe	-8.99	-8.99	ppb	38.71	#VALUE!	
57 Fe	-8.846	-8.846	ppb	6.65	100000.	
59 Co	1,002.	1,002.	ppb	2.68	1000.	>LDR
60 Ni	1,016.	1,016.	ppb	1.37	1000.	>LDR
63 Cu	2,012.	2,012.	ppb	3.17	#VALUE!	
65 Cu	2,013.	2,013.	ppb	2.69	2000.	>LDR
66 Zn	2,041.	2,041.	ppb	2.33	2000.	>LDR
68 Zn	2,095.	2,095.	ppb	1.81	#VALUE!	
75 As	1,039.	1,039.	ppb	2.71	1000.	>LDR
82 Se	1,065.	1,065.	ppb	2.34	1000.	>LDR
88 Sr	2,019.	2,019.	ppb	2.93	2000.	>LDR
98 Mo	1,032.	1,032.	ppb	2.74	1000.	>LDR
107 Ag	107.7	107.7	ppb	2.37	100.	>LDR
109 Ag	107.5	107.5	ppb	1.51	#VALUE!	
111 Cd	1,073.	1,073.	ppb	3.48	#VALUE!	
114 Cd	1,052.	1,052.	ppb	3.17	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,024.	1,024.	ppb	1.88	1000.	>LDR
120 Sn	1,009.	1,009.	ppb	2.52	#VALUE!	
121 Sb	1,012.	1,012.	ppb	2.44	#VALUE!	
123 Sb	1,036.	1,036.	ppb	2.95	1000.	>LDR
135 Ba	2,130.	2,130.	ppb	1.54	2000.	>LDR
137 Ba	2,082.	2,082.	ppb	2.55	#VALUE!	
182 W	1,001.	1,001.	ppb	2.30	1000.	>LDR
203 Tl	1,006.	1,006.	ppb	1.68	1000.	>LDR
205 Tl	990.2	990.2	ppb	1.79	#VALUE!	
208 Pb	2,018.	2,018.	ppb	2.59	2000.	>LDR
232 Th	977.4	977.4	ppb	2.39	1000.	
238 U	993.2	993.2	ppb	2.39	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3141640.30	2.65	3440039.00	91.3	69.5 - 120	
45 Sc	3071577.80	2.24	3153680.00	97.4	69.5 - 120	
89 Y	4058057.80	2.12	4049389.00	100.2	69.5 - 120	
159 Tb	4389522.00	1.66	4277856.00	102.6	69.5 - 120	
209 Bi	2498276.50	1.57	2443113.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

20 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000170

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 20 2018 06:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0086	0.0086	ppb	42.93	100.	
11 B	7.05	7.05	ppb	16.94	1000.	
23 Na	196,000.	196,000.	ppb	0.07	200000.	
25 Mg	190,000.	190,000.	ppb	0.64	200000.	
27 Al	189,200.	189,200.	ppb	1.14	200000.	
28 Si	11,620.	11,620.	ppb	1.35	#VALUE!	
29 Si	7,305.	7,305.	ppb	1.54	10000.	
39 K	196,400.	196,400.	ppb	1.13	200000.	
43 Ca	197,600.	197,600.	ppb	0.20	#VALUE!	
44 Ca	196,300.	196,300.	ppb	0.40	200000.	
51 V	0.2146	0.2146	ppb	7.47	1000.	
52 Cr	3.191	3.191	ppb	2.13	2000.	
53 Cr	1.56	1.56	ppb	8.13	#VALUE!	
55 Mn	8.261	8.261	ppb	0.72	2000.	
56 Fe	101,300.	101,300.	ppb	0.69	#VALUE!	
57 Fe	99,200.	99,200.	ppb	0.74	100000.	
59 Co	2.924	2.924	ppb	1.27	1000.	
60 Ni	3.822	3.822	ppb	2.30	1000.	
63 Cu	8.256	8.256	ppb	0.94	#VALUE!	
65 Cu	2.955	2.955	ppb	0.89	2000.	
66 Zn	4.362	4.362	ppb	3.56	2000.	
68 Zn	2.381	2.381	ppb	13.11	#VALUE!	
75 As	0.4207	0.4207	ppb	29.74	1000.	
82 Se	0.2864	0.2864	ppb	14.72	1000.	
88 Sr	6.974	6.974	ppb	0.80	2000.	
98 Mo	0.5508	0.5508	ppb	14.27	1000.	
107 Ag	0.3697	0.3697	ppb	2.28	100.	
109 Ag	0.3631	0.3631	ppb	3.22	#VALUE!	
111 Cd	-0.0462	-0.0462	ppb	55.60	#VALUE!	
114 Cd	0.0043	0.0043	ppb	146.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2569	0.2569	ppb	9.23	1000.	
120 Sn	0.2473	0.2473	ppb	7.10	#VALUE!	
121 Sb	0.1218	0.1218	ppb	7.47	#VALUE!	
123 Sb	0.1244	0.1244	ppb	12.26	1000.	
135 Ba	0.3109	0.3109	ppb	7.20	2000.	
137 Ba	0.2819	0.2819	ppb	12.31	#VALUE!	
182 W	0.4095	0.4095	ppb	10.69	1000.	
203 Tl	0.052	0.052	ppb	8.79	1000.	
205 Tl	0.0616	0.0616	ppb	15.33	#VALUE!	
208 Pb	0.624	0.624	ppb	4.53	2000.	
232 Th	0.1836	0.1836	ppb	44.60	1000.	
238 U	0.1291	0.1291	ppb	23.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3268713.50	4.46	3440039.00	95.0	69.5 - 120	
45 Sc	3295930.30	1.79	3153680.00	104.5	69.5 - 120	
89 Y	3967992.80	0.96	4049389.00	98.0	69.5 - 120	
159 Tb	4141300.30	0.13	4277856.00	96.8	69.5 - 120	
209 Bi	2065935.60	0.54	2443113.00	84.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000171

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 20 2018 06:09 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	1991.80	100.	
11 B	3.176	3.176	ppb	9.54	1000.	
23 Na	8.825	8.825	ppb	45.48	200000.	
25 Mg	3.068	3.068	ppb	82.66	200000.	
27 Al	2.78	2.78	ppb	87.48	200000.	
28 Si	74.29	74.29	ppb	44.17	#VALUE!	
29 Si	-68.23	-68.23	ppb	15.07	10000.	
39 K	0.3968	0.3968	ppb	642.39	200000.	
43 Ca	0.3299	0.3299	ppb	1211.60	#VALUE!	
44 Ca	2.998	2.998	ppb	96.63	200000.	
51 V	0.0009	0.0009	ppb	5304.40	1000.	
52 Cr	0.0282	0.0282	ppb	77.51	2000.	
53 Cr	0.8151	0.8151	ppb	39.68	#VALUE!	
55 Mn	0.0008	0.0008	ppb	2020.60	2000.	
56 Fe	4.219	4.219	ppb	116.09	#VALUE!	
57 Fe	3.185	3.185	ppb	205.90	100000.	
59 Co	0.0057	0.0057	ppb	59.57	1000.	
60 Ni	0.014	0.014	ppb	64.89	1000.	
63 Cu	0.021	0.021	ppb	76.12	#VALUE!	
65 Cu	0.0201	0.0201	ppb	25.82	2000.	
66 Zn	-0.0387	-0.0387	ppb	145.73	2000.	
68 Zn	0.0682	0.0682	ppb	291.60	#VALUE!	
75 As	-0.1838	-0.1838	ppb	62.19	1000.	
82 Se	-0.0277	-0.0277	ppb	407.94	1000.	
88 Sr	0.0165	0.0165	ppb	69.15	2000.	
98 Mo	0.0904	0.0904	ppb	39.85	1000.	
107 Ag	0.0036	0.0036	ppb	87.63	100.	
109 Ag	0.0011	0.0011	ppb	230.53	#VALUE!	
111 Cd	-0.0712	-0.0712	ppb	47.48	#VALUE!	
114 Cd	0.0094	0.0094	ppb	104.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0493	0.0493	ppb	40.29	1000.	
120 Sn	0.0563	0.0563	ppb	5.66	#VALUE!	
121 Sb	0.0209	0.0209	ppb	38.68	#VALUE!	
123 Sb	0.0159	0.0159	ppb	9.84	1000.	
135 Ba	0.023	0.023	ppb	74.87	2000.	
137 Ba	0.0133	0.0133	ppb	124.29	#VALUE!	
182 W	0.0754	0.0754	ppb	17.66	1000.	
203 Tl	0.0041	0.0041	ppb	269.05	1000.	
205 Tl	0.0132	0.0132	ppb	64.96	#VALUE!	
208 Pb	0.015	0.015	ppb	103.34	2000.	
232 Th	0.0112	0.0112	ppb	49.89	1000.	
238 U	0.0159	0.0159	ppb	10.11	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3183505.30	2.81	3440039.00	92.5	69.5 - 120	
45 Sc	3046242.00	0.04	3153680.00	96.6	69.5 - 120	
89 Y	3899948.80	0.50	4049389.00	96.3	69.5 - 120	
159 Tb	4195899.50	1.62	4277856.00	98.1	69.5 - 120	
209 Bi	2370111.80	0.79	2443113.00	97.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000172

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 20 2018 06:13 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	432.42	100.	
11 B	1.818	1.818	ppb	9.03	1000.	
23 Na	3.083	3.083	ppb	10.90	200000.	
25 Mg	0.7798	0.7798	ppb	30.21	200000.	
27 Al	0.4672	0.4672	ppb	46.13	200000.	
28 Si	22.02	22.02	ppb	38.66	#VALUE!	
29 Si	50.98	50.98	ppb	417.03	10000.	
39 K	-1.936	-1.936	ppb	129.65	200000.	
43 Ca	-2.	-2.	ppb	106.95	#VALUE!	
44 Ca	-1.655	-1.655	ppb	187.67	200000.	
51 V	0.0551	0.0551	ppb	48.97	1000.	
52 Cr	0.0056	0.0056	ppb	565.14	2000.	
53 Cr	0.3613	0.3613	ppb	40.69	#VALUE!	
55 Mn	-0.0046	-0.0046	ppb	136.46	2000.	
56 Fe	1.475	1.475	ppb	280.20	#VALUE!	
57 Fe	-1.865	-1.865	ppb	134.80	100000.	
59 Co	0.0063	0.0063	ppb	34.53	1000.	
60 Ni	-0.0001	-0.0001	ppb	14351.00	1000.	
63 Cu	0.0146	0.0146	ppb	14.78	#VALUE!	
65 Cu	0.01	0.01	ppb	28.60	2000.	
66 Zn	-0.0193	-0.0193	ppb	146.71	2000.	
68 Zn	0.0344	0.0344	ppb	194.08	#VALUE!	
75 As	-0.0599	-0.0599	ppb	249.54	1000.	
82 Se	0.3165	0.3165	ppb	62.18	1000.	
88 Sr	0.0028	0.0028	ppb	113.65	2000.	
98 Mo	0.0393	0.0393	ppb	14.96	1000.	
107 Ag	0.0013	0.0013	ppb	88.70	100.	
109 Ag	0.0005	0.0005	ppb	416.05	#VALUE!	
111 Cd	-0.085	-0.085	ppb	20.74	#VALUE!	
114 Cd	0.001	0.001	ppb	454.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0147	0.0147	ppb	76.67	1000.	
120 Sn	0.0338	0.0338	ppb	29.03	#VALUE!	
121 Sb	0.0059	0.0059	ppb	74.48	#VALUE!	
123 Sb	0.0077	0.0077	ppb	24.62	1000.	
135 Ba	0.0146	0.0146	ppb	67.16	2000.	
137 Ba	0.0032	0.0032	ppb	300.38	#VALUE!	
182 W	0.0478	0.0478	ppb	24.87	1000.	
203 Tl	-0.0007	-0.0007	ppb	246.04	1000.	
205 Tl	0.0047	0.0047	ppb	45.98	#VALUE!	
208 Pb	0.0065	0.0065	ppb	61.39	2000.	
232 Th	0.0062	0.0062	ppb	27.85	1000.	
238 U	0.0041	0.0041	ppb	35.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177742.80	2.23	3440039.00	92.4	69.5 - 120	
45 Sc	3048740.30	2.04	3153680.00	96.7	69.5 - 120	
89 Y	3915306.30	1.39	4049389.00	96.7	69.5 - 120	
159 Tb	4194156.30	1.77	4277856.00	98.0	69.5 - 120	
209 Bi	2376836.80	2.24	2443113.00	97.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000173

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\028_CCV.D\028_CCV.D#
Date Acquired: Mar 20 2018 06:17 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.1	ppb	1.16	25	100.4	
11 B	25.76	ppb	3.48	25	103.04	
23 Na	4,913.	ppb	1.14	5,000	98.26	
25 Mg	4,945.	ppb	0.65	5,000	98.9	
27 Al	484.5	ppb	0.92	500	96.9	
28 Si	426.2	ppb	12.65	500	85.24	
29 Si	152.3	ppb	9.28	500	30.46	Fail
39 K	4,901.	ppb	0.38	5,000	98.02	
43 Ca	4,953.	ppb	1.76	5,000	99.06	
44 Ca	5,088.	ppb	0.28	5,000	101.76	
51 V	24.69	ppb	0.59	25	98.76	
52 Cr	24.93	ppb	0.41	25	99.72	
53 Cr	24.9	ppb	1.01	25	99.6	
55 Mn	24.82	ppb	0.23	25	99.28	
56 Fe	4,991.	ppb	0.61	5,000	99.82	
57 Fe	5,113.	ppb	1.21	5,000	102.26	
59 Co	24.92	ppb	0.48	25	99.68	
60 Ni	25.08	ppb	0.78	25	100.32	
63 Cu	25.38	ppb	0.35	25	101.52	
65 Cu	25.06	ppb	1.63	25	100.24	
66 Zn	25.08	ppb	0.92	25	100.32	
68 Zn	24.89	ppb	2.58	25	99.56	
75 As	25.03	ppb	1.04	25	100.12	
82 Se	25.69	ppb	2.61	25	102.76	
88 Sr	24.96	ppb	1.07	25	99.84	
98 Mo	25.31	ppb	1.22	25	101.24	
107 Ag	25.66	ppb	0.53	25	102.64	
109 Ag	25.57	ppb	0.42	25	102.28	
111 Cd	25.72	ppb	1.63	25	102.88	
114 Cd	25.59	ppb	0.69	25	102.36	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.03	ppb	0.20	25	100.12	
120 Sn	24.8	ppb	1.87	25	99.2	
121 Sb	24.64	ppb	0.52	25	98.56	
123 Sb	24.95	ppb	1.24	25	99.8	
135 Ba	25.45	ppb	0.81	25	101.8	
137 Ba	25.19	ppb	1.45	25	100.76	
182 W	24.67	ppb	0.91	25	98.68	
203 Tl	24.65	ppb	0.86	25	98.6	
205 Tl	24.76	ppb	1.39	25	99.04	
208 Pb	24.69	ppb	1.71	25	98.76	
232 Th	24.68	ppb	1.40	25	98.72	
238 U	24.95	ppb	0.66	25	99.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3409218.00	0.98	3440039.00	99.1	80 - 120.4	
45 Sc	3252504.30	0.19	3153680.00	103.1	80 - 120.4	
89 Y	4222293.50	0.46	4049389.00	104.3	80 - 120.4	
159 Tb	4582039.50	0.57	4277856.00	107.1	80 - 120.4	
209 Bi	2563228.00	0.67	2443113.00	104.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000174

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\029_CCB.D\029_CCB.D#
Date Acquired: Mar 20 2018 06:21 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	95.35	1.00	
11 B	1.147	ppb	13.30	1.00	
23 Na	1.914	ppb	5.12	1.00	
25 Mg	0.5609	ppb	23.68	1.00	
27 Al	0.3149	ppb	15.97	1.00	
28 Si	22.84	ppb	422.33	1.00	
29 Si	-53.32	ppb	67.27	1.00	
39 K	-2.998	ppb	9.75	1.00	
43 Ca	-3.952	ppb	81.53	1.00	
44 Ca	-1.199	ppb	106.51	1.00	
51 V	0.0497	ppb	138.92	1.00	
52 Cr	-0.0348	ppb	74.35	1.00	
53 Cr	-0.4515	ppb	44.25	1.00	
55 Mn	-0.0109	ppb	19.65	1.00	
56 Fe	-3.379	ppb	81.21	1.00	
57 Fe	-2.041	ppb	12.42	1.00	
59 Co	0.0102	ppb	35.37	1.00	
60 Ni	-0.0035	ppb	174.68	1.00	
63 Cu	0.0058	ppb	82.17	1.00	
65 Cu	0.0106	ppb	76.85	1.00	
66 Zn	-0.0325	ppb	66.70	1.00	
68 Zn	0.0046	ppb	4378.00	1.00	
75 As	-0.0579	ppb	31.73	1.00	
82 Se	0.1921	ppb	82.09	1.00	
88 Sr	0.0034	ppb	166.74	1.00	
98 Mo	0.037	ppb	16.70	1.00	
107 Ag	0.0005	ppb	175.26	1.00	
109 Ag	0.0011	ppb	5.41	1.00	
111 Cd	-0.0492	ppb	15.34	1.00	
114 Cd	0.0053	ppb	58.18	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0131	ppb	63.77	1.00	
120 Sn	0.0223	ppb	50.00	1.00	
121 Sb	0.0046	ppb	113.37	1.00	
123 Sb	0.0054	ppb	99.22	1.00	
135 Ba	0.0048	ppb	171.13	1.00	
137 Ba	0.0103	ppb	44.52	1.00	
182 W	0.0323	ppb	10.03	1.00	
203 Tl	0.0006	ppb	277.16	1.00	
205 Tl	0.0056	ppb	47.24	1.00	
208 Pb	0.0044	ppb	16.56	1.00	
232 Th	0.0139	ppb	22.23	1.00	
238 U	0.0056	ppb	6.54	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3160834.30	0.60	3440039.00	91.9	79.5 - 120	
45 Sc	3007026.00	0.90	3153680.00	95.3	79.5 - 120	
89 Y	3927302.80	1.25	4049389.00	97.0	79.5 - 120	
159 Tb	4246431.00	0.57	4277856.00	99.3	79.5 - 120	
209 Bi	2391103.50	0.99	2443113.00	97.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000175

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\030SMPL.D\030SMPL.D#
Date Acquired: Mar 20 2018 06:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLC19IMS1
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0038	0.0008	ppb	213.90	100.	
11 B	4.196	0.8392	ppb	4.41	1000.	
23 Na	40.335	8.067	ppb	3.89	200000.	
25 Mg	16.96	3.392	ppb	3.44	200000.	
27 Al	14.06	2.812	ppb	1.73	200000.	
28 Si	-136.7	-27.34	ppb	485.74	#VALUE!	
29 Si	-390.95	-78.19	ppb	30.75	10000.	
39 K	14.135	2.827	ppb	13.13	200000.	
43 Ca	7.535	1.507	ppb	222.16	#VALUE!	
44 Ca	29.59	5.918	ppb	23.27	200000.	
51 V	-0.0551	-0.011	ppb	593.73	1000.	
52 Cr	1.158	0.2316	ppb	4.89	2000.	
53 Cr	31.915	6.383	ppb	1.35	#VALUE!	
55 Mn	0.3513	0.0703	ppb	13.92	2000.	
56 Fe	8.85	1.77	ppb	189.83	#VALUE!	
57 Fe	12.28	2.456	ppb	27.31	100000.	
59 Co	0.0499	0.01	ppb	49.92	1000.	
60 Ni	0.52	0.104	ppb	21.34	1000.	
63 Cu	0.6185	0.1237	ppb	15.63	#VALUE!	
65 Cu	0.7535	0.1507	ppb	9.75	2000.	
66 Zn	0.6805	0.1361	ppb	34.87	2000.	
68 Zn	0.1714	0.0343	ppb	244.75	#VALUE!	
75 As	0.0835	0.0167	ppb	528.26	1000.	
82 Se	0.0723	0.0145	ppb	2054.60	1000.	
88 Sr	0.1774	0.0355	ppb	10.66	2000.	
98 Mo	0.2238	0.0448	ppb	18.93	1000.	
107 Ag	0.007	0.0014	ppb	158.84	100.	
109 Ag	0.0024	0.0005	ppb	222.36	#VALUE!	
111 Cd	-0.3716	-0.0743	ppb	10.88	#VALUE!	
114 Cd	-0.0205	-0.0041	ppb	252.44	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.45	8.69	ppb	2.34	1000.	
120 Sn	43.285	8.657	ppb	2.29	#VALUE!	
121 Sb	0.1462	0.0292	ppb	36.20	#VALUE!	
123 Sb	0.1576	0.0315	ppb	5.94	1000.	
135 Ba	0.309	0.0618	ppb	16.91	2000.	
137 Ba	0.3464	0.0693	ppb	18.71	#VALUE!	
182 W	0.2176	0.0435	ppb	9.05	1000.	
203 Tl	-0.0104	-0.0021	ppb	158.55	1000.	
205 Tl	0.0211	0.0042	ppb	49.41	#VALUE!	
208 Pb	0.3072	0.0614	ppb	11.71	2000.	
232 Th	0.0985	0.0197	ppb	25.98	1000.	
238 U	0.0149	0.003	ppb	14.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3127207.00	2.40	3440039.00	90.9	69.5 - 120	
45 Sc	2960250.30	1.34	3153680.00	93.9	69.5 - 120	
89 Y	3968085.30	0.98	4049389.00	98.0	69.5 - 120	
159 Tb	4269939.50	1.27	4277856.00	99.8	69.5 - 120	
209 Bi	2388984.80	1.02	2443113.00	97.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000176

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\031SMPL.D\031SMPL.D#
Date Acquired: Mar 20 2018 06:29 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLC19IMS1
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.29	9.858	ppb	0.86	100.	
11 B	502.	100.4	ppb	3.12	1000.	
23 Na	7,310.	1,462.	ppb	1.49	200000.	
25 Mg	5,075.	1,015.	ppb	3.16	200000.	
27 Al	1,980.	396.	ppb	1.76	200000.	
28 Si	408.55	81.71	ppb	5.17	#VALUE!	
29 Si	-265.15	-53.03	ppb	62.70	10000.	
39 K	9,755.	1,951.	ppb	1.88	200000.	
43 Ca	2,839.	567.8	ppb	2.29	#VALUE!	
44 Ca	2,526.	505.2	ppb	2.91	200000.	
51 V	490.3	98.06	ppb	1.49	1000.	
52 Cr	193.95	38.79	ppb	1.85	2000.	
53 Cr	226.55	45.31	ppb	2.33	#VALUE!	
55 Mn	488.55	97.71	ppb	0.97	2000.	
56 Fe	949.	189.8	ppb	1.47	#VALUE!	
57 Fe	973.	194.6	ppb	2.00	100000.	
59 Co	501.5	100.3	ppb	1.28	1000.	
60 Ni	505.	101.	ppb	2.32	1000.	
63 Cu	244.9	48.98	ppb	1.81	#VALUE!	
65 Cu	246.7	49.34	ppb	2.44	2000.	
66 Zn	479.05	95.81	ppb	1.78	2000.	
68 Zn	543.5	108.7	ppb	2.48	#VALUE!	
75 As	100.	20.	ppb	0.45	1000.	
82 Se	97.85	19.57	ppb	2.54	1000.	
88 Sr	505.	101.	ppb	1.30	2000.	
98 Mo	101.3	20.26	ppb	1.14	1000.	
107 Ag	51.1	10.22	ppb	0.22	100.	
109 Ag	51.7	10.34	ppb	1.45	#VALUE!	
111 Cd	254.65	50.93	ppb	1.15	#VALUE!	
114 Cd	255.05	51.01	ppb	1.56	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	547.	109.4	ppb	1.34	1000.	
120 Sn	543.	108.6	ppb	0.87	#VALUE!	
121 Sb	100.65	20.13	ppb	0.20	#VALUE!	
123 Sb	102.45	20.49	ppb	0.96	1000.	
135 Ba	2,051.5	410.3	ppb	0.99	2000.	
137 Ba	2,052.	410.4	ppb	0.64	#VALUE!	
182 W	98.25	19.65	ppb	0.96	1000.	
203 Tl	100.55	20.11	ppb	1.06	1000.	
205 Tl	100.95	20.19	ppb	1.31	#VALUE!	
208 Pb	102.25	20.45	ppb	0.99	2000.	
232 Th	101.15	20.23	ppb	1.06	1000.	
238 U	103.05	20.61	ppb	1.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3317135.00	1.16	3440039.00	96.4	69.5 - 120	
45 Sc	3101099.30	1.27	3153680.00	98.3	69.5 - 120	
89 Y	4176889.00	0.78	4049389.00	103.1	69.5 - 120	
159 Tb	4470974.00	0.59	4277856.00	104.5	69.5 - 120	
209 Bi	2484766.80	0.88	2443113.00	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000177

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 20 2018 06:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.375	2.875	ppb	1.10	100.	
11 B	92.55	18.51	ppb	0.89	1000.	
23 Na	35,280.	7,056.	ppb	2.40	200000.	
25 Mg	102,350.	20,470.	ppb	2.24	200000.	
27 Al	234,150.	46,830.	ppb	2.05	200000.	
28 Si	1,051.5	210.3	ppb	33.21	#VALUE!	
29 Si	-225.25	-45.05	ppb	46.77	10000.	
39 K	62,250.	12,450.	ppb	1.52	200000.	
43 Ca	221,150.	44,230.	ppb	0.96	#VALUE!	
44 Ca	212,950.	42,590.	ppb	0.98	200000.	
51 V	363.55	72.71	ppb	1.06	1000.	
52 Cr	185.45	37.09	ppb	1.20	2000.	
53 Cr	202.4	40.48	ppb	1.74	#VALUE!	
55 Mn	1,531.5	306.3	ppb	0.36	2000.	
56 Fe	194,400.	38,880.	ppb	1.20	#VALUE!	
57 Fe	189,250.	37,850.	ppb	0.68	100000.	
59 Co	79.55	15.91	ppb	1.57	1000.	
60 Ni	209.1	41.82	ppb	2.14	1000.	
63 Cu	177.	35.4	ppb	0.87	#VALUE!	
65 Cu	176.8	35.36	ppb	1.64	2000.	
66 Zn	619.	123.8	ppb	1.81	2000.	
68 Zn	698.5	139.7	ppb	1.03	#VALUE!	
75 As	97.45	19.49	ppb	1.48	1000.	
82 Se	5.44	1.088	ppb	18.15	1000.	
88 Sr	1,222.5	244.5	ppb	1.12	2000.	
98 Mo	4.352	0.8704	ppb	4.84	1000.	
107 Ag	1.2205	0.2441	ppb	3.17	100.	
109 Ag	1.0735	0.2147	ppb	0.83	#VALUE!	
111 Cd	1.9185	0.3837	ppb	4.84	#VALUE!	
114 Cd	-0.0015	-0.0003	ppb	2617.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.85	11.37	ppb	1.49	1000.	
120 Sn	56.3	11.26	ppb	1.86	#VALUE!	
121 Sb	2.138	0.4276	ppb	2.15	#VALUE!	
123 Sb	2.034	0.4068	ppb	2.72	1000.	
135 Ba	3,216.5	643.3	ppb	1.60	2000.	
137 Ba	3,211.5	642.3	ppb	1.82	#VALUE!	
182 W	0.731	0.1462	ppb	5.51	1000.	
203 Tl	4.658	0.9316	ppb	0.42	1000.	
205 Tl	4.6865	0.9373	ppb	1.34	#VALUE!	
208 Pb	187.8	37.56	ppb	1.68	2000.	
232 Th	127.45	25.49	ppb	1.46	1000.	
238 U	22.435	4.487	ppb	2.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3378208.50	1.38	3440039.00	98.2	69.5 - 120	
45 Sc	3357179.00	1.23	3153680.00	106.5	69.5 - 120	
89 Y	4972454.50	0.76	4049389.00	122.8	69.5 - 120	IS Fai
159 Tb	4647154.50	1.34	4277856.00	108.6	69.5 - 120	
209 Bi	2463710.50	1.09	2443113.00	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000178

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 20 2018 06:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.645	2.729	ppb	2.47	100.	
11 B	107.15	21.43	ppb	2.97	1000.	
23 Na	32,320.	6,464.	ppb	0.81	200000.	
25 Mg	86,400.	17,280.	ppb	0.58	200000.	
27 Al	231,750.	46,350.	ppb	0.47	200000.	
28 Si	2,097.	419.4	ppb	9.40	#VALUE!	
29 Si	913.	182.6	ppb	106.24	10000.	
39 K	65,850.	13,170.	ppb	0.58	200000.	
43 Ca	167,850.	33,570.	ppb	0.88	#VALUE!	
44 Ca	166,500.	33,300.	ppb	0.53	200000.	
51 V	468.35	93.67	ppb	0.31	1000.	
52 Cr	196.4	39.28	ppb	0.15	2000.	
53 Cr	215.6	43.12	ppb	1.44	#VALUE!	
55 Mn	1,618.5	323.7	ppb	1.22	2000.	
56 Fe	218,150.	43,630.	ppb	0.43	#VALUE!	
57 Fe	214,200.	42,840.	ppb	0.69	100000.	
59 Co	95.95	19.19	ppb	0.22	1000.	
60 Ni	245.8	49.16	ppb	0.31	1000.	
63 Cu	188.7	37.74	ppb	0.38	#VALUE!	
65 Cu	188.1	37.62	ppb	1.05	2000.	
66 Zn	636.	127.2	ppb	0.35	2000.	
68 Zn	689.	137.8	ppb	0.56	#VALUE!	
75 As	186.8	37.36	ppb	0.49	1000.	
82 Se	5.64	1.128	ppb	20.33	1000.	
88 Sr	849.5	169.9	ppb	0.39	2000.	
98 Mo	8.945	1.789	ppb	1.03	1000.	
107 Ag	1.5325	0.3065	ppb	6.87	100.	
109 Ag	1.3475	0.2695	ppb	1.03	#VALUE!	
111 Cd	1.8845	0.3769	ppb	16.80	#VALUE!	
114 Cd	-0.3605	-0.0721	ppb	46.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.6	10.32	ppb	0.64	1000.	
120 Sn	51.05	10.21	ppb	0.84	#VALUE!	
121 Sb	2.9315	0.5863	ppb	2.90	#VALUE!	
123 Sb	3.0165	0.6033	ppb	4.51	1000.	
135 Ba	2,087.5	417.5	ppb	0.61	2000.	
137 Ba	2,076.	415.2	ppb	0.28	#VALUE!	
182 W	1.056	0.2112	ppb	10.16	1000.	
203 Tl	4.2285	0.8457	ppb	5.34	1000.	
205 Tl	4.2985	0.8597	ppb	1.65	#VALUE!	
208 Pb	200.05	40.01	ppb	0.45	2000.	
232 Th	120.75	24.15	ppb	0.62	1000.	
238 U	26.	5.2	ppb	0.78	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3442120.30	0.71	3440039.00	100.1	69.5 - 120	
45 Sc	3364367.50	0.73	3153680.00	106.7	69.5 - 120	
89 Y	4959504.00	0.50	4049389.00	122.5	69.5 - 120	IS Fai
159 Tb	4681858.50	0.34	4277856.00	109.4	69.5 - 120	
209 Bi	2493624.30	0.58	2443113.00	102.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000179

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 20 2018 06:41 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-003
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.52	2.104	ppb	2.04	100.	
11 B	135.35	27.07	ppb	1.01	1000.	
23 Na	11,410.	2,282.	ppb	1.07	200000.	
25 Mg	83,200.	16,640.	ppb	1.30	200000.	
27 Al	216,050.	43,210.	ppb	0.34	200000.	
28 Si	2,386.	477.2	ppb	9.65	#VALUE!	
29 Si	1,171.	234.2	ppb	85.91	10000.	
39 K	55,600.	11,120.	ppb	0.56	200000.	
43 Ca	593,500.	118,700.	ppb	0.62	#VALUE!	
44 Ca	584,000.	116,800.	ppb	1.16	200000.	
51 V	445.65	89.13	ppb	0.88	1000.	
52 Cr	190.65	38.13	ppb	1.50	2000.	
53 Cr	211.7	42.34	ppb	1.40	#VALUE!	
55 Mn	1,664.	332.8	ppb	1.20	2000.	
56 Fe	179,900.	35,980.	ppb	1.38	#VALUE!	
57 Fe	175,950.	35,190.	ppb	1.13	100000.	
59 Co	80.25	16.05	ppb	1.67	1000.	
60 Ni	202.	40.4	ppb	1.82	1000.	
63 Cu	130.2	26.04	ppb	1.98	#VALUE!	
65 Cu	131.95	26.39	ppb	0.96	2000.	
66 Zn	494.85	98.97	ppb	2.74	2000.	
68 Zn	616.	123.2	ppb	1.88	#VALUE!	
75 As	105.25	21.05	ppb	1.93	1000.	
82 Se	5.12	1.024	ppb	10.01	1000.	
88 Sr	1,457.	291.4	ppb	0.74	2000.	
98 Mo	5.63	1.126	ppb	2.78	1000.	
107 Ag	0.837	0.1674	ppb	3.51	100.	
109 Ag	0.587	0.1174	ppb	2.26	#VALUE!	
111 Cd	3.4285	0.6857	ppb	2.19	#VALUE!	
114 Cd	0.042	0.0084	ppb	285.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.2	11.44	ppb	1.37	1000.	
120 Sn	55.75	11.15	ppb	1.37	#VALUE!	
121 Sb	2.567	0.5134	ppb	2.41	#VALUE!	
123 Sb	2.6875	0.5375	ppb	0.44	1000.	
135 Ba	4,120.5	824.1	ppb	0.95	2000.	
137 Ba	4,039.	807.8	ppb	0.93	#VALUE!	
182 W	0.892	0.1784	ppb	12.14	1000.	
203 Tl	3.753	0.7506	ppb	4.86	1000.	
205 Tl	3.686	0.7372	ppb	3.65	#VALUE!	
208 Pb	146.5	29.3	ppb	0.90	2000.	
232 Th	97.25	19.45	ppb	0.81	1000.	
238 U	20.865	4.173	ppb	1.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3438885.50	0.82	3440039.00	100.0	69.5 - 120	
45 Sc	3355001.50	0.54	3153680.00	106.4	69.5 - 120	
89 Y	4863368.50	1.09	4049389.00	120.1	69.5 - 120	
159 Tb	4727172.00	0.47	4277856.00	110.5	69.5 - 120	
209 Bi	2476370.50	0.33	2443113.00	101.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000180

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 20 2018 06:45 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-004
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.835	1.567	ppb	1.13	100.	
11 B	89.3	17.86	ppb	2.95	1000.	
23 Na	16,385.	3,277.	ppb	1.40	200000.	
25 Mg	46,630.	9,326.	ppb	1.02	200000.	
27 Al	146,200.	29,240.	ppb	1.92	200000.	
28 Si	2,320.	464.	ppb	8.30	#VALUE!	
29 Si	529.5	105.9	ppb	24.32	10000.	
39 K	38,170.	7,634.	ppb	0.90	200000.	
43 Ca	63,350.	12,670.	ppb	0.76	#VALUE!	
44 Ca	62,450.	12,490.	ppb	0.69	200000.	
51 V	304.4	60.88	ppb	0.99	1000.	
52 Cr	136.9	27.38	ppb	1.65	2000.	
53 Cr	159.5	31.9	ppb	1.16	#VALUE!	
55 Mn	812.5	162.5	ppb	1.14	2000.	
56 Fe	152,100.	30,420.	ppb	0.70	#VALUE!	
57 Fe	149,200.	29,840.	ppb	0.82	100000.	
59 Co	38.54	7.708	ppb	1.15	1000.	
60 Ni	136.3	27.26	ppb	2.51	1000.	
63 Cu	114.95	22.99	ppb	1.51	#VALUE!	
65 Cu	115.95	23.19	ppb	1.20	2000.	
66 Zn	349.9	69.98	ppb	2.26	2000.	
68 Zn	370.85	74.17	ppb	1.82	#VALUE!	
75 As	48.13	9.626	ppb	0.74	1000.	
82 Se	3.125	0.625	ppb	30.99	1000.	
88 Sr	361.35	72.27	ppb	0.66	2000.	
98 Mo	6.395	1.279	ppb	2.79	1000.	
107 Ag	0.671	0.1342	ppb	5.11	100.	
109 Ag	0.4556	0.0911	ppb	5.27	#VALUE!	
111 Cd	1.919	0.3838	ppb	1.81	#VALUE!	
114 Cd	-0.223	-0.0446	ppb	38.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.45	9.89	ppb	1.97	1000.	
120 Sn	49.575	9.915	ppb	1.90	#VALUE!	
121 Sb	1.7795	0.3559	ppb	4.22	#VALUE!	
123 Sb	1.8035	0.3607	ppb	10.90	1000.	
135 Ba	1,062.	212.4	ppb	2.03	2000.	
137 Ba	1,053.5	210.7	ppb	0.82	#VALUE!	
182 W	0.645	0.129	ppb	10.77	1000.	
203 Tl	2.919	0.5838	ppb	4.05	1000.	
205 Tl	2.94	0.588	ppb	2.40	#VALUE!	
208 Pb	140.5	28.1	ppb	0.28	2000.	
232 Th	73.2	14.64	ppb	0.71	1000.	
238 U	13.18	2.636	ppb	0.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3439075.50	1.50	3440039.00	100.0	69.5 - 120	
45 Sc	3287444.00	1.37	3153680.00	104.2	69.5 - 120	
89 Y	4729257.50	1.48	4049389.00	116.8	69.5 - 120	
159 Tb	4710183.50	1.31	4277856.00	110.1	69.5 - 120	
209 Bi	2520693.50	0.75	2443113.00	103.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000181

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 20 2018 06:50 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-005
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.715	1.943	ppb	4.28	100.	
11 B	115.05	23.01	ppb	1.40	1000.	
23 Na	33,500.	6,700.	ppb	0.60	200000.	
25 Mg	90,550.	18,110.	ppb	0.46	200000.	
27 Al	179,150.	35,830.	ppb	0.91	200000.	
28 Si	1,867.	373.4	ppb	8.43	#VALUE!	
29 Si	171.5	34.3	ppb	48.69	10000.	
39 K	49,920.	9,984.	ppb	1.06	200000.	
43 Ca	203,850.	40,770.	ppb	0.73	#VALUE!	
44 Ca	196,900.	39,380.	ppb	1.01	200000.	
51 V	294.95	58.99	ppb	0.73	1000.	
52 Cr	155.	31.	ppb	0.69	2000.	
53 Cr	172.4	34.48	ppb	0.32	#VALUE!	
55 Mn	2,205.5	441.1	ppb	0.46	2000.	
56 Fe	158,150.	31,630.	ppb	0.10	#VALUE!	
57 Fe	154,700.	30,940.	ppb	1.06	100000.	
59 Co	52.5	10.5	ppb	1.15	1000.	
60 Ni	125.3	25.06	ppb	0.84	1000.	
63 Cu	113.75	22.75	ppb	0.88	#VALUE!	
65 Cu	114.35	22.87	ppb	0.55	2000.	
66 Zn	445.9	89.18	ppb	0.46	2000.	
68 Zn	496.85	99.37	ppb	1.66	#VALUE!	
75 As	34.435	6.887	ppb	2.39	1000.	
82 Se	5.66	1.132	ppb	14.00	1000.	
88 Sr	862.	172.4	ppb	0.18	2000.	
98 Mo	9.555	1.911	ppb	4.21	1000.	
107 Ag	0.992	0.1984	ppb	3.74	100.	
109 Ag	0.738	0.1476	ppb	9.27	#VALUE!	
111 Cd	2.0185	0.4037	ppb	16.86	#VALUE!	
114 Cd	-0.402	-0.0804	ppb	19.35	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.45	10.09	ppb	1.96	1000.	
120 Sn	49.945	9.989	ppb	1.32	#VALUE!	
121 Sb	1.624	0.3248	ppb	9.32	#VALUE!	
123 Sb	1.771	0.3542	ppb	6.65	1000.	
135 Ba	1,939.	387.8	ppb	1.07	2000.	
137 Ba	1,928.5	385.7	ppb	0.64	#VALUE!	
182 W	0.7785	0.1557	ppb	12.67	1000.	
203 Tl	3.1675	0.6335	ppb	4.25	1000.	
205 Tl	3.0905	0.6181	ppb	2.91	#VALUE!	
208 Pb	143.6	28.72	ppb	1.56	2000.	
232 Th	88.35	17.67	ppb	1.50	1000.	
238 U	18.965	3.793	ppb	2.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3418222.80	3.12	3440039.00	99.4	69.5 - 120	
45 Sc	3386331.80	0.58	3153680.00	107.4	69.5 - 120	
89 Y	4809434.00	0.48	4049389.00	118.8	69.5 - 120	
159 Tb	4705654.00	1.07	4277856.00	110.0	69.5 - 120	
209 Bi	2498451.00	1.28	2443113.00	102.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000182

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 20 2018 06:54 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-006
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.12	1.824	ppb	1.03	100.	
11 B	97.6	19.52	ppb	2.09	1000.	
23 Na	18,365.	3,673.	ppb	1.02	200000.	
25 Mg	80,600.	16,120.	ppb	1.26	200000.	
27 Al	176,900.	35,380.	ppb	1.34	200000.	
28 Si	2,378.5	475.7	ppb	19.70	#VALUE!	
29 Si	985.5	197.1	ppb	92.39	10000.	
39 K	44,730.	8,946.	ppb	0.83	200000.	
43 Ca	142,950.	28,590.	ppb	0.70	#VALUE!	
44 Ca	140,900.	28,180.	ppb	0.63	200000.	
51 V	360.65	72.13	ppb	0.37	1000.	
52 Cr	151.55	30.31	ppb	0.73	2000.	
53 Cr	173.75	34.75	ppb	0.17	#VALUE!	
55 Mn	2,605.5	521.1	ppb	0.48	2000.	
56 Fe	169,000.	33,800.	ppb	0.74	#VALUE!	
57 Fe	165,450.	33,090.	ppb	0.22	100000.	
59 Co	57.9	11.58	ppb	0.25	1000.	
60 Ni	126.6	25.32	ppb	1.18	1000.	
63 Cu	126.4	25.28	ppb	0.70	#VALUE!	
65 Cu	125.85	25.17	ppb	1.70	2000.	
66 Zn	434.9	86.98	ppb	0.35	2000.	
68 Zn	465.8	93.16	ppb	0.67	#VALUE!	
75 As	87.95	17.59	ppb	1.05	1000.	
82 Se	5.065	1.013	ppb	23.13	1000.	
88 Sr	508.5	101.7	ppb	1.35	2000.	
98 Mo	8.1	1.62	ppb	1.94	1000.	
107 Ag	0.716	0.1432	ppb	2.22	100.	
109 Ag	0.5265	0.1053	ppb	7.70	#VALUE!	
111 Cd	1.97	0.394	ppb	4.88	#VALUE!	
114 Cd	-0.3695	-0.0739	ppb	31.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.25	10.25	ppb	1.45	1000.	
120 Sn	51.4	10.28	ppb	1.40	#VALUE!	
121 Sb	1.864	0.3728	ppb	4.90	#VALUE!	
123 Sb	1.8765	0.3753	ppb	1.65	1000.	
135 Ba	1,415.	283.	ppb	1.21	2000.	
137 Ba	1,411.	282.2	ppb	0.66	#VALUE!	
182 W	0.852	0.1704	ppb	8.96	1000.	
203 Tl	3.157	0.6314	ppb	1.84	1000.	
205 Tl	3.217	0.6434	ppb	0.86	#VALUE!	
208 Pb	129.95	25.99	ppb	0.88	2000.	
232 Th	85.95	17.19	ppb	1.29	1000.	
238 U	11.485	2.297	ppb	1.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3439196.30	1.05	3440039.00	100.0	69.5 - 120	
45 Sc	3359273.80	0.84	3153680.00	106.5	69.5 - 120	
89 Y	4762933.00	0.34	4049389.00	117.6	69.5 - 120	
159 Tb	4710218.00	0.94	4277856.00	110.1	69.5 - 120	
209 Bi	2506283.80	0.98	2443113.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000183

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 20 2018 06:58 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-007
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.075	1.015	ppb	0.69	100.	
11 B	57.7	11.54	ppb	2.32	1000.	
23 Na	3,474.5	694.9	ppb	0.75	200000.	
25 Mg	22,190.	4,438.	ppb	0.38	200000.	
27 Al	88,050.	17,610.	ppb	1.46	200000.	
28 Si	3,406.	681.2	ppb	4.33	#VALUE!	
29 Si	1,487.	297.4	ppb	49.09	10000.	
39 K	29,325.	5,865.	ppb	0.54	200000.	
43 Ca	18,755.	3,751.	ppb	1.39	#VALUE!	
44 Ca	18,935.	3,787.	ppb	1.20	200000.	
51 V	184.	36.8	ppb	0.58	1000.	
52 Cr	91.35	18.27	ppb	0.56	2000.	
53 Cr	115.85	23.17	ppb	0.63	#VALUE!	
55 Mn	2,814.	562.8	ppb	1.09	2000.	
56 Fe	77,500.	15,500.	ppb	0.95	#VALUE!	
57 Fe	76,050.	15,210.	ppb	0.77	100000.	
59 Co	51.4	10.28	ppb	0.44	1000.	
60 Ni	69.5	13.9	ppb	0.54	1000.	
63 Cu	73.8	14.76	ppb	1.23	#VALUE!	
65 Cu	73.95	14.79	ppb	0.78	2000.	
66 Zn	264.05	52.81	ppb	0.20	2000.	
68 Zn	299.55	59.91	ppb	1.30	#VALUE!	
75 As	23.175	4.635	ppb	6.63	1000.	
82 Se	5.56	1.112	ppb	13.57	1000.	
88 Sr	273.4	54.68	ppb	1.17	2000.	
98 Mo	10.6	2.12	ppb	0.91	1000.	
107 Ag	0.5235	0.1047	ppb	7.33	100.	
109 Ag	0.4756	0.0951	ppb	3.46	#VALUE!	
111 Cd	2.4815	0.4963	ppb	7.37	#VALUE!	
114 Cd	1.751	0.3502	ppb	1.99	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.85	9.17	ppb	0.35	1000.	
120 Sn	45.845	9.169	ppb	1.00	#VALUE!	
121 Sb	1.175	0.235	ppb	5.14	#VALUE!	
123 Sb	1.1985	0.2397	ppb	2.98	1000.	
135 Ba	1,275.	255.	ppb	0.43	2000.	
137 Ba	1,274.5	254.9	ppb	0.69	#VALUE!	
182 W	0.686	0.1372	ppb	11.27	1000.	
203 Tl	1.9815	0.3963	ppb	2.29	1000.	
205 Tl	2.1175	0.4235	ppb	1.89	#VALUE!	
208 Pb	127.5	25.5	ppb	0.25	2000.	
232 Th	78.35	15.67	ppb	0.93	1000.	
238 U	14.81	2.962	ppb	0.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3424235.30	0.98	3440039.00	99.5	69.5 - 120	
45 Sc	3279925.80	0.44	3153680.00	104.0	69.5 - 120	
89 Y	4710840.50	0.44	4049389.00	116.3	69.5 - 120	
159 Tb	4710868.50	0.37	4277856.00	110.1	69.5 - 120	
209 Bi	2549624.00	0.58	2443113.00	104.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000184

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 20 2018 07:02 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0006	ppb	357.43	100.	
11 B	0.5989	0.5989	ppb	11.85	1000.	
23 Na	17.88	17.88	ppb	3.50	200000.	
25 Mg	0.9888	0.9888	ppb	0.42	200000.	
27 Al	11.58	11.58	ppb	3.14	200000.	
28 Si	88.56	88.56	ppb	91.08	#VALUE!	
29 Si	-81.89	-81.89	ppb	1.33	10000.	
39 K	-4.708	-4.708	ppb	38.42	200000.	
43 Ca	-0.6559	-0.6559	ppb	443.97	#VALUE!	
44 Ca	2.931	2.931	ppb	43.43	200000.	
51 V	-0.0078	-0.0078	ppb	189.38	1000.	
52 Cr	0.0133	0.0133	ppb	67.35	2000.	
53 Cr	-0.4388	-0.4388	ppb	18.52	#VALUE!	
55 Mn	0.0275	0.0275	ppb	32.21	2000.	
56 Fe	-2.711	-2.711	ppb	42.60	#VALUE!	
57 Fe	-2.826	-2.826	ppb	21.30	100000.	
59 Co	0.0054	0.0054	ppb	50.53	1000.	
60 Ni	0.0028	0.0028	ppb	274.23	1000.	
63 Cu	0.0035	0.0035	ppb	25.11	#VALUE!	
65 Cu	0.0051	0.0051	ppb	105.34	2000.	
66 Zn	0.046	0.046	ppb	40.37	2000.	
68 Zn	0.0301	0.0301	ppb	588.92	#VALUE!	
75 As	-0.0823	-0.0823	ppb	120.59	1000.	
82 Se	-0.043	-0.043	ppb	381.92	1000.	
88 Sr	0.0055	0.0055	ppb	62.64	2000.	
98 Mo	0.0051	0.0051	ppb	103.46	1000.	
107 Ag	0.0009	0.0009	ppb	258.13	100.	
109 Ag	-0.0011	-0.0011	ppb	64.30	#VALUE!	
111 Cd	-0.1447	-0.1447	ppb	17.73	#VALUE!	
114 Cd	-0.0027	-0.0027	ppb	107.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0157	0.0157	ppb	109.49	1000.	
120 Sn	0.0187	0.0187	ppb	47.22	#VALUE!	
121 Sb	0.0013	0.0013	ppb	279.06	#VALUE!	
123 Sb	0.0034	0.0034	ppb	100.59	1000.	
135 Ba	0.0144	0.0144	ppb	49.28	2000.	
137 Ba	0.0118	0.0118	ppb	62.99	#VALUE!	
182 W	-0.0015	-0.0015	ppb	201.37	1000.	
203 Tl	-0.0017	-0.0017	ppb	321.42	1000.	
205 Tl	0.003	0.003	ppb	102.94	#VALUE!	
208 Pb	0.0039	0.0039	ppb	37.11	2000.	
232 Th	0.005	0.005	ppb	19.37	1000.	
238 U	0.0014	0.0014	ppb	29.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3140989.30	1.13	3440039.00	91.3	69.5 - 120	
45 Sc	3007982.50	0.39	3153680.00	95.4	69.5 - 120	
89 Y	3938443.80	0.85	4049389.00	97.3	69.5 - 120	
159 Tb	4219080.50	0.37	4277856.00	98.6	69.5 - 120	
209 Bi	2365206.50	0.28	2443113.00	96.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000185

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\040_CCV.D\040_CCV.D#
Date Acquired: Mar 20 2018 07:06 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.82	ppb	2.57	25	99.28	
11 B	24.36	ppb	4.13	25	97.44	
23 Na	4,849.	ppb	2.20	5,000	96.98	
25 Mg	4,897.	ppb	0.62	5,000	97.94	
27 Al	483.9	ppb	1.34	500	96.78	
28 Si	404.4	ppb	30.14	500	80.88	
29 Si	83.7	ppb	66.63	500	16.74	Fail
39 K	4,910.	ppb	1.75	5,000	98.2	
43 Ca	4,931.	ppb	2.02	5,000	98.62	
44 Ca	5,097.	ppb	1.29	5,000	101.94	
51 V	24.98	ppb	2.97	25	99.92	
52 Cr	24.8	ppb	2.96	25	99.2	
53 Cr	24.31	ppb	4.50	25	97.24	
55 Mn	24.63	ppb	3.23	25	98.52	
56 Fe	4,961.	ppb	1.60	5,000	99.22	
57 Fe	5,095.	ppb	2.40	5,000	101.9	
59 Co	25.	ppb	2.14	25	100	
60 Ni	25.25	ppb	3.49	25	101	
63 Cu	25.17	ppb	3.88	25	100.68	
65 Cu	24.76	ppb	3.41	25	99.04	
66 Zn	24.81	ppb	2.85	25	99.24	
68 Zn	25.37	ppb	3.15	25	101.48	
75 As	24.87	ppb	1.87	25	99.48	
82 Se	25.11	ppb	1.76	25	100.44	
88 Sr	24.94	ppb	1.67	25	99.76	
98 Mo	25.11	ppb	1.50	25	100.44	
107 Ag	25.27	ppb	3.27	25	101.08	
109 Ag	25.21	ppb	2.32	25	100.84	
111 Cd	24.79	ppb	3.73	25	99.16	
114 Cd	25.11	ppb	2.52	25	100.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.12	ppb	2.59	25	100.48	
120 Sn	24.98	ppb	2.10	25	99.92	
121 Sb	24.96	ppb	1.79	25	99.84	
123 Sb	25.19	ppb	1.96	25	100.76	
135 Ba	25.8	ppb	2.18	25	103.2	
137 Ba	25.	ppb	1.98	25	100	
182 W	24.3	ppb	0.35	25	97.2	
203 Tl	24.7	ppb	1.55	25	98.8	
205 Tl	24.9	ppb	0.24	25	99.6	
208 Pb	24.71	ppb	0.62	25	98.84	
232 Th	24.74	ppb	0.99	25	98.96	
238 U	25.	ppb	0.71	25	100	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3541578.30	4.70	3440039.00	103.0	80 - 120.4	
45 Sc	3374350.50	3.74	3153680.00	107.0	80 - 120.4	
89 Y	4368642.50	1.82	4049389.00	107.9	80 - 120.4	
159 Tb	4644677.50	3.60	4277856.00	108.6	80 - 120.4	
209 Bi	2575018.50	3.78	2443113.00	105.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000186

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\041_CCB.D\041_CCB.D#
Date Acquired: Mar 20 2018 07:10 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0013	ppb	28.45	1.00	
11 B	0.6046	ppb	10.70	1.00	
23 Na	0.4878	ppb	48.18	1.00	
25 Mg	0.2615	ppb	23.63	1.00	
27 Al	0.211	ppb	22.10	1.00	
28 Si	143.5	ppb	37.32	1.00	
29 Si	-19.66	ppb	169.18	1.00	
39 K	-1.611	ppb	19.63	1.00	
43 Ca	-0.6182	ppb	148.51	1.00	
44 Ca	1.92	ppb	167.03	1.00	
51 V	-0.0261	ppb	370.23	1.00	
52 Cr	-0.0274	ppb	59.99	1.00	
53 Cr	-0.2598	ppb	101.85	1.00	
55 Mn	0.0071	ppb	105.40	1.00	
56 Fe	0.8879	ppb	336.75	1.00	
57 Fe	-0.5282	ppb	295.72	1.00	
59 Co	0.0062	ppb	17.41	1.00	
60 Ni	0.0012	ppb	541.92	1.00	
63 Cu	0.0081	ppb	50.87	1.00	
65 Cu	0.0032	ppb	442.56	1.00	
66 Zn	-0.0243	ppb	191.35	1.00	
68 Zn	0.0137	ppb	1244.00	1.00	
75 As	-0.0515	ppb	187.64	1.00	
82 Se	0.2434	ppb	157.23	1.00	
88 Sr	-0.0002	ppb	983.63	1.00	
98 Mo	0.009	ppb	33.52	1.00	
107 Ag	0.0002	ppb	1220.20	1.00	
109 Ag	-0.0015	ppb	22.23	1.00	
111 Cd	-0.117	ppb	32.97	1.00	
114 Cd	0.0002	ppb	752.36	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0225	ppb	33.39	1.00	
120 Sn	0.0372	ppb	16.14	1.00	
121 Sb	0.003	ppb	206.09	1.00	
123 Sb	0.0046	ppb	109.88	1.00	
135 Ba	0.0115	ppb	114.47	1.00	
137 Ba	0.0021	ppb	709.24	1.00	
182 W	0.0132	ppb	45.41	1.00	
203 Tl	0.0064	ppb	88.83	1.00	
205 Tl	0.0042	ppb	45.38	1.00	
208 Pb	-0.002	ppb	160.92	1.00	
232 Th	0.0117	ppb	20.84	1.00	
238 U	0.0028	ppb	10.70	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3064106.50	1.90	3440039.00	89.1	79.5 - 120	
45 Sc	2956593.80	0.56	3153680.00	93.8	79.5 - 120	
89 Y	3883028.80	1.45	4049389.00	95.9	79.5 - 120	
159 Tb	4113470.80	0.19	4277856.00	96.2	79.5 - 120	
209 Bi	2323465.50	0.39	2443113.00	95.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000187

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\042SMPL.D\042SMPL.D#
Date Acquired: Mar 20 2018 07:14 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-008
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.79	1.158	ppb	4.23	100.	
11 B	57.3	11.46	ppb	6.51	1000.	
23 Na	1,886.5	377.3	ppb	0.63	200000.	
25 Mg	23,225.	4,645.	ppb	0.34	200000.	
27 Al	98,700.	19,740.	ppb	1.07	200000.	
28 Si	3,520.5	704.1	ppb	10.97	#VALUE!	
29 Si	2,415.	483.	ppb	41.12	10000.	
39 K	29,390.	5,878.	ppb	1.06	200000.	
43 Ca	16,965.	3,393.	ppb	0.72	#VALUE!	
44 Ca	16,985.	3,397.	ppb	0.99	200000.	
51 V	192.15	38.43	ppb	1.24	1000.	
52 Cr	100.1	20.02	ppb	1.71	2000.	
53 Cr	124.25	24.85	ppb	2.64	#VALUE!	
55 Mn	3,290.	658.	ppb	1.57	2000.	
56 Fe	83,950.	16,790.	ppb	1.55	#VALUE!	
57 Fe	82,450.	16,490.	ppb	1.96	100000.	
59 Co	51.65	10.33	ppb	1.35	1000.	
60 Ni	74.15	14.83	ppb	1.68	1000.	
63 Cu	73.85	14.77	ppb	2.25	#VALUE!	
65 Cu	74.4	14.88	ppb	0.93	2000.	
66 Zn	279.55	55.91	ppb	2.72	2000.	
68 Zn	321.55	64.31	ppb	2.39	#VALUE!	
75 As	23.92	4.784	ppb	7.64	1000.	
82 Se	7.025	1.405	ppb	7.20	1000.	
88 Sr	282.9	56.58	ppb	1.28	2000.	
98 Mo	16.56	3.312	ppb	4.33	1000.	
107 Ag	0.5465	0.1093	ppb	1.36	100.	
109 Ag	0.4976	0.0995	ppb	8.84	#VALUE!	
111 Cd	2.402	0.4804	ppb	5.70	#VALUE!	
114 Cd	1.611	0.3222	ppb	3.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.34	9.268	ppb	0.66	1000.	
120 Sn	45.75	9.15	ppb	1.08	#VALUE!	
121 Sb	1.054	0.2108	ppb	5.80	#VALUE!	
123 Sb	1.119	0.2238	ppb	0.25	1000.	
135 Ba	1,468.	293.6	ppb	0.76	2000.	
137 Ba	1,455.	291.	ppb	1.11	#VALUE!	
182 W	0.762	0.1524	ppb	12.76	1000.	
203 Tl	2.284	0.4568	ppb	4.45	1000.	
205 Tl	2.2575	0.4515	ppb	3.82	#VALUE!	
208 Pb	124.35	24.87	ppb	1.04	2000.	
232 Th	81.05	16.21	ppb	0.91	1000.	
238 U	17.515	3.503	ppb	1.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3440260.30	3.06	3440039.00	100.0	69.5 - 120	
45 Sc	3300821.50	0.31	3153680.00	104.7	69.5 - 120	
89 Y	4720706.00	1.75	4049389.00	116.6	69.5 - 120	
159 Tb	4628537.00	0.46	4277856.00	108.2	69.5 - 120	
209 Bi	2526848.30	1.06	2443113.00	103.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000188

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\043SMPL.D\043SMPL.D#
Date Acquired: Mar 20 2018 07:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.619	0.9238	ppb	3.37	100.	
11 B	41.93	8.386	ppb	3.88	1000.	
23 Na	842.	168.4	ppb	1.68	200000.	
25 Mg	20,400.	4,080.	ppb	1.57	200000.	
27 Al	79,950.	15,990.	ppb	0.88	200000.	
28 Si	2,692.5	538.5	ppb	14.27	#VALUE!	
29 Si	680.	136.	ppb	14.35	10000.	
39 K	28,145.	5,629.	ppb	1.13	200000.	
43 Ca	17,975.	3,595.	ppb	2.85	#VALUE!	
44 Ca	18,105.	3,621.	ppb	0.98	200000.	
51 V	154.9	30.98	ppb	1.25	1000.	
52 Cr	79.65	15.93	ppb	1.66	2000.	
53 Cr	99.95	19.99	ppb	2.18	#VALUE!	
55 Mn	2,422.5	484.5	ppb	1.01	2000.	
56 Fe	73,500.	14,700.	ppb	1.49	#VALUE!	
57 Fe	71,800.	14,360.	ppb	0.71	100000.	
59 Co	42.77	8.554	ppb	1.29	1000.	
60 Ni	60.95	12.19	ppb	1.80	1000.	
63 Cu	61.7	12.34	ppb	0.99	#VALUE!	
65 Cu	62.15	12.43	ppb	2.19	2000.	
66 Zn	234.55	46.91	ppb	0.34	2000.	
68 Zn	272.35	54.47	ppb	2.37	#VALUE!	
75 As	21.25	4.25	ppb	3.68	1000.	
82 Se	5.5	1.1	ppb	15.82	1000.	
88 Sr	233.35	46.67	ppb	1.24	2000.	
98 Mo	7.085	1.417	ppb	1.69	1000.	
107 Ag	0.4272	0.0854	ppb	3.35	100.	
109 Ag	0.3536	0.0707	ppb	14.62	#VALUE!	
111 Cd	1.963	0.3926	ppb	13.26	#VALUE!	
114 Cd	1.4235	0.2847	ppb	13.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	44.94	8.988	ppb	1.00	1000.	
120 Sn	44.12	8.824	ppb	0.86	#VALUE!	
121 Sb	0.9825	0.1965	ppb	14.53	#VALUE!	
123 Sb	0.9515	0.1903	ppb	11.25	1000.	
135 Ba	1,212.5	242.5	ppb	1.05	2000.	
137 Ba	1,196.	239.2	ppb	1.62	#VALUE!	
182 W	0.659	0.1318	ppb	3.30	1000.	
203 Tl	1.708	0.3416	ppb	2.37	1000.	
205 Tl	1.8485	0.3697	ppb	4.90	#VALUE!	
208 Pb	104.6	20.92	ppb	1.85	2000.	
232 Th	64.9	12.98	ppb	1.77	1000.	
238 U	11.18	2.236	ppb	1.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3475084.80	0.90	3440039.00	101.0	69.5 - 120	
45 Sc	3292175.80	0.85	3153680.00	104.4	69.5 - 120	
89 Y	4656733.50	0.94	4049389.00	115.0	69.5 - 120	
159 Tb	4665159.00	1.34	4277856.00	109.1	69.5 - 120	
209 Bi	2554286.50	1.42	2443113.00	104.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000189

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\044SMPL.D\044SMPL.D#
Date Acquired: Mar 20 2018 07:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009L
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.555	0.1822	ppb	3.00	100.	
11 B	47.825	1.913	ppb	5.69	1000.	
23 Na	782.25	31.29	ppb	0.67	200000.	
25 Mg	20,470.	818.8	ppb	0.68	200000.	
27 Al	82,275.	3,291.	ppb	0.64	200000.	
28 Si	1,297.25	51.89	ppb	127.06	#VALUE!	
29 Si	-2,800.	-112.	ppb	17.20	10000.	LOW
39 K	28,500.	1,140.	ppb	0.14	200000.	
43 Ca	17,840.	713.6	ppb	2.05	#VALUE!	
44 Ca	18,242.5	729.7	ppb	0.74	200000.	
51 V	167.25	6.69	ppb	1.59	1000.	
52 Cr	85.025	3.401	ppb	1.98	2000.	
53 Cr	93.025	3.721	ppb	4.18	#VALUE!	
55 Mn	2,740.	109.6	ppb	1.32	2000.	
56 Fe	79,700.	3,188.	ppb	0.49	#VALUE!	
57 Fe	81,300.	3,252.	ppb	0.78	100000.	
59 Co	45.85	1.834	ppb	2.28	1000.	
60 Ni	65.4	2.616	ppb	1.98	1000.	
63 Cu	68.85	2.754	ppb	2.49	#VALUE!	
65 Cu	69.725	2.789	ppb	2.71	2000.	
66 Zn	265.75	10.63	ppb	1.78	2000.	
68 Zn	298.75	11.95	ppb	3.49	#VALUE!	
75 As	22.21	0.8884	ppb	7.32	1000.	
82 Se	12.425	0.497	ppb	42.41	1000.	
88 Sr	250.	10.	ppb	0.31	2000.	
98 Mo	7.7825	0.3113	ppb	2.19	1000.	
107 Ag	0.417	0.0167	ppb	34.39	100.	
109 Ag	0.4765	0.0191	ppb	20.96	#VALUE!	
111 Cd	-0.9585	-0.0383	ppb	57.69	#VALUE!	
114 Cd	1.793	0.0717	ppb	41.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.275	1.851	ppb	2.67	1000.	
120 Sn	45.425	1.817	ppb	1.45	#VALUE!	
121 Sb	1.0693	0.0428	ppb	13.96	#VALUE!	
123 Sb	1.0545	0.0422	ppb	15.88	1000.	
135 Ba	1,212.25	48.49	ppb	1.00	2000.	
137 Ba	1,230.	49.2	ppb	2.05	#VALUE!	
182 W	0.5493	0.022	ppb	25.35	1000.	
203 Tl	1.9518	0.0781	ppb	14.44	1000.	
205 Tl	1.836	0.0734	ppb	10.06	#VALUE!	
208 Pb	106.475	4.259	ppb	0.95	2000.	
232 Th	64.1	2.564	ppb	0.37	1000.	
238 U	11.225	0.449	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3361653.00	1.63	3440039.00	97.7	69.5 - 120	
45 Sc	3208365.50	0.21	3153680.00	101.7	69.5 - 120	
89 Y	4253051.00	0.57	4049389.00	105.0	69.5 - 120	
159 Tb	4496140.00	0.55	4277856.00	105.1	69.5 - 120	
209 Bi	2505776.30	0.71	2443113.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000190

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\045SMPL.D\045SMPL.D#
Date Acquired: Mar 20 2018 07:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009A
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.96	3.192	ppb	0.76	100.	
11 B	268.65	53.73	ppb	2.13	1000.	
23 Na	12,185.	2,437.	ppb	0.72	200000.	
25 Mg	20,620.	4,124.	ppb	1.36	200000.	
27 Al	78,100.	15,620.	ppb	1.28	200000.	
28 Si	9,250.	1,850.	ppb	3.54	#VALUE!	
29 Si	6,660.	1,332.	ppb	3.18	10000.	
39 K	38,820.	7,764.	ppb	0.27	200000.	
43 Ca	18,505.	3,701.	ppb	2.46	#VALUE!	
44 Ca	18,500.	3,700.	ppb	0.99	200000.	
51 V	202.15	40.43	ppb	0.99	1000.	
52 Cr	129.6	25.92	ppb	1.25	2000.	
53 Cr	152.4	30.48	ppb	2.72	#VALUE!	
55 Mn	2,355.	471.	ppb	1.57	2000.	
56 Fe	72,050.	14,410.	ppb	0.59	#VALUE!	
57 Fe	70,700.	14,140.	ppb	0.55	100000.	
59 Co	51.65	10.33	ppb	1.09	1000.	
60 Ni	80.95	16.19	ppb	3.20	1000.	
63 Cu	92.4	18.48	ppb	1.32	#VALUE!	
65 Cu	92.15	18.43	ppb	1.58	2000.	
66 Zn	332.4	66.48	ppb	2.38	2000.	
68 Zn	365.4	73.08	ppb	2.25	#VALUE!	
75 As	74.3	14.86	ppb	1.81	1000.	
82 Se	58.25	11.65	ppb	3.41	1000.	
88 Sr	277.25	55.45	ppb	1.72	2000.	
98 Mo	61.5	12.3	ppb	1.99	1000.	
107 Ag	11.36	2.272	ppb	0.68	100.	
109 Ag	11.45	2.29	ppb	1.02	#VALUE!	
111 Cd	11.995	2.399	ppb	3.59	#VALUE!	
114 Cd	11.495	2.299	ppb	2.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	101.35	20.27	ppb	2.08	1000.	
120 Sn	100.95	20.19	ppb	1.28	#VALUE!	
121 Sb	11.7	2.34	ppb	2.74	#VALUE!	
123 Sb	11.71	2.342	ppb	2.57	1000.	
135 Ba	1,194.	238.8	ppb	0.69	2000.	
137 Ba	1,186.	237.2	ppb	0.57	#VALUE!	
182 W	57.15	11.43	ppb	1.62	1000.	
203 Tl	12.965	2.593	ppb	0.43	1000.	
205 Tl	12.83	2.566	ppb	1.44	#VALUE!	
208 Pb	112.85	22.57	ppb	0.25	2000.	
232 Th	74.85	14.97	ppb	0.82	1000.	
238 U	23.2	4.64	ppb	0.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3475669.00	1.20	3440039.00	101.0	69.5 - 120	
45 Sc	3308301.50	0.62	3153680.00	104.9	69.5 - 120	
89 Y	4660490.00	1.25	4049389.00	115.1	69.5 - 120	
159 Tb	4632269.00	0.68	4277856.00	108.3	69.5 - 120	
209 Bi	2525568.00	0.50	2443113.00	103.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000191

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\046SMPL.D\046SMPL.D#
Date Acquired: Mar 20 2018 07:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009S
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.65	10.73	ppb	0.66	100.	
11 B	497.9	99.58	ppb	1.96	1000.	
23 Na	8,215.	1,643.	ppb	1.26	200000.	
25 Mg	28,160.	5,632.	ppb	1.98	200000.	
27 Al	107,100.	21,420.	ppb	1.28	200000.	
28 Si	3,690.5	738.1	ppb	15.65	#VALUE!	
29 Si	2,167.5	433.5	ppb	50.38	10000.	
39 K	42,390.	8,478.	ppb	0.47	200000.	
43 Ca	23,575.	4,715.	ppb	1.36	#VALUE!	
44 Ca	23,590.	4,718.	ppb	0.65	200000.	
51 V	629.5	125.9	ppb	0.79	1000.	
52 Cr	271.85	54.37	ppb	1.55	2000.	
53 Cr	295.4	59.08	ppb	1.91	#VALUE!	
55 Mn	3,037.5	607.5	ppb	0.49	2000.	
56 Fe	83,850.	16,770.	ppb	0.95	#VALUE!	
57 Fe	82,200.	16,440.	ppb	0.98	100000.	
59 Co	496.6	99.32	ppb	0.83	1000.	
60 Ni	517.	103.4	ppb	0.94	1000.	
63 Cu	305.65	61.13	ppb	0.86	#VALUE!	
65 Cu	305.9	61.18	ppb	1.74	2000.	
66 Zn	689.	137.8	ppb	1.02	2000.	
68 Zn	785.5	157.1	ppb	1.66	#VALUE!	
75 As	109.5	21.9	ppb	1.80	1000.	
82 Se	88.25	17.65	ppb	2.48	1000.	
88 Sr	729.5	145.9	ppb	0.88	2000.	
98 Mo	91.85	18.37	ppb	0.83	1000.	
107 Ag	45.64	9.128	ppb	1.10	100.	
109 Ag	45.565	9.113	ppb	1.85	#VALUE!	
111 Cd	228.4	45.68	ppb	0.95	#VALUE!	
114 Cd	227.35	45.47	ppb	1.54	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	508.5	101.7	ppb	0.29	1000.	
120 Sn	507.5	101.5	ppb	1.47	#VALUE!	
121 Sb	23.855	4.771	ppb	0.35	#VALUE!	
123 Sb	24.145	4.829	ppb	1.45	1000.	
135 Ba	3,382.	676.4	ppb	0.39	2000.	
137 Ba	3,403.	680.6	ppb	0.15	#VALUE!	
182 W	48.495	9.699	ppb	1.22	1000.	
203 Tl	100.35	20.07	ppb	0.38	1000.	
205 Tl	100.9	20.18	ppb	0.60	#VALUE!	
208 Pb	211.9	42.38	ppb	0.42	2000.	
232 Th	162.4	32.48	ppb	0.50	1000.	
238 U	114.45	22.89	ppb	0.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3497278.30	0.72	3440039.00	101.7	69.5 - 120	
45 Sc	3330935.50	0.28	3153680.00	105.6	69.5 - 120	
89 Y	4714166.50	0.83	4049389.00	116.4	69.5 - 120	
159 Tb	4686346.00	0.37	4277856.00	109.5	69.5 - 120	
209 Bi	2544921.50	0.51	2443113.00	104.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000192

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\047SMPL.D\047SMPL.D#
Date Acquired: Mar 20 2018 07:35 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-009P
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.1	10.62	ppb	2.01	100.	
11 B	498.45	99.69	ppb	1.25	1000.	
23 Na	8,380.	1,676.	ppb	2.49	200000.	
25 Mg	28,825.	5,765.	ppb	1.79	200000.	
27 Al	109,000.	21,800.	ppb	1.29	200000.	
28 Si	3,355.	671.	ppb	5.53	#VALUE!	
29 Si	2,867.	573.4	ppb	4.33	10000.	
39 K	43,035.	8,607.	ppb	0.86	200000.	
43 Ca	23,480.	4,696.	ppb	2.30	#VALUE!	
44 Ca	23,390.	4,678.	ppb	0.46	200000.	
51 V	643.	128.6	ppb	0.28	1000.	
52 Cr	274.8	54.96	ppb	1.23	2000.	
53 Cr	300.8	60.16	ppb	0.75	#VALUE!	
55 Mn	3,077.	615.4	ppb	1.18	2000.	
56 Fe	86,000.	17,200.	ppb	0.70	#VALUE!	
57 Fe	84,200.	16,840.	ppb	1.57	100000.	
59 Co	501.	100.2	ppb	0.79	1000.	
60 Ni	511.5	102.3	ppb	1.37	1000.	
63 Cu	287.55	57.51	ppb	1.57	#VALUE!	
65 Cu	288.35	57.67	ppb	1.81	2000.	
66 Zn	693.5	138.7	ppb	1.31	2000.	
68 Zn	793.5	158.7	ppb	2.57	#VALUE!	
75 As	109.4	21.88	ppb	1.34	1000.	
82 Se	88.15	17.63	ppb	3.21	1000.	
88 Sr	730.	146.	ppb	1.15	2000.	
98 Mo	92.65	18.53	ppb	1.08	1000.	
107 Ag	46.11	9.222	ppb	1.84	100.	
109 Ag	45.235	9.047	ppb	1.77	#VALUE!	
111 Cd	227.1	45.42	ppb	1.33	#VALUE!	
114 Cd	226.35	45.27	ppb	1.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	511.5	102.3	ppb	0.52	1000.	
120 Sn	508.	101.6	ppb	1.66	#VALUE!	
121 Sb	25.72	5.144	ppb	3.63	#VALUE!	
123 Sb	26.21	5.242	ppb	3.37	1000.	
135 Ba	3,405.5	681.1	ppb	1.33	2000.	
137 Ba	3,428.5	685.7	ppb	1.00	#VALUE!	
182 W	49.625	9.925	ppb	1.86	1000.	
203 Tl	101.1	20.22	ppb	1.59	1000.	
205 Tl	100.8	20.16	ppb	2.59	#VALUE!	
208 Pb	215.55	43.11	ppb	1.85	2000.	
232 Th	164.6	32.92	ppb	2.16	1000.	
238 U	114.95	22.99	ppb	2.07	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3684749.00	0.84	3440039.00	107.1	69.5 - 120	
45 Sc	3407614.50	0.66	3153680.00	108.1	69.5 - 120	
89 Y	4811529.50	0.38	4049389.00	118.8	69.5 - 120	
159 Tb	4754731.50	0.80	4277856.00	111.1	69.5 - 120	
209 Bi	2572850.80	1.41	2443113.00	105.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000193

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\048SMPL.D\048SMPL.D#
Date Acquired: Mar 20 2018 07:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-010
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.575	1.115	ppb	2.08	100.	
11 B	60.55	12.11	ppb	2.06	1000.	
23 Na	1,054.5	210.9	ppb	0.79	200000.	
25 Mg	22,660.	4,532.	ppb	0.85	200000.	
27 Al	102,000.	20,400.	ppb	0.71	200000.	
28 Si	2,472.	494.4	ppb	15.06	#VALUE!	
29 Si	2,233.5	446.7	ppb	8.97	10000.	
39 K	28,285.	5,657.	ppb	0.35	200000.	
43 Ca	18,180.	3,636.	ppb	1.42	#VALUE!	
44 Ca	18,245.	3,649.	ppb	0.42	200000.	
51 V	183.45	36.69	ppb	2.51	1000.	
52 Cr	99.55	19.91	ppb	2.08	2000.	
53 Cr	126.9	25.38	ppb	1.40	#VALUE!	
55 Mn	2,522.5	504.5	ppb	1.55	2000.	
56 Fe	88,900.	17,780.	ppb	1.86	#VALUE!	
57 Fe	87,950.	17,590.	ppb	2.44	100000.	
59 Co	45.76	9.152	ppb	2.29	1000.	
60 Ni	70.65	14.13	ppb	0.21	1000.	
63 Cu	73.5	14.7	ppb	3.22	#VALUE!	
65 Cu	74.65	14.93	ppb	1.35	2000.	
66 Zn	323.2	64.64	ppb	2.37	2000.	
68 Zn	356.	71.2	ppb	2.79	#VALUE!	
75 As	23.205	4.641	ppb	4.78	1000.	
82 Se	5.57	1.114	ppb	26.10	1000.	
88 Sr	243.65	48.73	ppb	0.59	2000.	
98 Mo	14.055	2.811	ppb	1.79	1000.	
107 Ag	0.513	0.1026	ppb	8.53	100.	
109 Ag	0.492	0.0984	ppb	8.06	#VALUE!	
111 Cd	2.0875	0.4175	ppb	14.68	#VALUE!	
114 Cd	1.351	0.2702	ppb	1.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.975	9.195	ppb	2.24	1000.	
120 Sn	45.38	9.076	ppb	1.99	#VALUE!	
121 Sb	0.994	0.1988	ppb	3.71	#VALUE!	
123 Sb	1.0865	0.2173	ppb	5.57	1000.	
135 Ba	1,287.5	257.5	ppb	0.92	2000.	
137 Ba	1,275.	255.	ppb	1.98	#VALUE!	
182 W	0.629	0.1258	ppb	7.50	1000.	
203 Tl	2.108	0.4216	ppb	6.21	1000.	
205 Tl	2.1185	0.4237	ppb	2.02	#VALUE!	
208 Pb	124.45	24.89	ppb	1.39	2000.	
232 Th	68.55	13.71	ppb	1.57	1000.	
238 U	13.015	2.603	ppb	0.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3637419.00	1.02	3440039.00	105.7	69.5 - 120	
45 Sc	3452621.80	0.49	3153680.00	109.5	69.5 - 120	
89 Y	4787888.00	1.96	4049389.00	118.2	69.5 - 120	
159 Tb	4773418.50	1.40	4277856.00	111.6	69.5 - 120	
209 Bi	2609734.30	1.43	2443113.00	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000194

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\049SMPL.D\049SMPL.D#
Date Acquired: Mar 20 2018 07:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-011
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.3225	0.8645	ppb	3.46	100.	
11 B	54.55	10.91	ppb	0.97	1000.	
23 Na	1,615.	323.	ppb	0.91	200000.	
25 Mg	19,660.	3,932.	ppb	1.29	200000.	
27 Al	74,350.	14,870.	ppb	2.33	200000.	
28 Si	2,786.5	557.3	ppb	20.74	#VALUE!	
29 Si	2,104.5	420.9	ppb	56.88	10000.	
39 K	28,525.	5,705.	ppb	2.33	200000.	
43 Ca	16,585.	3,317.	ppb	1.63	#VALUE!	
44 Ca	16,805.	3,361.	ppb	1.29	200000.	
51 V	158.65	31.73	ppb	2.04	1000.	
52 Cr	78.9	15.78	ppb	1.78	2000.	
53 Cr	105.9	21.18	ppb	2.52	#VALUE!	
55 Mn	2,193.	438.6	ppb	1.51	2000.	
56 Fe	67,750.	13,550.	ppb	1.78	#VALUE!	
57 Fe	67,000.	13,400.	ppb	2.02	100000.	
59 Co	39.44	7.888	ppb	2.96	1000.	
60 Ni	57.95	11.59	ppb	1.56	1000.	
63 Cu	60.7	12.14	ppb	2.37	#VALUE!	
65 Cu	61.5	12.3	ppb	1.74	2000.	
66 Zn	211.35	42.27	ppb	1.65	2000.	
68 Zn	240.7	48.14	ppb	2.63	#VALUE!	
75 As	20.915	4.183	ppb	3.27	1000.	
82 Se	5.12	1.024	ppb	19.84	1000.	
88 Sr	227.65	45.53	ppb	1.67	2000.	
98 Mo	12.46	2.492	ppb	0.98	1000.	
107 Ag	0.4191	0.0838	ppb	7.85	100.	
109 Ag	0.3985	0.0797	ppb	8.48	#VALUE!	
111 Cd	1.991	0.3982	ppb	8.54	#VALUE!	
114 Cd	1.0105	0.2021	ppb	6.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.04	9.008	ppb	1.55	1000.	
120 Sn	44.88	8.976	ppb	0.23	#VALUE!	
121 Sb	0.909	0.1818	ppb	6.16	#VALUE!	
123 Sb	0.927	0.1854	ppb	2.76	1000.	
135 Ba	1,042.	208.4	ppb	0.17	2000.	
137 Ba	1,037.	207.4	ppb	0.71	#VALUE!	
182 W	0.6865	0.1373	ppb	8.87	1000.	
203 Tl	1.7625	0.3525	ppb	0.99	1000.	
205 Tl	1.711	0.3422	ppb	3.26	#VALUE!	
208 Pb	98.8	19.76	ppb	0.33	2000.	
232 Th	66.45	13.29	ppb	0.72	1000.	
238 U	12.835	2.567	ppb	1.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3589628.80	2.10	3440039.00	104.3	69.5 - 120	
45 Sc	3434065.30	2.14	3153680.00	108.9	69.5 - 120	
89 Y	4787831.00	2.39	4049389.00	118.2	69.5 - 120	
159 Tb	4753736.00	0.44	4277856.00	111.1	69.5 - 120	
209 Bi	2597438.80	0.95	2443113.00	106.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000195

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\050SMPL.D\050SMPL.D#
Date Acquired: Mar 20 2018 07:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-012
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.025	1.005	ppb	1.48	100.	
11 B	60.65	12.13	ppb	1.67	1000.	
23 Na	3,330.	666.	ppb	1.09	200000.	
25 Mg	21,860.	4,372.	ppb	1.13	200000.	
27 Al	88,150.	17,630.	ppb	1.57	200000.	
28 Si	2,531.5	506.3	ppb	8.98	#VALUE!	
29 Si	2,271.5	454.3	ppb	20.03	10000.	
39 K	29,785.	5,957.	ppb	1.20	200000.	
43 Ca	17,355.	3,471.	ppb	0.94	#VALUE!	
44 Ca	17,450.	3,490.	ppb	0.52	200000.	
51 V	186.65	37.33	ppb	0.54	1000.	
52 Cr	93.65	18.73	ppb	0.62	2000.	
53 Cr	121.95	24.39	ppb	0.61	#VALUE!	
55 Mn	2,708.5	541.7	ppb	0.10	2000.	
56 Fe	79,500.	15,900.	ppb	0.87	#VALUE!	
57 Fe	78,500.	15,700.	ppb	0.48	100000.	
59 Co	47.705	9.541	ppb	0.44	1000.	
60 Ni	67.85	13.57	ppb	1.88	1000.	
63 Cu	69.65	13.93	ppb	0.95	#VALUE!	
65 Cu	69.5	13.9	ppb	0.55	2000.	
66 Zn	261.6	52.32	ppb	1.54	2000.	
68 Zn	297.25	59.45	ppb	2.08	#VALUE!	
75 As	22.765	4.553	ppb	4.15	1000.	
82 Se	7.275	1.455	ppb	24.52	1000.	
88 Sr	247.6	49.52	ppb	0.19	2000.	
98 Mo	8.705	1.741	ppb	2.14	1000.	
107 Ag	0.5145	0.1029	ppb	8.93	100.	
109 Ag	0.4363	0.0873	ppb	0.32	#VALUE!	
111 Cd	2.885	0.577	ppb	9.04	#VALUE!	
114 Cd	1.3925	0.2785	ppb	7.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.43	9.086	ppb	0.85	1000.	
120 Sn	44.56	8.912	ppb	1.13	#VALUE!	
121 Sb	1.0315	0.2063	ppb	6.01	#VALUE!	
123 Sb	1.0145	0.2029	ppb	9.65	1000.	
135 Ba	1,144.	228.8	ppb	0.22	2000.	
137 Ba	1,136.	227.2	ppb	0.61	#VALUE!	
182 W	0.687	0.1374	ppb	4.22	1000.	
203 Tl	1.9115	0.3823	ppb	5.52	1000.	
205 Tl	2.017	0.4034	ppb	4.27	#VALUE!	
208 Pb	128.95	25.79	ppb	1.20	2000.	
232 Th	71.7	14.34	ppb	0.88	1000.	
238 U	12.385	2.477	ppb	0.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3768992.00	0.80	3440039.00	109.6	69.5 - 120	
45 Sc	3577980.00	1.42	3153680.00	113.5	69.5 - 120	
89 Y	4867331.50	0.61	4049389.00	120.2	69.5 - 120	
159 Tb	4944018.50	0.72	4277856.00	115.6	69.5 - 120	
209 Bi	2662480.80	1.11	2443113.00	109.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000196

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\051SMPL.D\051SMPL.D#
Date Acquired: Mar 20 2018 07:52 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	142.55	100.	
11 B	0.7242	0.7242	ppb	10.74	1000.	
23 Na	-0.5438	-0.5438	ppb	32.37	200000.	
25 Mg	0.3304	0.3304	ppb	68.13	200000.	
27 Al	1.206	1.206	ppb	73.77	200000.	
28 Si	103.5	103.5	ppb	42.48	#VALUE!	
29 Si	-76.27	-76.27	ppb	18.82	10000.	
39 K	-3.829	-3.829	ppb	31.24	200000.	
43 Ca	0.2972	0.2972	ppb	1356.70	#VALUE!	
44 Ca	2.905	2.905	ppb	106.88	200000.	
51 V	0.0487	0.0487	ppb	101.95	1000.	
52 Cr	-0.0321	-0.0321	ppb	86.92	2000.	
53 Cr	-0.7871	-0.7871	ppb	19.38	#VALUE!	
55 Mn	0.0334	0.0334	ppb	101.50	2000.	
56 Fe	-3.089	-3.089	ppb	90.55	#VALUE!	
57 Fe	-1.017	-1.017	ppb	190.95	100000.	
59 Co	0.0067	0.0067	ppb	50.53	1000.	
60 Ni	0.0009	0.0009	ppb	581.39	1000.	
63 Cu	-0.0031	-0.0031	ppb	252.36	#VALUE!	
65 Cu	0.0059	0.0059	ppb	87.65	2000.	
66 Zn	-0.0291	-0.0291	ppb	175.34	2000.	
68 Zn	-0.1645	-0.1645	ppb	144.98	#VALUE!	
75 As	-0.0256	-0.0256	ppb	723.44	1000.	
82 Se	-0.1218	-0.1218	ppb	191.30	1000.	
88 Sr	0.0026	0.0026	ppb	127.50	2000.	
98 Mo	0.0062	0.0062	ppb	65.60	1000.	
107 Ag	0.0001	0.0001	ppb	3136.20	100.	
109 Ag	0.	0.	ppb	658.23	#VALUE!	
111 Cd	-0.113	-0.113	ppb	8.50	#VALUE!	
114 Cd	-0.0027	-0.0027	ppb	195.14	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0301	0.0301	ppb	24.58	1000.	
120 Sn	0.0246	0.0246	ppb	31.24	#VALUE!	
121 Sb	-0.0022	-0.0022	ppb	21.00	#VALUE!	
123 Sb	0.0013	0.0013	ppb	548.89	1000.	
135 Ba	0.0263	0.0263	ppb	29.32	2000.	
137 Ba	0.0161	0.0161	ppb	65.86	#VALUE!	
182 W	-0.0032	-0.0032	ppb	308.93	1000.	
203 Tl	0.0009	0.0009	ppb	169.36	1000.	
205 Tl	0.0037	0.0037	ppb	19.21	#VALUE!	
208 Pb	0.0028	0.0028	ppb	87.98	2000.	
232 Th	0.006	0.006	ppb	15.22	1000.	
238 U	0.0015	0.0015	ppb	53.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3201324.80	1.12	3440039.00	93.1	69.5 - 120	
45 Sc	3050145.80	0.47	3153680.00	96.7	69.5 - 120	
89 Y	3990436.30	0.71	4049389.00	98.5	69.5 - 120	
159 Tb	4207286.00	1.09	4277856.00	98.4	69.5 - 120	
209 Bi	2384763.50	0.65	2443113.00	97.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000197

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\052_CCV.D\052_CCV.D#
Date Acquired: Mar 20 2018 07:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.8	ppb	0.39	25	99.2	
11 B	24.24	ppb	2.06	25	96.96	
23 Na	4,901.	ppb	1.16	5,000	98.02	
25 Mg	4,972.	ppb	0.91	5,000	99.44	
27 Al	486.7	ppb	0.12	500	97.34	
28 Si	446.2	ppb	2.53	500	89.24	
29 Si	258.	ppb	93.14	500	51.6	Fail
39 K	4,950.	ppb	0.90	5,000	99	
43 Ca	4,954.	ppb	0.17	5,000	99.08	
44 Ca	5,108.	ppb	0.68	5,000	102.16	
51 V	24.54	ppb	0.64	25	98.16	
52 Cr	24.78	ppb	0.61	25	99.12	
53 Cr	24.54	ppb	2.25	25	98.16	
55 Mn	24.62	ppb	0.40	25	98.48	
56 Fe	4,954.	ppb	0.80	5,000	99.08	
57 Fe	5,088.	ppb	1.08	5,000	101.76	
59 Co	24.76	ppb	0.33	25	99.04	
60 Ni	25.07	ppb	1.00	25	100.28	
63 Cu	24.88	ppb	1.13	25	99.52	
65 Cu	24.69	ppb	0.68	25	98.76	
66 Zn	24.77	ppb	0.52	25	99.08	
68 Zn	24.78	ppb	1.89	25	99.12	
75 As	24.45	ppb	0.69	25	97.8	
82 Se	24.34	ppb	0.66	25	97.36	
88 Sr	24.63	ppb	1.13	25	98.52	
98 Mo	24.73	ppb	0.39	25	98.92	
107 Ag	25.09	ppb	0.80	25	100.36	
109 Ag	25.04	ppb	1.03	25	100.16	
111 Cd	24.82	ppb	1.66	25	99.28	
114 Cd	24.72	ppb	1.22	25	98.88	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.08	ppb	1.26	25	100.32	
120 Sn	24.8	ppb	1.96	25	99.2	
121 Sb	24.83	ppb	1.79	25	99.32	
123 Sb	24.98	ppb	0.50	25	99.92	
135 Ba	25.28	ppb	1.24	25	101.12	
137 Ba	25.13	ppb	1.04	25	100.52	
182 W	24.4	ppb	0.86	25	97.6	
203 Tl	24.47	ppb	1.48	25	97.88	
205 Tl	24.77	ppb	1.35	25	99.08	
208 Pb	24.66	ppb	0.56	25	98.64	
232 Th	24.62	ppb	1.41	25	98.48	
238 U	24.96	ppb	1.24	25	99.84	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3510059.00	0.51	3440039.00	102.0	80 - 120.4	
45 Sc	3331838.50	1.00	3153680.00	105.6	80 - 120.4	
89 Y	4354529.00	0.38	4049389.00	107.5	80 - 120.4	
159 Tb	4597425.50	0.87	4277856.00	107.5	80 - 120.4	
209 Bi	2554107.00	0.51	2443113.00	104.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000198

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\053_CCB.D\053_CCB.D#
Date Acquired: Mar 20 2018 08:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.001	ppb	184.73	1.00	
11 B	0.655	ppb	9.03	1.00	
23 Na	-0.0829	ppb	105.69	1.00	
25 Mg	0.1894	ppb	7.89	1.00	
27 Al	0.1069	ppb	46.37	1.00	
28 Si	9.758	ppb	1167.20	1.00	
29 Si	-97.33	ppb	32.51	1.00	
39 K	-5.769	ppb	27.61	1.00	
43 Ca	0.0401	ppb	11162.00	1.00	
44 Ca	-0.4565	ppb	756.85	1.00	
51 V	-0.0464	ppb	94.48	1.00	
52 Cr	-0.0151	ppb	250.53	1.00	
53 Cr	0.2521	ppb	37.55	1.00	
55 Mn	0.0241	ppb	13.66	1.00	
56 Fe	-0.664	ppb	412.65	1.00	
57 Fe	-1.594	ppb	37.76	1.00	
59 Co	0.0057	ppb	51.96	1.00	
60 Ni	0.0035	ppb	93.11	1.00	
63 Cu	0.0005	ppb	919.43	1.00	
65 Cu	-0.0027	ppb	136.26	1.00	
66 Zn	-0.0187	ppb	16.20	1.00	
68 Zn	0.0304	ppb	340.68	1.00	
75 As	-0.0677	ppb	224.44	1.00	
82 Se	0.2646	ppb	87.15	1.00	
88 Sr	0.0017	ppb	144.66	1.00	
98 Mo	0.0146	ppb	27.33	1.00	
107 Ag	0.0003	ppb	106.75	1.00	
109 Ag	-0.0001	ppb	1450.40	1.00	
111 Cd	-0.0824	ppb	29.46	1.00	
114 Cd	-0.0017	ppb	103.59	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0322	ppb	2.97	1.00	
120 Sn	0.0292	ppb	3.05	1.00	
121 Sb	0.0006	ppb	624.96	1.00	
123 Sb	-0.0031	ppb	79.82	1.00	
135 Ba	0.0188	ppb	36.51	1.00	
137 Ba	0.0109	ppb	54.80	1.00	
182 W	0.0144	ppb	20.61	1.00	
203 Tl	-0.0018	ppb	62.30	1.00	
205 Tl	0.005	ppb	53.61	1.00	
208 Pb	0.0019	ppb	49.73	1.00	
232 Th	0.0101	ppb	38.77	1.00	
238 U	0.0028	ppb	48.07	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3233053.30	1.25	3440039.00	94.0	79.5 - 120	
45 Sc	3093766.30	1.36	3153680.00	98.1	79.5 - 120	
89 Y	3967324.50	0.99	4049389.00	98.0	79.5 - 120	
159 Tb	4248002.50	1.55	4277856.00	99.3	79.5 - 120	
209 Bi	2411055.50	1.64	2443113.00	98.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000199

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\054SMPL.D\054SMPL.D#
Date Acquired: Mar 20 2018 08:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-013
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.965	1.193	ppb	2.85	100.	
11 B	48.48	9.696	ppb	4.54	1000.	
23 Na	1,923.5	384.7	ppb	2.46	200000.	
25 Mg	23,810.	4,762.	ppb	2.11	200000.	
27 Al	96,950.	19,390.	ppb	2.11	200000.	
28 Si	3,489.5	697.9	ppb	17.08	#VALUE!	
29 Si	2,551.	510.2	ppb	10.45	10000.	
39 K	29,055.	5,811.	ppb	1.82	200000.	
43 Ca	17,950.	3,590.	ppb	1.20	#VALUE!	
44 Ca	18,240.	3,648.	ppb	3.21	200000.	
51 V	181.15	36.23	ppb	1.47	1000.	
52 Cr	96.15	19.23	ppb	2.02	2000.	
53 Cr	117.1	23.42	ppb	2.78	#VALUE!	
55 Mn	3,938.5	787.7	ppb	1.33	2000.	
56 Fe	86,350.	17,270.	ppb	1.60	#VALUE!	
57 Fe	84,000.	16,800.	ppb	1.25	100000.	
59 Co	56.15	11.23	ppb	2.19	1000.	
60 Ni	80.85	16.17	ppb	2.38	1000.	
63 Cu	74.05	14.81	ppb	1.63	#VALUE!	
65 Cu	75.05	15.01	ppb	1.99	2000.	
66 Zn	284.35	56.87	ppb	1.57	2000.	
68 Zn	327.5	65.5	ppb	1.30	#VALUE!	
75 As	23.875	4.775	ppb	3.89	1000.	
82 Se	6.84	1.368	ppb	9.11	1000.	
88 Sr	297.8	59.56	ppb	1.31	2000.	
98 Mo	17.435	3.487	ppb	3.44	1000.	
107 Ag	0.549	0.1098	ppb	6.04	100.	
109 Ag	0.51	0.102	ppb	4.24	#VALUE!	
111 Cd	2.894	0.5788	ppb	5.17	#VALUE!	
114 Cd	2.0085	0.4017	ppb	3.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.76	9.152	ppb	3.06	1000.	
120 Sn	45.61	9.122	ppb	1.92	#VALUE!	
121 Sb	1.069	0.2138	ppb	1.07	#VALUE!	
123 Sb	1.125	0.225	ppb	2.92	1000.	
135 Ba	1,575.5	315.1	ppb	2.43	2000.	
137 Ba	1,572.	314.4	ppb	2.76	#VALUE!	
182 W	0.7375	0.1475	ppb	3.89	1000.	
203 Tl	2.1995	0.4399	ppb	2.03	1000.	
205 Tl	2.327	0.4654	ppb	1.74	#VALUE!	
208 Pb	133.	26.6	ppb	2.08	2000.	
232 Th	78.9	15.78	ppb	2.24	1000.	
238 U	18.945	3.789	ppb	1.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3429092.80	1.14	3440039.00	99.7	69.5 - 120	
45 Sc	3266507.80	1.22	3153680.00	103.6	69.5 - 120	
89 Y	4731228.00	0.80	4049389.00	116.8	69.5 - 120	
159 Tb	4586501.00	1.68	4277856.00	107.2	69.5 - 120	
209 Bi	2506133.30	1.46	2443113.00	102.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000200

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\055SMPL.D\055SMPL.D#
Date Acquired: Mar 20 2018 08:09 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.84	2.368	ppb	0.91	100.	
11 B	93.	18.6	ppb	3.72	1000.	
23 Na	5,950.	1,190.	ppb	0.01	200000.	
25 Mg	85,400.	17,080.	ppb	0.41	200000.	
27 Al	207,000.	41,400.	ppb	1.27	200000.	
28 Si	3,020.	604.	ppb	16.57	#VALUE!	
29 Si	1,453.	290.6	ppb	68.07	10000.	
39 K	44,280.	8,856.	ppb	0.12	200000.	
43 Ca	110,850.	22,170.	ppb	0.43	#VALUE!	
44 Ca	110,050.	22,010.	ppb	0.24	200000.	
51 V	385.4	77.08	ppb	0.27	1000.	
52 Cr	214.6	42.92	ppb	1.26	2000.	
53 Cr	239.4	47.88	ppb	1.75	#VALUE!	
55 Mn	4,164.	832.8	ppb	0.32	2000.	
56 Fe	227,350.	45,470.	ppb	1.05	#VALUE!	
57 Fe	221,850.	44,370.	ppb	0.51	100000.	
59 Co	59.65	11.93	ppb	2.67	1000.	
60 Ni	186.35	37.27	ppb	2.38	1000.	
63 Cu	175.95	35.19	ppb	1.24	#VALUE!	
65 Cu	175.05	35.01	ppb	2.39	2000.	
66 Zn	625.5	125.1	ppb	1.39	2000.	
68 Zn	732.	146.4	ppb	0.67	#VALUE!	
75 As	74.05	14.81	ppb	1.11	1000.	
82 Se	5.935	1.187	ppb	25.10	1000.	
88 Sr	645.	129.	ppb	0.67	2000.	
98 Mo	2.881	0.5762	ppb	5.79	1000.	
107 Ag	1.0055	0.2011	ppb	2.41	100.	
109 Ag	0.79	0.158	ppb	2.75	#VALUE!	
111 Cd	4.366	0.8732	ppb	7.48	#VALUE!	
114 Cd	2.193	0.4386	ppb	2.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.8	10.56	ppb	1.04	1000.	
120 Sn	52.3	10.46	ppb	0.67	#VALUE!	
121 Sb	1.7575	0.3515	ppb	6.42	#VALUE!	
123 Sb	1.6965	0.3393	ppb	1.37	1000.	
135 Ba	3,930.	786.	ppb	2.55	2000.	
137 Ba	3,911.5	782.3	ppb	1.36	#VALUE!	
182 W	0.7365	0.1473	ppb	8.79	1000.	
203 Tl	3.739	0.7478	ppb	2.59	1000.	
205 Tl	3.961	0.7922	ppb	0.85	#VALUE!	
208 Pb	179.1	35.82	ppb	0.88	2000.	
232 Th	116.1	23.22	ppb	1.31	1000.	
238 U	12.585	2.517	ppb	0.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3466711.50	1.51	3440039.00	100.8	69.5 - 120	
45 Sc	3372348.00	1.02	3153680.00	106.9	69.5 - 120	
89 Y	4925909.00	0.90	4049389.00	121.6	69.5 - 120	IS Fai
159 Tb	4639470.50	0.51	4277856.00	108.5	69.5 - 120	
209 Bi	2449671.00	0.52	2443113.00	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000201

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\056SMPL.D\056SMPL.D#
Date Acquired: Mar 20 2018 08:13 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-002
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.	2.	ppb	2.14	100.	
11 B	118.35	23.67	ppb	1.08	1000.	
23 Na	9,085.	1,817.	ppb	1.97	200000.	
25 Mg	81,200.	16,240.	ppb	2.25	200000.	
27 Al	205,650.	41,130.	ppb	1.15	200000.	
28 Si	3,370.	674.	ppb	9.01	#VALUE!	
29 Si	3,101.	620.2	ppb	8.71	10000.	
39 K	47,655.	9,531.	ppb	1.99	200000.	
43 Ca	129,850.	25,970.	ppb	1.88	#VALUE!	
44 Ca	128,750.	25,750.	ppb	1.24	200000.	
51 V	363.65	72.73	ppb	2.53	1000.	
52 Cr	191.85	38.37	ppb	3.24	2000.	
53 Cr	224.45	44.89	ppb	4.71	#VALUE!	
55 Mn	2,618.	523.6	ppb	2.38	2000.	
56 Fe	169,750.	33,950.	ppb	1.86	#VALUE!	
57 Fe	165,850.	33,170.	ppb	2.54	100000.	
59 Co	70.65	14.13	ppb	3.12	1000.	
60 Ni	153.05	30.61	ppb	2.42	1000.	
63 Cu	135.75	27.15	ppb	3.15	#VALUE!	
65 Cu	136.85	27.37	ppb	3.71	2000.	
66 Zn	519.	103.8	ppb	2.93	2000.	
68 Zn	619.	123.8	ppb	3.84	#VALUE!	
75 As	17.82	3.564	ppb	4.14	1000.	
82 Se	4.436	0.8872	ppb	12.32	1000.	
88 Sr	603.	120.6	ppb	1.68	2000.	
98 Mo	6.41	1.282	ppb	1.89	1000.	
107 Ag	0.8775	0.1755	ppb	6.56	100.	
109 Ag	0.704	0.1408	ppb	2.76	#VALUE!	
111 Cd	2.9125	0.5825	ppb	8.58	#VALUE!	
114 Cd	0.3059	0.0612	ppb	41.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.05	10.41	ppb	1.63	1000.	
120 Sn	50.9	10.18	ppb	2.98	#VALUE!	
121 Sb	1.7765	0.3553	ppb	2.22	#VALUE!	
123 Sb	1.8115	0.3623	ppb	4.57	1000.	
135 Ba	3,201.	640.2	ppb	0.96	2000.	
137 Ba	3,168.5	633.7	ppb	0.67	#VALUE!	
182 W	0.666	0.1332	ppb	10.43	1000.	
203 Tl	3.5645	0.7129	ppb	0.30	1000.	
205 Tl	3.681	0.7362	ppb	3.37	#VALUE!	
208 Pb	130.1	26.02	ppb	1.27	2000.	
232 Th	97.55	19.51	ppb	0.98	1000.	
238 U	11.07	2.214	ppb	0.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3493442.50	1.13	3440039.00	101.6	69.5 - 120	
45 Sc	3367566.00	1.32	3153680.00	106.8	69.5 - 120	
89 Y	4758029.00	1.23	4049389.00	117.5	69.5 - 120	
159 Tb	4656211.00	1.15	4277856.00	108.8	69.5 - 120	
209 Bi	2478544.50	0.41	2443113.00	101.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000202

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\057SMPL.D\057SMPL.D#
Date Acquired: Mar 20 2018 08:17 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-003
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.1	1.82	ppb	3.36	100.	
11 B	92.7	18.54	ppb	1.01	1000.	
23 Na	5,695.	1,139.	ppb	0.42	200000.	
25 Mg	78,000.	15,600.	ppb	0.63	200000.	
27 Al	171,850.	34,370.	ppb	0.65	200000.	
28 Si	2,724.5	544.9	ppb	4.55	#VALUE!	
29 Si	693.	138.6	ppb	12.31	10000.	
39 K	38,135.	7,627.	ppb	0.80	200000.	
43 Ca	92,100.	18,420.	ppb	0.39	#VALUE!	
44 Ca	91,100.	18,220.	ppb	0.31	200000.	
51 V	296.7	59.34	ppb	1.52	1000.	
52 Cr	163.95	32.79	ppb	1.42	2000.	
53 Cr	192.7	38.54	ppb	1.45	#VALUE!	
55 Mn	883.	176.6	ppb	1.45	2000.	
56 Fe	140,750.	28,150.	ppb	1.61	#VALUE!	
57 Fe	137,700.	27,540.	ppb	1.58	100000.	
59 Co	41.285	8.257	ppb	1.86	1000.	
60 Ni	116.65	23.33	ppb	2.99	1000.	
63 Cu	125.35	25.07	ppb	2.30	#VALUE!	
65 Cu	124.9	24.98	ppb	2.08	2000.	
66 Zn	447.55	89.51	ppb	2.19	2000.	
68 Zn	543.	108.6	ppb	2.70	#VALUE!	
75 As	7.97	1.594	ppb	10.51	1000.	
82 Se	4.2075	0.8415	ppb	47.53	1000.	
88 Sr	502.5	100.5	ppb	1.15	2000.	
98 Mo	1.656	0.3312	ppb	3.78	1000.	
107 Ag	0.838	0.1676	ppb	3.90	100.	
109 Ag	0.6255	0.1251	ppb	12.21	#VALUE!	
111 Cd	1.608	0.3216	ppb	10.05	#VALUE!	
114 Cd	-0.3973	-0.0795	ppb	34.84	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.365	9.873	ppb	2.31	1000.	
120 Sn	49.995	9.999	ppb	1.99	#VALUE!	
121 Sb	1.228	0.2456	ppb	4.26	#VALUE!	
123 Sb	1.395	0.279	ppb	5.61	1000.	
135 Ba	3,230.5	646.1	ppb	1.46	2000.	
137 Ba	3,208.	641.6	ppb	0.29	#VALUE!	
182 W	0.577	0.1154	ppb	7.47	1000.	
203 Tl	3.169	0.6338	ppb	1.72	1000.	
205 Tl	3.183	0.6366	ppb	3.49	#VALUE!	
208 Pb	109.45	21.89	ppb	1.38	2000.	
232 Th	89.2	17.84	ppb	2.27	1000.	
238 U	9.63	1.926	ppb	0.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3521185.30	1.26	3440039.00	102.4	69.5 - 120	
45 Sc	3388813.00	0.25	3153680.00	107.5	69.5 - 120	
89 Y	4805960.00	1.42	4049389.00	118.7	69.5 - 120	
159 Tb	4660156.00	1.22	4277856.00	108.9	69.5 - 120	
209 Bi	2496320.80	1.32	2443113.00	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000203

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\058SMPL.D\058SMPL.D#
Date Acquired: Mar 20 2018 08:21 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-004
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.15	1.83	ppb	1.93	100.	
11 B	125.15	25.03	ppb	1.09	1000.	
23 Na	2,453.	490.6	ppb	0.14	200000.	
25 Mg	115,850.	23,170.	ppb	0.11	200000.	
27 Al	193,000.	38,600.	ppb	0.59	200000.	
28 Si	3,222.5	644.5	ppb	11.96	#VALUE!	
29 Si	1,956.5	391.3	ppb	45.62	10000.	
39 K	44,360.	8,872.	ppb	0.94	200000.	
43 Ca	1,106,000.	221,200.	ppb	0.75	#VALUE!	
44 Ca	1,108,500.	221,700.	ppb	0.33	200000.	>LDR
51 V	368.25	73.65	ppb	0.49	1000.	
52 Cr	170.65	34.13	ppb	0.97	2000.	
53 Cr	190.15	38.03	ppb	1.57	#VALUE!	
55 Mn	3,018.	603.6	ppb	1.20	2000.	
56 Fe	155,900.	31,180.	ppb	0.78	#VALUE!	
57 Fe	152,750.	30,550.	ppb	0.76	100000.	
59 Co	65.75	13.15	ppb	1.74	1000.	
60 Ni	129.2	25.84	ppb	1.12	1000.	
63 Cu	105.2	21.04	ppb	1.93	#VALUE!	
65 Cu	107.5	21.5	ppb	2.68	2000.	
66 Zn	419.75	83.95	ppb	1.84	2000.	
68 Zn	504.5	100.9	ppb	1.42	#VALUE!	
75 As	27.685	5.537	ppb	1.87	1000.	
82 Se	5.49	1.098	ppb	22.61	1000.	
88 Sr	2,467.5	493.5	ppb	0.87	2000.	
98 Mo	2.343	0.4686	ppb	1.28	1000.	
107 Ag	0.941	0.1882	ppb	5.18	100.	
109 Ag	0.7865	0.1573	ppb	12.83	#VALUE!	
111 Cd	3.909	0.7818	ppb	7.94	#VALUE!	
114 Cd	1.017	0.2034	ppb	12.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.5	10.1	ppb	2.16	1000.	
120 Sn	51.1	10.22	ppb	2.93	#VALUE!	
121 Sb	1.898	0.3796	ppb	1.71	#VALUE!	
123 Sb	2.1005	0.4201	ppb	2.78	1000.	
135 Ba	3,061.5	612.3	ppb	2.72	2000.	
137 Ba	3,062.	612.4	ppb	1.37	#VALUE!	
182 W	0.8	0.16	ppb	5.48	1000.	
203 Tl	3.5465	0.7093	ppb	0.53	1000.	
205 Tl	3.637	0.7274	ppb	2.31	#VALUE!	
208 Pb	121.5	24.3	ppb	2.07	2000.	
232 Th	89.05	17.81	ppb	1.96	1000.	
238 U	18.085	3.617	ppb	1.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3394276.50	0.42	3440039.00	98.7	69.5 - 120	
45 Sc	3346069.30	0.38	3153680.00	106.1	69.5 - 120	
89 Y	4770478.50	0.97	4049389.00	117.8	69.5 - 120	
159 Tb	4587519.00	2.23	4277856.00	107.2	69.5 - 120	
209 Bi	2390729.30	1.56	2443113.00	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000204

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\059SMPL.D\059SMPL.D#
Date Acquired: Mar 20 2018 08:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.535	2.707	ppb	4.43	100.	
11 B	115.45	23.09	ppb	3.47	1000.	
23 Na	1,978.	395.6	ppb	1.99	200000.	
25 Mg	90,550.	18,110.	ppb	0.75	200000.	
27 Al	192,000.	38,400.	ppb	0.84	200000.	
28 Si	2,423.	484.6	ppb	14.72	#VALUE!	
29 Si	642.5	128.5	ppb	35.46	10000.	
39 K	46,010.	9,202.	ppb	1.45	200000.	
43 Ca	394,450.	78,890.	ppb	1.20	#VALUE!	
44 Ca	383,000.	76,600.	ppb	1.19	200000.	
51 V	829.5	165.9	ppb	1.30	1000.	
52 Cr	190.	38.	ppb	1.68	2000.	
53 Cr	206.8	41.36	ppb	1.33	#VALUE!	
55 Mn	6,605.	1,321.	ppb	0.94	2000.	
56 Fe	402,600.	80,520.	ppb	1.12	#VALUE!	
57 Fe	392,000.	78,400.	ppb	0.74	100000.	
59 Co	86.65	17.33	ppb	1.46	1000.	
60 Ni	155.4	31.08	ppb	1.81	1000.	
63 Cu	270.35	54.07	ppb	1.15	#VALUE!	
65 Cu	270.15	54.03	ppb	0.71	2000.	
66 Zn	474.	94.8	ppb	1.34	2000.	
68 Zn	613.5	122.7	ppb	1.80	#VALUE!	
75 As	509.5	101.9	ppb	0.83	1000.	
82 Se	8.005	1.601	ppb	24.10	1000.	
88 Sr	987.	197.4	ppb	1.31	2000.	
98 Mo	21.11	4.222	ppb	1.65	1000.	
107 Ag	0.9865	0.1973	ppb	2.41	100.	
109 Ag	0.729	0.1458	ppb	13.11	#VALUE!	
111 Cd	5.67	1.134	ppb	0.90	#VALUE!	
114 Cd	2.547	0.5094	ppb	4.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.25	10.25	ppb	1.35	1000.	
120 Sn	51.45	10.29	ppb	1.31	#VALUE!	
121 Sb	4.085	0.817	ppb	0.95	#VALUE!	
123 Sb	4.27	0.854	ppb	2.55	1000.	
135 Ba	4,663.	932.6	ppb	1.55	2000.	
137 Ba	4,570.	914.	ppb	1.50	#VALUE!	
182 W	0.9845	0.1969	ppb	5.15	1000.	
203 Tl	3.938	0.7876	ppb	2.21	1000.	
205 Tl	3.822	0.7644	ppb	2.08	#VALUE!	
208 Pb	239.25	47.85	ppb	0.43	2000.	
232 Th	95.15	19.03	ppb	0.63	1000.	
238 U	13.8	2.76	ppb	0.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3419925.00	3.40	3440039.00	99.4	69.5 - 120	
45 Sc	3397404.30	2.27	3153680.00	107.7	69.5 - 120	
89 Y	5121297.00	1.29	4049389.00	126.5	69.5 - 120	IS Fai
159 Tb	4681940.00	1.98	4277856.00	109.4	69.5 - 120	
209 Bi	2469592.30	1.04	2443113.00	101.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000205

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\060SMPL.D\060SMPL.D#
Date Acquired: Mar 20 2018 08:30 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-006
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.925	1.785	ppb	2.40	100.	
11 B	102.55	20.51	ppb	0.31	1000.	
23 Na	7,370.	1,474.	ppb	0.91	200000.	
25 Mg	70,300.	14,060.	ppb	0.26	200000.	
27 Al	168,950.	33,790.	ppb	0.54	200000.	
28 Si	2,250.	450.	ppb	19.73	#VALUE!	
29 Si	272.3	54.46	ppb	47.69	10000.	
39 K	40,020.	8,004.	ppb	1.42	200000.	
43 Ca	106,300.	21,260.	ppb	1.59	#VALUE!	
44 Ca	104,500.	20,900.	ppb	0.67	200000.	
51 V	322.15	64.43	ppb	2.60	1000.	
52 Cr	156.8	31.36	ppb	1.23	2000.	
53 Cr	180.15	36.03	ppb	1.09	#VALUE!	
55 Mn	1,615.	323.	ppb	0.80	2000.	
56 Fe	173,150.	34,630.	ppb	1.23	#VALUE!	
57 Fe	169,650.	33,930.	ppb	1.56	100000.	
59 Co	48.16	9.632	ppb	1.12	1000.	
60 Ni	104.15	20.83	ppb	0.25	1000.	
63 Cu	122.85	24.57	ppb	1.81	#VALUE!	
65 Cu	123.6	24.72	ppb	1.91	2000.	
66 Zn	446.25	89.25	ppb	1.18	2000.	
68 Zn	507.5	101.5	ppb	1.50	#VALUE!	
75 As	47.83	9.566	ppb	2.78	1000.	
82 Se	3.082	0.6164	ppb	12.35	1000.	
88 Sr	481.3	96.26	ppb	1.48	2000.	
98 Mo	3.3985	0.6797	ppb	5.98	1000.	
107 Ag	0.7	0.14	ppb	4.71	100.	
109 Ag	0.502	0.1004	ppb	5.21	#VALUE!	
111 Cd	2.154	0.4308	ppb	8.73	#VALUE!	
114 Cd	-0.65	-0.13	ppb	7.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.35	10.47	ppb	0.49	1000.	
120 Sn	51.8	10.36	ppb	0.71	#VALUE!	
121 Sb	1.4385	0.2877	ppb	6.38	#VALUE!	
123 Sb	1.441	0.2882	ppb	2.73	1000.	
135 Ba	2,129.5	425.9	ppb	0.55	2000.	
137 Ba	2,123.5	424.7	ppb	0.94	#VALUE!	
182 W	0.5455	0.1091	ppb	5.89	1000.	
203 Tl	3.0875	0.6175	ppb	5.92	1000.	
205 Tl	3.06	0.612	ppb	5.62	#VALUE!	
208 Pb	128.55	25.71	ppb	1.39	2000.	
232 Th	81.75	16.35	ppb	1.77	1000.	
238 U	8.9	1.78	ppb	1.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3528646.50	1.31	3440039.00	102.6	69.5 - 120	
45 Sc	3437182.50	0.61	3153680.00	109.0	69.5 - 120	
89 Y	4798755.00	0.64	4049389.00	118.5	69.5 - 120	
159 Tb	4769293.50	0.51	4277856.00	111.5	69.5 - 120	
209 Bi	2529158.00	1.11	2443113.00	103.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000206

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\061SMPL.D\061SMPL.D#
Date Acquired: Mar 20 2018 08:34 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-007
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.91	1.782	ppb	0.45	100.	
11 B	89.85	17.97	ppb	1.51	1000.	
23 Na	5,750.	1,150.	ppb	1.03	200000.	
25 Mg	73,200.	14,640.	ppb	0.17	200000.	
27 Al	167,550.	33,510.	ppb	0.49	200000.	
28 Si	2,941.	588.2	ppb	2.64	#VALUE!	
29 Si	2,232.5	446.5	ppb	9.89	10000.	
39 K	36,525.	7,305.	ppb	1.02	200000.	
43 Ca	153,800.	30,760.	ppb	1.89	#VALUE!	
44 Ca	152,150.	30,430.	ppb	1.03	200000.	
51 V	294.65	58.93	ppb	0.91	1000.	
52 Cr	158.5	31.7	ppb	1.68	2000.	
53 Cr	179.95	35.99	ppb	1.44	#VALUE!	
55 Mn	2,328.5	465.7	ppb	0.88	2000.	
56 Fe	157,200.	31,440.	ppb	1.59	#VALUE!	
57 Fe	153,650.	30,730.	ppb	1.52	100000.	
59 Co	67.05	13.41	ppb	1.87	1000.	
60 Ni	124.5	24.9	ppb	2.36	1000.	
63 Cu	126.15	25.23	ppb	1.48	#VALUE!	
65 Cu	126.8	25.36	ppb	2.76	2000.	
66 Zn	483.65	96.73	ppb	2.25	2000.	
68 Zn	588.	117.6	ppb	2.08	#VALUE!	
75 As	29.58	5.916	ppb	3.76	1000.	
82 Se	4.401	0.8802	ppb	18.76	1000.	
88 Sr	550.	110.	ppb	0.15	2000.	
98 Mo	6.28	1.256	ppb	3.06	1000.	
107 Ag	0.8095	0.1619	ppb	0.78	100.	
109 Ag	0.565	0.113	ppb	4.09	#VALUE!	
111 Cd	2.3775	0.4755	ppb	3.49	#VALUE!	
114 Cd	0.3731	0.0746	ppb	7.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.64	9.928	ppb	1.99	1000.	
120 Sn	49.605	9.921	ppb	2.31	#VALUE!	
121 Sb	1.498	0.2996	ppb	5.55	#VALUE!	
123 Sb	1.518	0.3036	ppb	3.13	1000.	
135 Ba	3,350.5	670.1	ppb	1.99	2000.	
137 Ba	3,359.	671.8	ppb	2.43	#VALUE!	
182 W	0.608	0.1216	ppb	6.35	1000.	
203 Tl	3.1935	0.6387	ppb	5.92	1000.	
205 Tl	3.305	0.661	ppb	4.74	#VALUE!	
208 Pb	135.85	27.17	ppb	1.81	2000.	
232 Th	92.25	18.45	ppb	2.76	1000.	
238 U	9.895	1.979	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3469000.30	1.10	3440039.00	100.8	69.5 - 120	
45 Sc	3370886.80	0.90	3153680.00	106.9	69.5 - 120	
89 Y	4852861.00	0.92	4049389.00	119.8	69.5 - 120	
159 Tb	4748090.00	1.65	4277856.00	111.0	69.5 - 120	
209 Bi	2515027.00	1.78	2443113.00	102.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000207

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\062SMPL.D\062SMPL.D#
Date Acquired: Mar 20 2018 08:38 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLC16IMW1
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0045	0.0009	ppb	153.25	100.	
11 B	3.426	0.6852	ppb	3.66	1000.	
23 Na	15.22	3.044	ppb	3.55	200000.	
25 Mg	5.65	1.13	ppb	14.14	200000.	
27 Al	6.06	1.212	ppb	8.83	200000.	
28 Si	60.1	12.02	ppb	234.78	#VALUE!	
29 Si	-740.5	-148.1	ppb	8.45	10000.	LOW
39 K	-36.08	-7.216	ppb	13.98	200000.	
43 Ca	-9.385	-1.877	ppb	208.90	#VALUE!	
44 Ca	0.613	0.1226	ppb	1325.40	200000.	
51 V	-0.3325	-0.0665	ppb	117.73	1000.	
52 Cr	0.3374	0.0675	ppb	22.23	2000.	
53 Cr	27.815	5.563	ppb	2.51	#VALUE!	
55 Mn	0.2112	0.0422	ppb	10.59	2000.	
56 Fe	7.93	1.586	ppb	204.04	#VALUE!	
57 Fe	-10.18	-2.036	ppb	48.46	100000.	
59 Co	0.0192	0.0038	ppb	173.76	1000.	
60 Ni	0.033	0.0066	ppb	40.89	1000.	
63 Cu	0.181	0.0362	ppb	8.13	#VALUE!	
65 Cu	0.1674	0.0335	ppb	6.92	2000.	
66 Zn	-0.0274	-0.0055	ppb	850.37	2000.	
68 Zn	-0.8055	-0.1611	ppb	103.41	#VALUE!	
75 As	-0.2123	-0.0425	ppb	228.08	1000.	
82 Se	0.7505	0.1501	ppb	160.49	1000.	
88 Sr	0.0156	0.0031	ppb	149.04	2000.	
98 Mo	0.0076	0.0015	ppb	64.19	1000.	
107 Ag	0.0059	0.0012	ppb	104.38	100.	
109 Ag	0.0021	0.0004	ppb	368.59	#VALUE!	
111 Cd	-0.6015	-0.1203	ppb	24.94	#VALUE!	
114 Cd	-0.0262	-0.0052	ppb	22.03	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.251	0.2502	ppb	14.37	1000.	
120 Sn	1.298	0.2596	ppb	2.77	#VALUE!	
121 Sb	0.1445	0.0289	ppb	17.23	#VALUE!	
123 Sb	0.1692	0.0338	ppb	2.06	1000.	
135 Ba	0.2076	0.0415	ppb	38.54	2000.	
137 Ba	0.1713	0.0343	ppb	18.91	#VALUE!	
182 W	0.0239	0.0048	ppb	80.25	1000.	
203 Tl	-0.0069	-0.0014	ppb	205.69	1000.	
205 Tl	0.0149	0.003	ppb	76.94	#VALUE!	
208 Pb	0.009	0.0018	ppb	183.59	2000.	
232 Th	0.0352	0.007	ppb	39.44	1000.	
238 U	0.0019	0.0004	ppb	39.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3196755.50	1.30	3440039.00	92.9	69.5 - 120	
45 Sc	3014949.30	0.81	3153680.00	95.6	69.5 - 120	
89 Y	4009428.30	1.40	4049389.00	99.0	69.5 - 120	
159 Tb	4220800.50	0.83	4277856.00	98.7	69.5 - 120	
209 Bi	2375715.50	0.84	2443113.00	97.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000208

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\063SMPL.D\063SMPL.D#
Date Acquired: Mar 20 2018 08:42 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLC16IMW1
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.2	10.04	ppb	2.27	100.	
11 B	497.95	99.59	ppb	2.99	1000.	
23 Na	7,475.	1,495.	ppb	1.94	200000.	
25 Mg	5,395.	1,079.	ppb	2.16	200000.	
27 Al	2,101.5	420.3	ppb	1.31	200000.	
28 Si	820.	164.	ppb	43.92	#VALUE!	
29 Si	-316.8	-63.36	ppb	41.27	10000.	
39 K	10,230.	2,046.	ppb	1.71	200000.	
43 Ca	2,909.5	581.9	ppb	0.92	#VALUE!	
44 Ca	2,623.5	524.7	ppb	0.94	200000.	
51 V	518.5	103.7	ppb	1.23	1000.	
52 Cr	201.1	40.22	ppb	1.38	2000.	
53 Cr	225.15	45.03	ppb	1.15	#VALUE!	
55 Mn	516.5	103.3	ppb	0.86	2000.	
56 Fe	990.	198.	ppb	2.32	#VALUE!	
57 Fe	1,019.5	203.9	ppb	0.97	100000.	
59 Co	521.5	104.3	ppb	1.02	1000.	
60 Ni	519.	103.8	ppb	0.87	1000.	
63 Cu	257.25	51.45	ppb	1.89	#VALUE!	
65 Cu	254.75	50.95	ppb	1.49	2000.	
66 Zn	499.	99.8	ppb	1.59	2000.	
68 Zn	571.5	114.3	ppb	2.32	#VALUE!	
75 As	102.55	20.51	ppb	1.62	1000.	
82 Se	101.05	20.21	ppb	1.02	1000.	
88 Sr	525.5	105.1	ppb	0.84	2000.	
98 Mo	103.9	20.78	ppb	0.62	1000.	
107 Ag	52.3	10.46	ppb	2.04	100.	
109 Ag	52.45	10.49	ppb	1.07	#VALUE!	
111 Cd	259.45	51.89	ppb	1.16	#VALUE!	
114 Cd	261.15	52.23	ppb	1.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	519.	103.8	ppb	1.21	1000.	
120 Sn	514.5	102.9	ppb	1.59	#VALUE!	
121 Sb	106.35	21.27	ppb	2.70	#VALUE!	
123 Sb	106.4	21.28	ppb	1.45	1000.	
135 Ba	2,166.	433.2	ppb	1.86	2000.	
137 Ba	2,143.	428.6	ppb	1.82	#VALUE!	
182 W	100.8	20.16	ppb	2.33	1000.	
203 Tl	103.6	20.72	ppb	1.07	1000.	
205 Tl	104.35	20.87	ppb	0.84	#VALUE!	
208 Pb	105.9	21.18	ppb	0.67	2000.	
232 Th	104.65	20.93	ppb	1.28	1000.	
238 U	105.45	21.09	ppb	1.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3418573.50	1.86	3440039.00	99.4	69.5 - 120	
45 Sc	3133190.30	1.21	3153680.00	99.4	69.5 - 120	
89 Y	4220989.00	0.85	4049389.00	104.2	69.5 - 120	
159 Tb	4417883.50	1.37	4277856.00	103.3	69.5 - 120	
209 Bi	2447191.50	0.69	2443113.00	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000209

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\064_CCV.D\064_CCV.D#
Date Acquired: Mar 20 2018 08:47 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.51	ppb	0.82	25	98.04	
11 B	25.26	ppb	1.15	25	101.04	
23 Na	4,858.	ppb	1.44	5,000	97.16	
25 Mg	4,923.	ppb	1.35	5,000	98.46	
27 Al	486.9	ppb	1.06	500	97.38	
28 Si	517.1	ppb	20.11	500	103.42	
29 Si	271.	ppb	96.64	500	54.2	Fail
39 K	4,927.	ppb	0.97	5,000	98.54	
43 Ca	4,877.	ppb	1.88	5,000	97.54	
44 Ca	5,103.	ppb	0.93	5,000	102.06	
51 V	24.81	ppb	0.72	25	99.24	
52 Cr	24.62	ppb	0.34	25	98.48	
53 Cr	23.82	ppb	1.38	25	95.28	
55 Mn	24.48	ppb	0.83	25	97.92	
56 Fe	4,970.	ppb	0.67	5,000	99.4	
57 Fe	5,065.	ppb	0.65	5,000	101.3	
59 Co	24.54	ppb	1.38	25	98.16	
60 Ni	24.59	ppb	1.08	25	98.36	
63 Cu	24.65	ppb	1.56	25	98.6	
65 Cu	24.85	ppb	0.84	25	99.4	
66 Zn	24.53	ppb	0.75	25	98.12	
68 Zn	24.34	ppb	2.11	25	97.36	
75 As	24.9	ppb	0.42	25	99.6	
82 Se	25.01	ppb	1.60	25	100.04	
88 Sr	24.7	ppb	0.59	25	98.8	
98 Mo	24.89	ppb	1.47	25	99.56	
107 Ag	25.14	ppb	0.62	25	100.56	
109 Ag	25.01	ppb	0.17	25	100.04	
111 Cd	24.77	ppb	0.50	25	99.08	
114 Cd	24.86	ppb	0.71	25	99.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.09	ppb	0.81	25	100.36	
120 Sn	24.91	ppb	0.55	25	99.64	
121 Sb	24.76	ppb	0.80	25	99.04	
123 Sb	25.06	ppb	0.70	25	100.24	
135 Ba	25.02	ppb	0.49	25	100.08	
137 Ba	24.74	ppb	0.32	25	98.96	
182 W	24.18	ppb	0.98	25	96.72	
203 Tl	24.37	ppb	0.69	25	97.48	
205 Tl	24.57	ppb	1.17	25	98.28	
208 Pb	24.45	ppb	0.95	25	97.8	
232 Th	24.47	ppb	1.36	25	97.88	
238 U	24.74	ppb	0.95	25	98.96	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3421640.30	1.31	3440039.00	99.5	80 - 120.4	
45 Sc	3259813.30	1.51	3153680.00	103.4	80 - 120.4	
89 Y	4259296.00	0.70	4049389.00	105.2	80 - 120.4	
159 Tb	4504868.00	1.69	4277856.00	105.3	80 - 120.4	
209 Bi	2511937.50	1.37	2443113.00	102.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\065_CCB.D\065_CCB.D#
Date Acquired: Mar 20 2018 08:51 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0005	ppb	63.34	1.00	
11 B	1.195	ppb	1.36	1.00	
23 Na	-0.5642	ppb	6.86	1.00	
25 Mg	0.0931	ppb	20.16	1.00	
27 Al	0.1025	ppb	50.28	1.00	
28 Si	150.1	ppb	60.43	1.00	
29 Si	-65.67	ppb	77.07	1.00	
39 K	-6.011	ppb	19.76	1.00	
43 Ca	-4.612	ppb	74.76	1.00	
44 Ca	-1.903	ppb	29.95	1.00	
51 V	0.0079	ppb	420.97	1.00	
52 Cr	-0.0202	ppb	155.42	1.00	
53 Cr	-0.5329	ppb	23.76	1.00	
55 Mn	0.0179	ppb	57.97	1.00	
56 Fe	0.2312	ppb	1442.00	1.00	
57 Fe	0.7388	ppb	397.94	1.00	
59 Co	0.0067	ppb	40.68	1.00	
60 Ni	-0.0007	ppb	97.37	1.00	
63 Cu	-0.0071	ppb	83.66	1.00	
65 Cu	-0.0025	ppb	126.64	1.00	
66 Zn	-0.0138	ppb	417.33	1.00	
68 Zn	0.15	ppb	34.26	1.00	
75 As	0.0323	ppb	553.77	1.00	
82 Se	0.0737	ppb	167.32	1.00	
88 Sr	0.0021	ppb	174.56	1.00	
98 Mo	0.0136	ppb	13.61	1.00	
107 Ag	0.0009	ppb	222.87	1.00	
109 Ag	-0.0007	ppb	84.84	1.00	
111 Cd	-0.0948	ppb	43.48	1.00	
114 Cd	0.0013	ppb	248.60	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0329	ppb	50.93	1.00	
120 Sn	0.0437	ppb	34.20	1.00	
121 Sb	0.0045	ppb	18.91	1.00	
123 Sb	0.0019	ppb	83.56	1.00	
135 Ba	0.0149	ppb	86.53	1.00	
137 Ba	0.009	ppb	116.33	1.00	
182 W	0.0109	ppb	33.18	1.00	
203 Tl	0.0004	ppb	454.90	1.00	
205 Tl	0.0027	ppb	20.37	1.00	
208 Pb	0.0015	ppb	236.10	1.00	
232 Th	0.0123	ppb	19.71	1.00	
238 U	0.0026	ppb	5.94	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177765.00	1.82	3440039.00	92.4	79.5 - 120	
45 Sc	3043319.80	1.39	3153680.00	96.5	79.5 - 120	
89 Y	3948527.00	1.15	4049389.00	97.5	79.5 - 120	
159 Tb	4132116.50	0.52	4277856.00	96.6	79.5 - 120	
209 Bi	2347609.80	0.55	2443113.00	96.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\066SMPL.D\066SMPL.D#
Date Acquired: Mar 20 2018 08:55 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLC20IMS1
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0023	-0.0005	ppb	396.27	100.	
11 B	4.425	0.885	ppb	1.40	1000.	
23 Na	23.375	4.675	ppb	4.28	200000.	
25 Mg	12.95	2.59	ppb	10.83	200000.	
27 Al	168.6	33.72	ppb	0.86	200000.	
28 Si	143.15	28.63	ppb	266.36	#VALUE!	
29 Si	-502.	-100.4	ppb	15.82	10000.	LOW
39 K	5.315	1.063	ppb	55.14	200000.	
43 Ca	41.24	8.248	ppb	57.72	#VALUE!	
44 Ca	54.2	10.84	ppb	22.55	200000.	
51 V	0.0133	0.0027	ppb	2205.60	1000.	
52 Cr	1.3325	0.2665	ppb	12.89	2000.	
53 Cr	26.245	5.249	ppb	4.83	#VALUE!	
55 Mn	0.4942	0.0988	ppb	14.85	2000.	
56 Fe	17.02	3.404	ppb	104.88	#VALUE!	
57 Fe	10.08	2.016	ppb	101.88	100000.	
59 Co	0.0471	0.0094	ppb	41.49	1000.	
60 Ni	0.6295	0.1259	ppb	9.81	1000.	
63 Cu	0.5935	0.1187	ppb	4.56	#VALUE!	
65 Cu	0.6105	0.1221	ppb	6.13	2000.	
66 Zn	2.651	0.5302	ppb	19.31	2000.	
68 Zn	1.075	0.215	ppb	49.16	#VALUE!	
75 As	-0.6205	-0.1241	ppb	24.20	1000.	
82 Se	0.4435	0.0887	ppb	209.58	1000.	
88 Sr	0.1758	0.0352	ppb	18.79	2000.	
98 Mo	0.0995	0.0199	ppb	30.30	1000.	
107 Ag	0.0069	0.0014	ppb	40.96	100.	
109 Ag	0.0042	0.0008	ppb	153.44	#VALUE!	
111 Cd	-0.7665	-0.1533	ppb	22.47	#VALUE!	
114 Cd	-0.0877	-0.0175	ppb	22.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	42.57	8.514	ppb	0.68	1000.	
120 Sn	42.23	8.446	ppb	0.15	#VALUE!	
121 Sb	0.126	0.0252	ppb	30.94	#VALUE!	
123 Sb	0.1008	0.0202	ppb	25.21	1000.	
135 Ba	0.3173	0.0635	ppb	13.68	2000.	
137 Ba	0.2846	0.0569	ppb	9.92	#VALUE!	
182 W	0.0945	0.0189	ppb	25.45	1000.	
203 Tl	-0.0201	-0.004	ppb	88.73	1000.	
205 Tl	-0.0027	-0.0005	ppb	274.97	#VALUE!	
208 Pb	0.2998	0.06	ppb	17.30	2000.	
232 Th	0.0904	0.0181	ppb	34.71	1000.	
238 U	0.0057	0.0011	ppb	37.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3225337.80	0.76	3440039.00	93.8	69.5 - 120	
45 Sc	3027790.30	1.14	3153680.00	96.0	69.5 - 120	
89 Y	4000046.30	1.43	4049389.00	98.8	69.5 - 120	
159 Tb	4244008.50	1.05	4277856.00	99.2	69.5 - 120	
209 Bi	2362254.30	0.84	2443113.00	96.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000212

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\067SMPL.D\067SMPL.D#
Date Acquired: Mar 20 2018 08:59 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLC20IMS1
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.26	9.852	ppb	2.32	100.	
11 B	502.	100.4	ppb	0.44	1000.	
23 Na	7,350.	1,470.	ppb	1.00	200000.	
25 Mg	5,240.	1,048.	ppb	0.25	200000.	
27 Al	2,028.	405.6	ppb	0.49	200000.	
28 Si	925.5	185.1	ppb	40.42	#VALUE!	
29 Si	-252.65	-50.53	ppb	45.20	10000.	
39 K	10,010.	2,002.	ppb	0.39	200000.	
43 Ca	2,900.	580.	ppb	7.46	#VALUE!	
44 Ca	2,583.	516.6	ppb	1.48	200000.	
51 V	501.	100.2	ppb	0.54	1000.	
52 Cr	197.15	39.43	ppb	1.65	2000.	
53 Cr	222.1	44.42	ppb	1.70	#VALUE!	
55 Mn	498.65	99.73	ppb	0.61	2000.	
56 Fe	959.	191.8	ppb	1.54	#VALUE!	
57 Fe	980.5	196.1	ppb	3.42	100000.	
59 Co	510.	102.	ppb	1.10	1000.	
60 Ni	504.	100.8	ppb	1.70	1000.	
63 Cu	249.35	49.87	ppb	1.89	#VALUE!	
65 Cu	247.5	49.5	ppb	1.83	2000.	
66 Zn	481.65	96.33	ppb	0.84	2000.	
68 Zn	554.	110.8	ppb	2.45	#VALUE!	
75 As	101.1	20.22	ppb	1.60	1000.	
82 Se	100.2	20.04	ppb	2.07	1000.	
88 Sr	511.5	102.3	ppb	1.30	2000.	
98 Mo	102.75	20.55	ppb	0.93	1000.	
107 Ag	51.45	10.29	ppb	1.57	100.	
109 Ag	51.5	10.3	ppb	1.62	#VALUE!	
111 Cd	254.35	50.87	ppb	1.51	#VALUE!	
114 Cd	254.1	50.82	ppb	0.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	547.5	109.5	ppb	1.21	1000.	
120 Sn	540.5	108.1	ppb	0.91	#VALUE!	
121 Sb	101.5	20.3	ppb	1.07	#VALUE!	
123 Sb	102.6	20.52	ppb	1.46	1000.	
135 Ba	2,073.5	414.7	ppb	0.93	2000.	
137 Ba	2,059.5	411.9	ppb	0.67	#VALUE!	
182 W	98.5	19.7	ppb	1.64	1000.	
203 Tl	101.8	20.36	ppb	1.57	1000.	
205 Tl	103.25	20.65	ppb	0.89	#VALUE!	
208 Pb	103.05	20.61	ppb	1.10	2000.	
232 Th	101.6	20.32	ppb	0.98	1000.	
238 U	103.75	20.75	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3376924.00	0.34	3440039.00	98.2	69.5 - 120	
45 Sc	3146728.00	0.54	3153680.00	99.8	69.5 - 120	
89 Y	4175958.30	0.27	4049389.00	103.1	69.5 - 120	
159 Tb	4410261.00	0.73	4277856.00	103.1	69.5 - 120	
209 Bi	2426948.00	0.67	2443113.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000213

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\068SMPL.D\068SMPL.D#
Date Acquired: Mar 20 2018 09:03 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-008
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	19.815	3.963	ppb	1.03	100.	
11 B	294.15	58.83	ppb	1.68	1000.	
23 Na	16,965.	3,393.	ppb	0.69	200000.	
25 Mg	187,650.	37,530.	ppb	1.53	200000.	
27 Al	430,100.	86,020.	ppb	1.72	200000.	
28 Si	4,752.	950.4	ppb	9.05	#VALUE!	
29 Si	3,459.	691.8	ppb	3.22	10000.	
39 K	118,650.	23,730.	ppb	1.23	200000.	
43 Ca	1,015,000.	203,000.	ppb	0.95	#VALUE!	
44 Ca	1,013,500.	202,700.	ppb	1.02	200000.	>LDR
51 V	794.5	158.9	ppb	1.39	1000.	
52 Cr	328.1	65.62	ppb	1.23	2000.	
53 Cr	330.25	66.05	ppb	1.96	#VALUE!	
55 Mn	1,935.	387.	ppb	1.37	2000.	
56 Fe	299,150.	59,830.	ppb	1.16	#VALUE!	
57 Fe	293,350.	58,670.	ppb	1.38	100000.	
59 Co	88.2	17.64	ppb	1.89	1000.	
60 Ni	299.3	59.86	ppb	1.60	1000.	
63 Cu	198.8	39.76	ppb	2.09	#VALUE!	
65 Cu	200.4	40.08	ppb	1.82	2000.	
66 Zn	772.5	154.5	ppb	1.80	2000.	
68 Zn	945.	189.	ppb	1.00	#VALUE!	
75 As	152.1	30.42	ppb	1.43	1000.	
82 Se	7.94	1.588	ppb	9.52	1000.	
88 Sr	3,350.5	670.1	ppb	1.34	2000.	
98 Mo	3.715	0.743	ppb	2.72	1000.	
107 Ag	1.5635	0.3127	ppb	3.13	100.	
109 Ag	1.171	0.2342	ppb	4.12	#VALUE!	
111 Cd	5.485	1.097	ppb	2.18	#VALUE!	
114 Cd	-0.4095	-0.0819	ppb	6.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	63.1	12.62	ppb	0.36	1000.	
120 Sn	62.2	12.44	ppb	1.34	#VALUE!	
121 Sb	5.95	1.19	ppb	3.74	#VALUE!	
123 Sb	6.055	1.211	ppb	5.58	1000.	
135 Ba	6,595.	1,319.	ppb	0.82	2000.	
137 Ba	6,410.	1,282.	ppb	0.38	#VALUE!	
182 W	1.4655	0.2931	ppb	2.53	1000.	
203 Tl	7.355	1.471	ppb	2.37	1000.	
205 Tl	7.265	1.453	ppb	0.70	#VALUE!	
208 Pb	260.65	52.13	ppb	0.90	2000.	
232 Th	182.85	36.57	ppb	0.75	1000.	
238 U	33.99	6.798	ppb	0.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3406383.80	1.37	3440039.00	99.0	69.5 - 120	
45 Sc	3432291.30	1.27	3153680.00	108.8	69.5 - 120	
89 Y	5267578.50	0.96	4049389.00	130.1	69.5 - 120	IS Fai
159 Tb	4513515.50	0.61	4277856.00	105.5	69.5 - 120	
209 Bi	2318509.50	1.02	2443113.00	94.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000214

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\069SMPL.D\069SMPL.D#
Date Acquired: Mar 20 2018 09:07 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-009
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.47	2.494	ppb	0.38	100.	
11 B	147.2	29.44	ppb	0.47	1000.	
23 Na	9,845.	1,969.	ppb	0.96	200000.	
25 Mg	113,450.	22,690.	ppb	0.73	200000.	
27 Al	257,050.	51,410.	ppb	1.22	200000.	
28 Si	5,205.	1,041.	ppb	10.77	#VALUE!	
29 Si	3,946.5	789.3	ppb	4.03	10000.	
39 K	55,300.	11,060.	ppb	0.22	200000.	
43 Ca	121,500.	24,300.	ppb	0.75	#VALUE!	
44 Ca	120,450.	24,090.	ppb	1.05	200000.	
51 V	442.15	88.43	ppb	0.85	1000.	
52 Cr	235.65	47.13	ppb	0.18	2000.	
53 Cr	257.05	51.41	ppb	1.67	#VALUE!	
55 Mn	3,920.	784.	ppb	0.96	2000.	
56 Fe	198,600.	39,720.	ppb	1.31	#VALUE!	
57 Fe	193,550.	38,710.	ppb	0.54	100000.	
59 Co	143.15	28.63	ppb	1.06	1000.	
60 Ni	202.75	40.55	ppb	1.31	1000.	
63 Cu	171.2	34.24	ppb	0.41	#VALUE!	
65 Cu	171.7	34.34	ppb	0.58	2000.	
66 Zn	631.	126.2	ppb	0.72	2000.	
68 Zn	718.	143.6	ppb	0.85	#VALUE!	
75 As	26.055	5.211	ppb	2.26	1000.	
82 Se	5.005	1.001	ppb	5.01	1000.	
88 Sr	695.	139.	ppb	0.28	2000.	
98 Mo	15.14	3.028	ppb	1.01	1000.	
107 Ag	1.2155	0.2431	ppb	2.75	100.	
109 Ag	0.898	0.1796	ppb	11.36	#VALUE!	
111 Cd	4.101	0.8202	ppb	6.39	#VALUE!	
114 Cd	1.5935	0.3187	ppb	13.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.95	11.19	ppb	2.04	1000.	
120 Sn	54.85	10.97	ppb	1.88	#VALUE!	
121 Sb	2.792	0.5584	ppb	6.86	#VALUE!	
123 Sb	2.762	0.5524	ppb	9.16	1000.	
135 Ba	3,247.5	649.5	ppb	1.97	2000.	
137 Ba	3,251.5	650.3	ppb	1.71	#VALUE!	
182 W	1.003	0.2006	ppb	1.61	1000.	
203 Tl	4.5395	0.9079	ppb	2.22	1000.	
205 Tl	4.6935	0.9387	ppb	2.88	#VALUE!	
208 Pb	176.95	35.39	ppb	0.56	2000.	
232 Th	132.45	26.49	ppb	0.93	1000.	
238 U	15.065	3.013	ppb	0.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3374984.00	0.86	3440039.00	98.1	69.5 - 120	
45 Sc	3344667.00	0.44	3153680.00	106.1	69.5 - 120	
89 Y	4912926.00	0.68	4049389.00	121.3	69.5 - 120	IS Fai
159 Tb	4547686.00	1.33	4277856.00	106.3	69.5 - 120	
209 Bi	2391215.50	0.75	2443113.00	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000215

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\070SMPL.D\070SMPL.D#
Date Acquired: Mar 20 2018 09:12 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-010
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.495	2.699	ppb	2.59	100.	
11 B	142.05	28.41	ppb	1.94	1000.	
23 Na	16,670.	3,334.	ppb	1.02	200000.	
25 Mg	110,050.	22,010.	ppb	2.14	200000.	
27 Al	254,400.	50,880.	ppb	2.62	200000.	
28 Si	5,255.	1,051.	ppb	5.86	#VALUE!	
29 Si	4,113.5	822.7	ppb	4.21	10000.	
39 K	60,000.	12,000.	ppb	1.36	200000.	
43 Ca	125,300.	25,060.	ppb	1.71	#VALUE!	
44 Ca	124,950.	24,990.	ppb	1.62	200000.	
51 V	482.4	96.48	ppb	0.56	1000.	
52 Cr	227.65	45.53	ppb	0.67	2000.	
53 Cr	252.25	50.45	ppb	0.99	#VALUE!	
55 Mn	6,460.	1,292.	ppb	0.99	2000.	
56 Fe	244,250.	48,850.	ppb	0.70	#VALUE!	
57 Fe	238,400.	47,680.	ppb	0.66	100000.	
59 Co	124.	24.8	ppb	1.80	1000.	
60 Ni	253.85	50.77	ppb	1.49	1000.	
63 Cu	180.75	36.15	ppb	1.79	#VALUE!	
65 Cu	181.25	36.25	ppb	0.96	2000.	
66 Zn	630.5	126.1	ppb	2.10	2000.	
68 Zn	725.5	145.1	ppb	1.70	#VALUE!	
75 As	77.2	15.44	ppb	2.30	1000.	
82 Se	6.135	1.227	ppb	11.31	1000.	
88 Sr	702.	140.4	ppb	0.65	2000.	
98 Mo	12.925	2.585	ppb	1.41	1000.	
107 Ag	1.11	0.222	ppb	2.86	100.	
109 Ag	0.8915	0.1783	ppb	3.77	#VALUE!	
111 Cd	4.1935	0.8387	ppb	6.66	#VALUE!	
114 Cd	0.9145	0.1829	ppb	13.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.2	10.84	ppb	1.31	1000.	
120 Sn	54.85	10.97	ppb	0.75	#VALUE!	
121 Sb	3.9565	0.7913	ppb	4.27	#VALUE!	
123 Sb	3.924	0.7848	ppb	1.98	1000.	
135 Ba	3,292.5	658.5	ppb	1.21	2000.	
137 Ba	3,308.5	661.7	ppb	2.10	#VALUE!	
182 W	1.119	0.2238	ppb	0.92	1000.	
203 Tl	5.045	1.009	ppb	1.70	1000.	
205 Tl	4.8995	0.9799	ppb	1.26	#VALUE!	
208 Pb	237.	47.4	ppb	0.92	2000.	
232 Th	128.05	25.61	ppb	0.42	1000.	
238 U	14.38	2.876	ppb	1.63	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3438673.50	1.16	3440039.00	100.0	69.5 - 120	
45 Sc	3368764.50	1.38	3153680.00	106.8	69.5 - 120	
89 Y	4849773.50	1.04	4049389.00	119.8	69.5 - 120	
159 Tb	4548929.50	0.97	4277856.00	106.3	69.5 - 120	
209 Bi	2415405.80	0.63	2443113.00	98.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000216

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\071SMPL.D\071SMPL.D#
Date Acquired: Mar 20 2018 09:16 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-011
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.91	2.182	ppb	0.97	100.	
11 B	88.7	17.74	ppb	0.87	1000.	
23 Na	9,150.	1,830.	ppb	2.57	200000.	
25 Mg	99,650.	19,930.	ppb	1.82	200000.	
27 Al	193,800.	38,760.	ppb	1.42	200000.	
28 Si	2,997.	599.4	ppb	30.05	#VALUE!	
29 Si	2,122.5	424.5	ppb	23.72	10000.	
39 K	45,085.	9,017.	ppb	1.35	200000.	
43 Ca	142,750.	28,550.	ppb	1.13	#VALUE!	
44 Ca	142,350.	28,470.	ppb	1.16	200000.	
51 V	355.65	71.13	ppb	1.45	1000.	
52 Cr	185.6	37.12	ppb	1.52	2000.	
53 Cr	205.3	41.06	ppb	1.83	#VALUE!	
55 Mn	4,620.5	924.1	ppb	0.80	2000.	
56 Fe	199,700.	39,940.	ppb	0.96	#VALUE!	
57 Fe	195,050.	39,010.	ppb	0.77	100000.	
59 Co	125.35	25.07	ppb	0.57	1000.	
60 Ni	238.35	47.67	ppb	1.36	1000.	
63 Cu	155.95	31.19	ppb	0.79	#VALUE!	
65 Cu	155.35	31.07	ppb	2.90	2000.	
66 Zn	528.	105.6	ppb	1.98	2000.	
68 Zn	639.5	127.9	ppb	1.14	#VALUE!	
75 As	25.385	5.077	ppb	3.90	1000.	
82 Se	5.565	1.113	ppb	11.61	1000.	
88 Sr	634.	126.8	ppb	1.70	2000.	
98 Mo	7.13	1.426	ppb	2.11	1000.	
107 Ag	0.9115	0.1823	ppb	4.31	100.	
109 Ag	0.728	0.1456	ppb	10.66	#VALUE!	
111 Cd	4.8555	0.9711	ppb	1.52	#VALUE!	
114 Cd	2.1255	0.4251	ppb	2.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.75	10.35	ppb	0.35	1000.	
120 Sn	50.65	10.13	ppb	0.87	#VALUE!	
121 Sb	2.2355	0.4471	ppb	4.02	#VALUE!	
123 Sb	2.319	0.4638	ppb	3.17	1000.	
135 Ba	3,640.	728.	ppb	0.92	2000.	
137 Ba	3,633.	726.6	ppb	0.45	#VALUE!	
182 W	0.7795	0.1559	ppb	6.12	1000.	
203 Tl	4.039	0.8078	ppb	2.76	1000.	
205 Tl	3.8945	0.7789	ppb	1.23	#VALUE!	
208 Pb	174.95	34.99	ppb	0.58	2000.	
232 Th	103.8	20.76	ppb	1.10	1000.	
238 U	11.49	2.298	ppb	1.38	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3601038.80	0.25	3440039.00	104.7	69.5 - 120	
45 Sc	3483904.30	0.82	3153680.00	110.5	69.5 - 120	
89 Y	4853689.00	0.78	4049389.00	119.9	69.5 - 120	
159 Tb	4664237.50	0.65	4277856.00	109.0	69.5 - 120	
209 Bi	2486158.00	0.67	2443113.00	101.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000217

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\072SMPL.D\072SMPL.D#
Date Acquired: Mar 20 2018 09:20 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-012
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	17.835	3.567	ppb	1.53	100.	
11 B	208.8	41.76	ppb	2.46	1000.	
23 Na	3,210.5	642.1	ppb	1.80	200000.	
25 Mg	125,050.	25,010.	ppb	0.80	200000.	
27 Al	351,450.	70,290.	ppb	0.66	200000.	
28 Si	4,631.5	926.3	ppb	11.50	#VALUE!	
29 Si	3,574.	714.8	ppb	5.22	10000.	
39 K	86,200.	17,240.	ppb	0.61	200000.	
43 Ca	328,600.	65,720.	ppb	1.07	#VALUE!	
44 Ca	317,150.	63,430.	ppb	0.64	200000.	
51 V	614.	122.8	ppb	1.49	1000.	
52 Cr	320.8	64.16	ppb	1.47	2000.	
53 Cr	329.	65.8	ppb	0.51	#VALUE!	
55 Mn	4,438.5	887.7	ppb	1.28	2000.	
56 Fe	293,600.	58,720.	ppb	1.01	#VALUE!	
57 Fe	287,600.	57,520.	ppb	1.42	100000.	
59 Co	121.	24.2	ppb	0.64	1000.	
60 Ni	353.7	70.74	ppb	1.52	1000.	
63 Cu	207.95	41.59	ppb	1.62	#VALUE!	
65 Cu	208.65	41.73	ppb	1.23	2000.	
66 Zn	832.	166.4	ppb	1.55	2000.	
68 Zn	905.5	181.1	ppb	1.54	#VALUE!	
75 As	55.35	11.07	ppb	1.44	1000.	
82 Se	8.19	1.638	ppb	16.00	1000.	
88 Sr	1,480.	296.	ppb	0.68	2000.	
98 Mo	6.33	1.266	ppb	1.35	1000.	
107 Ag	1.3425	0.2685	ppb	4.80	100.	
109 Ag	1.1245	0.2249	ppb	6.28	#VALUE!	
111 Cd	4.0375	0.8075	ppb	11.09	#VALUE!	
114 Cd	0.0636	0.0127	ppb	135.01	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.25	11.65	ppb	0.61	1000.	
120 Sn	57.5	11.5	ppb	0.26	#VALUE!	
121 Sb	4.0815	0.8163	ppb	5.82	#VALUE!	
123 Sb	4.3305	0.8661	ppb	5.17	1000.	
135 Ba	3,301.	660.2	ppb	1.34	2000.	
137 Ba	3,321.	664.2	ppb	0.45	#VALUE!	
182 W	1.064	0.2128	ppb	3.21	1000.	
203 Tl	6.	1.2	ppb	1.71	1000.	
205 Tl	6.05	1.21	ppb	1.57	#VALUE!	
208 Pb	209.7	41.94	ppb	1.03	2000.	
232 Th	166.6	33.32	ppb	1.33	1000.	
238 U	19.865	3.973	ppb	1.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3378434.00	1.57	3440039.00	98.2	69.5 - 120	
45 Sc	3419241.50	0.81	3153680.00	108.4	69.5 - 120	
89 Y	4985728.00	0.68	4049389.00	123.1	69.5 - 120	IS Fai
159 Tb	4521072.50	0.81	4277856.00	105.7	69.5 - 120	
209 Bi	2367795.00	0.80	2443113.00	96.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000218

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\073SMPL.D\073SMPL.D#
Date Acquired: Mar 20 2018 09:24 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-013
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.755	2.151	ppb	2.07	100.	
11 B	122.1	24.42	ppb	1.70	1000.	
23 Na	1,994.	398.8	ppb	1.34	200000.	
25 Mg	94,250.	18,850.	ppb	0.85	200000.	
27 Al	212,250.	42,450.	ppb	0.29	200000.	
28 Si	4,799.	959.8	ppb	6.92	#VALUE!	
29 Si	3,639.5	727.9	ppb	5.66	10000.	
39 K	48,400.	9,680.	ppb	0.56	200000.	
43 Ca	219,550.	43,910.	ppb	0.54	#VALUE!	
44 Ca	211,050.	42,210.	ppb	0.47	200000.	
51 V	380.95	76.19	ppb	0.43	1000.	
52 Cr	200.1	40.02	ppb	0.92	2000.	
53 Cr	224.3	44.86	ppb	1.05	#VALUE!	
55 Mn	1,817.5	363.5	ppb	0.48	2000.	
56 Fe	183,200.	36,640.	ppb	0.34	#VALUE!	
57 Fe	178,750.	35,750.	ppb	0.58	100000.	
59 Co	50.4	10.08	ppb	1.73	1000.	
60 Ni	133.25	26.65	ppb	0.88	1000.	
63 Cu	146.25	29.25	ppb	0.71	#VALUE!	
65 Cu	147.8	29.56	ppb	1.83	2000.	
66 Zn	528.5	105.7	ppb	1.89	2000.	
68 Zn	619.	123.8	ppb	1.02	#VALUE!	
75 As	27.395	5.479	ppb	4.50	1000.	
82 Se	4.8365	0.9673	ppb	18.93	1000.	
88 Sr	668.	133.6	ppb	0.48	2000.	
98 Mo	2.2125	0.4425	ppb	4.58	1000.	
107 Ag	1.0795	0.2159	ppb	5.09	100.	
109 Ag	0.847	0.1694	ppb	4.12	#VALUE!	
111 Cd	2.6065	0.5213	ppb	6.92	#VALUE!	
114 Cd	-0.0686	-0.0137	ppb	110.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.35	10.67	ppb	0.35	1000.	
120 Sn	52.5	10.5	ppb	0.76	#VALUE!	
121 Sb	2.0975	0.4195	ppb	5.87	#VALUE!	
123 Sb	2.139	0.4278	ppb	2.74	1000.	
135 Ba	3,295.	659.	ppb	0.12	2000.	
137 Ba	3,311.5	662.3	ppb	0.50	#VALUE!	
182 W	0.631	0.1262	ppb	5.08	1000.	
203 Tl	3.7485	0.7497	ppb	2.14	1000.	
205 Tl	3.7	0.74	ppb	1.54	#VALUE!	
208 Pb	144.85	28.97	ppb	0.75	2000.	
232 Th	104.6	20.92	ppb	0.70	1000.	
238 U	11.69	2.338	ppb	1.75	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3516887.00	1.54	3440039.00	102.2	69.5 - 120	
45 Sc	3431567.50	0.22	3153680.00	108.8	69.5 - 120	
89 Y	4883210.50	0.60	4049389.00	120.6	69.5 - 120	IS Fai
159 Tb	4651490.50	0.06	4277856.00	108.7	69.5 - 120	
209 Bi	2453342.30	0.19	2443113.00	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000219

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\074SMPL.D\074SMPL.D#
Date Acquired: Mar 20 2018 09:29 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-014
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.21	1.642	ppb	1.50	100.	
11 B	85.95	17.19	ppb	2.87	1000.	
23 Na	1,065.5	213.1	ppb	0.42	200000.	
25 Mg	41,950.	8,390.	ppb	0.49	200000.	
27 Al	173,450.	34,690.	ppb	1.40	200000.	
28 Si	3,970.5	794.1	ppb	8.53	#VALUE!	
29 Si	3,113.	622.6	ppb	8.59	10000.	
39 K	43,045.	8,609.	ppb	1.45	200000.	
43 Ca	31,845.	6,369.	ppb	1.22	#VALUE!	
44 Ca	32,080.	6,416.	ppb	0.52	200000.	
51 V	275.5	55.1	ppb	2.19	1000.	
52 Cr	137.65	27.53	ppb	2.27	2000.	
53 Cr	161.5	32.3	ppb	2.09	#VALUE!	
55 Mn	2,410.	482.	ppb	1.34	2000.	
56 Fe	139,600.	27,920.	ppb	1.99	#VALUE!	
57 Fe	136,850.	27,370.	ppb	1.90	100000.	
59 Co	53.35	10.67	ppb	1.64	1000.	
60 Ni	114.3	22.86	ppb	1.98	1000.	
63 Cu	95.3	19.06	ppb	1.30	#VALUE!	
65 Cu	96.15	19.23	ppb	1.75	2000.	
66 Zn	382.6	76.52	ppb	0.89	2000.	
68 Zn	431.55	86.31	ppb	1.90	#VALUE!	
75 As	33.64	6.728	ppb	2.12	1000.	
82 Se	4.739	0.9478	ppb	23.74	1000.	
88 Sr	340.25	68.05	ppb	2.74	2000.	
98 Mo	4.4835	0.8967	ppb	4.23	1000.	
107 Ag	0.8115	0.1623	ppb	1.07	100.	
109 Ag	0.6655	0.1331	ppb	4.82	#VALUE!	
111 Cd	2.7045	0.5409	ppb	12.93	#VALUE!	
114 Cd	0.7775	0.1555	ppb	17.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.65	10.33	ppb	1.75	1000.	
120 Sn	52.1	10.42	ppb	1.41	#VALUE!	
121 Sb	1.9175	0.3835	ppb	6.81	#VALUE!	
123 Sb	1.862	0.3724	ppb	11.05	1000.	
135 Ba	1,841.	368.2	ppb	1.55	2000.	
137 Ba	1,833.5	366.7	ppb	1.61	#VALUE!	
182 W	0.8605	0.1721	ppb	12.57	1000.	
203 Tl	2.704	0.5408	ppb	4.13	1000.	
205 Tl	2.746	0.5492	ppb	1.10	#VALUE!	
208 Pb	116.15	23.23	ppb	1.64	2000.	
232 Th	82.15	16.43	ppb	1.46	1000.	
238 U	11.145	2.229	ppb	1.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3522169.00	0.12	3440039.00	102.4	69.5 - 120	
45 Sc	3349100.30	0.52	3153680.00	106.2	69.5 - 120	
89 Y	4692687.00	1.11	4049389.00	115.9	69.5 - 120	
159 Tb	4575399.00	1.49	4277856.00	107.0	69.5 - 120	
209 Bi	2450556.00	1.25	2443113.00	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000220

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\075SMPL.D\075SMPL.D#
Date Acquired: Mar 20 2018 09:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0015	0.0015	ppb	137.01	100.	
11 B	0.7137	0.7137	ppb	4.04	1000.	
23 Na	-0.8336	-0.8336	ppb	11.68	200000.	
25 Mg	0.568	0.568	ppb	15.86	200000.	
27 Al	1.293	1.293	ppb	33.50	200000.	
28 Si	168.8	168.8	ppb	28.64	#VALUE!	
29 Si	-76.62	-76.62	ppb	53.69	10000.	
39 K	-4.962	-4.962	ppb	31.28	200000.	
43 Ca	4.586	4.586	ppb	81.14	#VALUE!	
44 Ca	1.758	1.758	ppb	68.94	200000.	
51 V	-0.0283	-0.0283	ppb	213.35	1000.	
52 Cr	-0.0309	-0.0309	ppb	55.05	2000.	
53 Cr	0.0343	0.0343	ppb	239.04	#VALUE!	
55 Mn	0.0317	0.0317	ppb	25.99	2000.	
56 Fe	-3.09	-3.09	ppb	77.18	#VALUE!	
57 Fe	-0.792	-0.792	ppb	38.42	100000.	
59 Co	0.0067	0.0067	ppb	70.07	1000.	
60 Ni	-0.0017	-0.0017	ppb	263.76	1000.	
63 Cu	0.0103	0.0103	ppb	40.07	#VALUE!	
65 Cu	0.0095	0.0095	ppb	51.50	2000.	
66 Zn	-0.036	-0.036	ppb	149.05	2000.	
68 Zn	-0.1711	-0.1711	ppb	73.23	#VALUE!	
75 As	0.0034	0.0034	ppb	1332.30	1000.	
82 Se	0.3884	0.3884	ppb	68.54	1000.	
88 Sr	0.0045	0.0045	ppb	84.35	2000.	
98 Mo	0.0002	0.0002	ppb	2006.20	1000.	
107 Ag	0.0016	0.0016	ppb	169.69	100.	
109 Ag	-0.0004	-0.0004	ppb	79.68	#VALUE!	
111 Cd	-0.1166	-0.1166	ppb	10.74	#VALUE!	
114 Cd	-0.001	-0.001	ppb	305.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0342	0.0342	ppb	97.86	1000.	
120 Sn	0.044	0.044	ppb	25.56	#VALUE!	
121 Sb	-0.0007	-0.0007	ppb	311.64	#VALUE!	
123 Sb	0.003	0.003	ppb	153.63	1000.	
135 Ba	0.0289	0.0289	ppb	28.10	2000.	
137 Ba	0.0215	0.0215	ppb	54.33	#VALUE!	
182 W	-0.0078	-0.0078	ppb	47.89	1000.	
203 Tl	-0.0039	-0.0039	ppb	136.45	1000.	
205 Tl	0.0019	0.0019	ppb	11.03	#VALUE!	
208 Pb	0.0006	0.0006	ppb	235.29	2000.	
232 Th	0.0046	0.0046	ppb	24.97	1000.	
238 U	0.0009	0.0009	ppb	49.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3225167.00	1.35	3440039.00	93.8	69.5 - 120	
45 Sc	3010003.00	1.19	3153680.00	95.4	69.5 - 120	
89 Y	3877614.50	0.38	4049389.00	95.8	69.5 - 120	
159 Tb	4062163.80	1.02	4277856.00	95.0	69.5 - 120	
209 Bi	2298723.50	0.74	2443113.00	94.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000221

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\076_CCV.D\076_CCV.D#
Date Acquired: Mar 20 2018 09:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.66	ppb	1.21	25	98.64	
11 B	24.07	ppb	2.44	25	96.28	
23 Na	4,817.	ppb	0.31	5,000	96.34	
25 Mg	4,905.	ppb	1.27	5,000	98.1	
27 Al	487.4	ppb	0.92	500	97.48	
28 Si	524.2	ppb	7.80	500	104.84	
29 Si	128.	ppb	9.86	500	25.6	Fail
39 K	4,938.	ppb	0.39	5,000	98.76	
43 Ca	4,925.	ppb	0.66	5,000	98.5	
44 Ca	5,074.	ppb	0.96	5,000	101.48	
51 V	25.16	ppb	1.03	25	100.64	
52 Cr	25.02	ppb	0.83	25	100.08	
53 Cr	25.24	ppb	0.78	25	100.96	
55 Mn	24.99	ppb	0.56	25	99.96	
56 Fe	5,037.	ppb	0.52	5,000	100.74	
57 Fe	5,159.	ppb	0.31	5,000	103.18	
59 Co	24.87	ppb	0.86	25	99.48	
60 Ni	25.26	ppb	0.92	25	101.04	
63 Cu	25.48	ppb	0.92	25	101.92	
65 Cu	24.91	ppb	1.30	25	99.64	
66 Zn	24.84	ppb	1.33	25	99.36	
68 Zn	25.39	ppb	2.49	25	101.56	
75 As	25.02	ppb	0.68	25	100.08	
82 Se	25.15	ppb	2.46	25	100.6	
88 Sr	24.82	ppb	0.45	25	99.28	
98 Mo	24.98	ppb	0.52	25	99.92	
107 Ag	25.2	ppb	0.31	25	100.8	
109 Ag	25.12	ppb	0.13	25	100.48	
111 Cd	25.04	ppb	1.40	25	100.16	
114 Cd	24.9	ppb	0.87	25	99.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.12	ppb	1.23	25	100.48	
120 Sn	25.06	ppb	0.65	25	100.24	
121 Sb	24.85	ppb	0.72	25	99.4	
123 Sb	25.04	ppb	1.99	25	100.16	
135 Ba	25.39	ppb	0.91	25	101.56	
137 Ba	24.98	ppb	2.48	25	99.92	
182 W	24.16	ppb	1.44	25	96.64	
203 Tl	24.5	ppb	3.04	25	98	
205 Tl	24.65	ppb	1.76	25	98.6	
208 Pb	24.54	ppb	1.50	25	98.16	
232 Th	24.57	ppb	1.33	25	98.28	
238 U	24.89	ppb	2.30	25	99.56	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3480812.30	1.24	3440039.00	101.2	80 - 120.4	
45 Sc	3306759.00	0.12	3153680.00	104.9	80 - 120.4	
89 Y	4170644.00	0.32	4049389.00	103.0	80 - 120.4	
159 Tb	4439047.50	0.86	4277856.00	103.8	80 - 120.4	
209 Bi	2460473.30	0.97	2443113.00	100.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000222

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\077_CCB.D\077_CCB.D#
Date Acquired: Mar 20 2018 09:41 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0023	ppb	56.97	1.00	
11 B	0.6444	ppb	22.66	1.00	
23 Na	-0.8233	ppb	6.49	1.00	
25 Mg	0.4868	ppb	7.53	1.00	
27 Al	0.7349	ppb	7.30	1.00	
28 Si	208.8	ppb	32.54	1.00	
29 Si	-35.35	ppb	119.15	1.00	
39 K	-3.198	ppb	40.71	1.00	
43 Ca	0.3632	ppb	1077.40	1.00	
44 Ca	2.245	ppb	86.41	1.00	
51 V	-0.01	ppb	188.13	1.00	
52 Cr	-0.0257	ppb	133.09	1.00	
53 Cr	0.4448	ppb	12.19	1.00	
55 Mn	0.0181	ppb	45.45	1.00	
56 Fe	0.5758	ppb	254.25	1.00	
57 Fe	-0.6014	ppb	119.12	1.00	
59 Co	0.0067	ppb	5.70	1.00	
60 Ni	-0.0026	ppb	206.54	1.00	
63 Cu	-0.006	ppb	103.88	1.00	
65 Cu	-0.0015	ppb	207.35	1.00	
66 Zn	-0.0205	ppb	115.49	1.00	
68 Zn	-0.0349	ppb	158.07	1.00	
75 As	-0.0228	ppb	236.12	1.00	
82 Se	0.0277	ppb	626.40	1.00	
88 Sr	0.0089	ppb	56.89	1.00	
98 Mo	0.0156	ppb	56.53	1.00	
107 Ag	-0.0017	ppb	99.20	1.00	
109 Ag	-0.0009	ppb	140.10	1.00	
111 Cd	-0.1254	ppb	15.01	1.00	
114 Cd	-0.0046	ppb	95.34	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0354	ppb	56.90	1.00	
120 Sn	0.06	ppb	48.38	1.00	
121 Sb	-0.0003	ppb	2198.90	1.00	
123 Sb	0.0038	ppb	128.09	1.00	
135 Ba	0.0223	ppb	26.91	1.00	
137 Ba	0.0147	ppb	53.41	1.00	
182 W	0.0049	ppb	31.27	1.00	
203 Tl	0.0009	ppb	480.40	1.00	
205 Tl	0.0056	ppb	17.48	1.00	
208 Pb	0.0058	ppb	57.69	1.00	
232 Th	0.0095	ppb	25.74	1.00	
238 U	0.0031	ppb	41.93	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3235809.00	1.58	3440039.00	94.1	79.5 - 120	
45 Sc	3041182.80	0.29	3153680.00	96.4	79.5 - 120	
89 Y	3927080.00	0.56	4049389.00	97.0	79.5 - 120	
159 Tb	4115687.00	1.09	4277856.00	96.2	79.5 - 120	
209 Bi	2325545.00	0.92	2443113.00	95.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000223

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\078SMPL.D\078SMPL.D#
Date Acquired: Mar 20 2018 09:46 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-015
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.725	1.545	ppb	1.35	100.	
11 B	89.	17.8	ppb	3.18	1000.	
23 Na	1,035.	207.	ppb	2.42	200000.	
25 Mg	41,365.	8,273.	ppb	2.59	200000.	
27 Al	147,450.	29,490.	ppb	0.95	200000.	
28 Si	3,224.	644.8	ppb	8.89	#VALUE!	
29 Si	2,872.	574.4	ppb	8.52	10000.	
39 K	48,960.	9,792.	ppb	0.88	200000.	
43 Ca	45,790.	9,158.	ppb	0.91	#VALUE!	
44 Ca	45,245.	9,049.	ppb	0.70	200000.	
51 V	233.65	46.73	ppb	1.71	1000.	
52 Cr	145.25	29.05	ppb	2.91	2000.	
53 Cr	160.6	32.12	ppb	3.11	#VALUE!	
55 Mn	2,516.5	503.3	ppb	1.81	2000.	
56 Fe	126,400.	25,280.	ppb	1.10	#VALUE!	
57 Fe	123,350.	24,670.	ppb	1.83	100000.	
59 Co	54.65	10.93	ppb	2.37	1000.	
60 Ni	117.65	23.53	ppb	2.70	1000.	
63 Cu	261.5	52.3	ppb	2.25	#VALUE!	
65 Cu	265.1	53.02	ppb	2.85	2000.	
66 Zn	648.	129.6	ppb	2.22	2000.	
68 Zn	689.	137.8	ppb	2.84	#VALUE!	
75 As	27.985	5.597	ppb	2.81	1000.	
82 Se	5.145	1.029	ppb	6.10	1000.	
88 Sr	429.15	85.83	ppb	1.37	2000.	
98 Mo	4.3855	0.8771	ppb	5.04	1000.	
107 Ag	2.55	0.51	ppb	1.60	100.	
109 Ag	2.354	0.4708	ppb	3.78	#VALUE!	
111 Cd	35.545	7.109	ppb	0.44	#VALUE!	
114 Cd	33.79	6.758	ppb	2.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	61.1	12.22	ppb	2.89	1000.	
120 Sn	60.4	12.08	ppb	1.26	#VALUE!	
121 Sb	2.743	0.5486	ppb	5.91	#VALUE!	
123 Sb	2.7945	0.5589	ppb	4.98	1000.	
135 Ba	1,947.	389.4	ppb	2.12	2000.	
137 Ba	1,930.5	386.1	ppb	1.24	#VALUE!	
182 W	1.14	0.228	ppb	1.16	1000.	
203 Tl	2.6195	0.5239	ppb	3.38	1000.	
205 Tl	2.601	0.5202	ppb	4.58	#VALUE!	
208 Pb	243.85	48.77	ppb	2.31	2000.	
232 Th	79.	15.8	ppb	2.49	1000.	
238 U	14.605	2.921	ppb	2.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3529942.50	1.39	3440039.00	102.6	69.5 - 120	
45 Sc	3372435.00	0.66	3153680.00	106.9	69.5 - 120	
89 Y	4680165.00	1.52	4049389.00	115.6	69.5 - 120	
159 Tb	4568274.50	0.98	4277856.00	106.8	69.5 - 120	
209 Bi	2472750.00	1.35	2443113.00	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000224

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\079SMPL.D\079SMPL.D#
Date Acquired: Mar 20 2018 09:50 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-016
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.56	1.712	ppb	0.31	100.	
11 B	135.4	27.08	ppb	2.54	1000.	
23 Na	2,111.5	422.3	ppb	1.95	200000.	
25 Mg	52,400.	10,480.	ppb	1.24	200000.	
27 Al	171,850.	34,370.	ppb	0.65	200000.	
28 Si	3,215.5	643.1	ppb	15.18	#VALUE!	
29 Si	1,427.	285.4	ppb	75.86	10000.	
39 K	63,050.	12,610.	ppb	0.92	200000.	
43 Ca	34,375.	6,875.	ppb	1.34	#VALUE!	
44 Ca	35,040.	7,008.	ppb	0.53	200000.	
51 V	273.8	54.76	ppb	0.90	1000.	
52 Cr	193.75	38.75	ppb	0.78	2000.	
53 Cr	215.7	43.14	ppb	1.41	#VALUE!	
55 Mn	2,918.	583.6	ppb	0.16	2000.	
56 Fe	142,050.	28,410.	ppb	0.23	#VALUE!	
57 Fe	138,650.	27,730.	ppb	0.52	100000.	
59 Co	70.8	14.16	ppb	1.05	1000.	
60 Ni	147.05	29.41	ppb	0.24	1000.	
63 Cu	361.85	72.37	ppb	0.68	#VALUE!	
65 Cu	361.95	72.39	ppb	1.16	2000.	
66 Zn	931.5	186.3	ppb	0.60	2000.	
68 Zn	979.5	195.9	ppb	0.57	#VALUE!	
75 As	31.195	6.239	ppb	4.29	1000.	
82 Se	5.69	1.138	ppb	14.70	1000.	
88 Sr	458.6	91.72	ppb	1.67	2000.	
98 Mo	5.095	1.019	ppb	3.14	1000.	
107 Ag	4.8605	0.9721	ppb	1.59	100.	
109 Ag	4.6715	0.9343	ppb	1.59	#VALUE!	
111 Cd	104.45	20.89	ppb	0.34	#VALUE!	
114 Cd	102.25	20.45	ppb	0.75	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	65.45	13.09	ppb	0.83	1000.	
120 Sn	65.7	13.14	ppb	1.12	#VALUE!	
121 Sb	5.08	1.016	ppb	0.95	#VALUE!	
123 Sb	5.27	1.054	ppb	3.80	1000.	
135 Ba	2,153.5	430.7	ppb	0.62	2000.	
137 Ba	2,136.	427.2	ppb	0.48	#VALUE!	
182 W	1.8805	0.3761	ppb	1.73	1000.	
203 Tl	2.7585	0.5517	ppb	3.01	1000.	
205 Tl	2.973	0.5946	ppb	1.28	#VALUE!	
208 Pb	550.5	110.1	ppb	1.10	2000.	
232 Th	84.75	16.95	ppb	0.79	1000.	
238 U	14.205	2.841	ppb	1.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3522370.30	0.79	3440039.00	102.4	69.5 - 120	
45 Sc	3386074.30	1.13	3153680.00	107.4	69.5 - 120	
89 Y	4689797.50	1.08	4049389.00	115.8	69.5 - 120	
159 Tb	4538869.00	0.51	4277856.00	106.1	69.5 - 120	
209 Bi	2446201.80	0.72	2443113.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000225

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\080SMPL.D\080SMPL.D#
Date Acquired: Mar 20 2018 09:54 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-017
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.62	1.124	ppb	2.38	100.	
11 B	83.2	16.64	ppb	1.21	1000.	
23 Na	1,029.	205.8	ppb	1.43	200000.	
25 Mg	34,005.	6,801.	ppb	0.49	200000.	
27 Al	116,100.	23,220.	ppb	0.57	200000.	
28 Si	4,836.5	967.3	ppb	7.72	#VALUE!	
29 Si	3,975.	795.	ppb	6.66	10000.	
39 K	42,385.	8,477.	ppb	0.79	200000.	
43 Ca	22,730.	4,546.	ppb	1.07	#VALUE!	
44 Ca	22,980.	4,596.	ppb	0.69	200000.	
51 V	199.7	39.94	ppb	0.86	1000.	
52 Cr	107.25	21.45	ppb	0.79	2000.	
53 Cr	129.5	25.9	ppb	1.42	#VALUE!	
55 Mn	1,989.5	397.9	ppb	1.27	2000.	
56 Fe	96,000.	19,200.	ppb	0.90	#VALUE!	
57 Fe	93,100.	18,620.	ppb	0.95	100000.	
59 Co	44.445	8.889	ppb	1.68	1000.	
60 Ni	83.95	16.79	ppb	0.93	1000.	
63 Cu	159.2	31.84	ppb	0.85	#VALUE!	
65 Cu	159.6	31.92	ppb	1.39	2000.	
66 Zn	378.2	75.64	ppb	2.56	2000.	
68 Zn	409.6	81.92	ppb	0.87	#VALUE!	
75 As	21.04	4.208	ppb	5.78	1000.	
82 Se	4.791	0.9582	ppb	24.23	1000.	
88 Sr	320.35	64.07	ppb	1.41	2000.	
98 Mo	6.965	1.393	ppb	1.79	1000.	
107 Ag	2.332	0.4664	ppb	2.91	100.	
109 Ag	2.155	0.431	ppb	1.35	#VALUE!	
111 Cd	4.741	0.9482	ppb	3.24	#VALUE!	
114 Cd	3.424	0.6848	ppb	3.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.79	9.958	ppb	1.04	1000.	
120 Sn	49.675	9.935	ppb	0.70	#VALUE!	
121 Sb	1.8805	0.3761	ppb	4.38	#VALUE!	
123 Sb	1.8055	0.3611	ppb	4.61	1000.	
135 Ba	1,307.	261.4	ppb	0.99	2000.	
137 Ba	1,297.5	259.5	ppb	1.46	#VALUE!	
182 W	0.785	0.157	ppb	6.45	1000.	
203 Tl	1.929	0.3858	ppb	5.18	1000.	
205 Tl	2.0585	0.4117	ppb	2.17	#VALUE!	
208 Pb	126.95	25.39	ppb	1.01	2000.	
232 Th	69.85	13.97	ppb	1.54	1000.	
238 U	10.99	2.198	ppb	0.97	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3478160.50	0.60	3440039.00	101.1	69.5 - 120	
45 Sc	3275463.00	1.21	3153680.00	103.9	69.5 - 120	
89 Y	4546006.00	0.73	4049389.00	112.3	69.5 - 120	
159 Tb	4507330.50	1.06	4277856.00	105.4	69.5 - 120	
209 Bi	2458060.50	0.98	2443113.00	100.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000226

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\081SMPL.D\081SMPL.D#
Date Acquired: Mar 20 2018 09:58 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-018
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.16	1.432	ppb	1.86	100.	
11 B	116.4	23.28	ppb	0.96	1000.	
23 Na	2,038.5	407.7	ppb	1.82	200000.	
25 Mg	43,720.	8,744.	ppb	1.21	200000.	
27 Al	144,400.	28,880.	ppb	1.74	200000.	
28 Si	4,395.	879.	ppb	7.36	#VALUE!	
29 Si	3,635.	727.	ppb	2.78	10000.	
39 K	52,150.	10,430.	ppb	2.22	200000.	
43 Ca	26,305.	5,261.	ppb	3.85	#VALUE!	
44 Ca	26,415.	5,283.	ppb	1.50	200000.	
51 V	235.2	47.04	ppb	1.27	1000.	
52 Cr	126.75	25.35	ppb	1.84	2000.	
53 Cr	147.1	29.42	ppb	1.95	#VALUE!	
55 Mn	2,530.	506.	ppb	1.63	2000.	
56 Fe	118,400.	23,680.	ppb	1.59	#VALUE!	
57 Fe	115,150.	23,030.	ppb	2.34	100000.	
59 Co	52.5	10.5	ppb	1.67	1000.	
60 Ni	104.	20.8	ppb	0.83	1000.	
63 Cu	102.75	20.55	ppb	1.49	#VALUE!	
65 Cu	103.55	20.71	ppb	2.80	2000.	
66 Zn	370.35	74.07	ppb	1.22	2000.	
68 Zn	415.	83.	ppb	1.34	#VALUE!	
75 As	25.67	5.134	ppb	4.48	1000.	
82 Se	5.245	1.049	ppb	24.33	1000.	
88 Sr	392.8	78.56	ppb	0.66	2000.	
98 Mo	7.17	1.434	ppb	3.37	1000.	
107 Ag	1.841	0.3682	ppb	3.01	100.	
109 Ag	1.6775	0.3355	ppb	2.32	#VALUE!	
111 Cd	3.403	0.6806	ppb	13.70	#VALUE!	
114 Cd	1.6395	0.3279	ppb	6.89	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.4	10.08	ppb	1.03	1000.	
120 Sn	49.4	9.88	ppb	1.09	#VALUE!	
121 Sb	2.101	0.4202	ppb	2.29	#VALUE!	
123 Sb	2.1105	0.4221	ppb	4.78	1000.	
135 Ba	1,598.5	319.7	ppb	1.30	2000.	
137 Ba	1,588.	317.6	ppb	0.84	#VALUE!	
182 W	0.984	0.1968	ppb	8.11	1000.	
203 Tl	2.6155	0.5231	ppb	5.30	1000.	
205 Tl	2.564	0.5128	ppb	3.70	#VALUE!	
208 Pb	135.7	27.14	ppb	0.52	2000.	
232 Th	87.2	17.44	ppb	0.53	1000.	
238 U	14.575	2.915	ppb	1.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3427279.00	0.88	3440039.00	99.6	69.5 - 120	
45 Sc	3293741.80	0.56	3153680.00	104.4	69.5 - 120	
89 Y	4652467.50	0.64	4049389.00	114.9	69.5 - 120	
159 Tb	4506279.00	0.62	4277856.00	105.3	69.5 - 120	
209 Bi	2433256.30	0.29	2443113.00	99.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000227

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\082SMPL.D\082SMPL.D#
Date Acquired: Mar 20 2018 10:03 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.125	1.825	ppb	1.33	100.	
11 B	104.95	20.99	ppb	3.04	1000.	
23 Na	1,181.	236.2	ppb	0.41	200000.	
25 Mg	51,700.	10,340.	ppb	0.54	200000.	
27 Al	178,650.	35,730.	ppb	0.56	200000.	
28 Si	3,606.	721.2	ppb	1.23	#VALUE!	
29 Si	1,588.	317.6	ppb	48.36	10000.	
39 K	61,050.	12,210.	ppb	0.72	200000.	
43 Ca	59,850.	11,970.	ppb	1.27	#VALUE!	
44 Ca	60,150.	12,030.	ppb	0.28	200000.	
51 V	268.3	53.66	ppb	2.04	1000.	
52 Cr	170.	34.	ppb	1.84	2000.	
53 Cr	185.35	37.07	ppb	1.60	#VALUE!	
55 Mn	2,872.5	574.5	ppb	0.57	2000.	
56 Fe	153,500.	30,700.	ppb	1.73	#VALUE!	
57 Fe	149,400.	29,880.	ppb	1.31	100000.	
59 Co	65.3	13.06	ppb	2.15	1000.	
60 Ni	141.15	28.23	ppb	2.32	1000.	
63 Cu	595.5	119.1	ppb	2.06	#VALUE!	
65 Cu	598.	119.6	ppb	1.17	2000.	
66 Zn	1,114.5	222.9	ppb	1.86	2000.	
68 Zn	1,175.	235.	ppb	2.50	#VALUE!	
75 As	30.79	6.158	ppb	3.16	1000.	
82 Se	6.205	1.241	ppb	10.36	1000.	
88 Sr	556.	111.2	ppb	0.97	2000.	
98 Mo	5.08	1.016	ppb	5.11	1000.	
107 Ag	3.1335	0.6267	ppb	4.09	100.	
109 Ag	2.8965	0.5793	ppb	2.38	#VALUE!	
111 Cd	32.91	6.582	ppb	3.63	#VALUE!	
114 Cd	30.905	6.181	ppb	1.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	83.5	16.7	ppb	1.06	1000.	
120 Sn	83.1	16.62	ppb	0.84	#VALUE!	
121 Sb	3.41	0.682	ppb	0.97	#VALUE!	
123 Sb	3.4585	0.6917	ppb	2.45	1000.	
135 Ba	2,595.5	519.1	ppb	1.22	2000.	
137 Ba	2,634.	526.8	ppb	0.49	#VALUE!	
182 W	1.355	0.271	ppb	3.72	1000.	
203 Tl	3.091	0.6182	ppb	3.96	1000.	
205 Tl	3.084	0.6168	ppb	2.92	#VALUE!	
208 Pb	366.4	73.28	ppb	0.61	2000.	
232 Th	91.6	18.32	ppb	0.40	1000.	
238 U	24.215	4.843	ppb	0.85	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3452998.30	1.02	3440039.00	100.4	69.5 - 120	
45 Sc	3263206.00	0.48	3153680.00	103.5	69.5 - 120	
89 Y	4700217.00	1.37	4049389.00	116.1	69.5 - 120	
159 Tb	4462208.50	1.04	4277856.00	104.3	69.5 - 120	
209 Bi	2402341.00	0.45	2443113.00	98.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000228

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\083SMPL.D\083SMPL.D#
Date Acquired: Mar 20 2018 10:07 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019L
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.8775	0.3951	ppb	1.12	100.	
11 B	124.7	4.988	ppb	1.22	1000.	
23 Na	1,110.75	44.43	ppb	1.90	200000.	
25 Mg	55,600.	2,224.	ppb	2.13	200000.	
27 Al	188,450.	7,538.	ppb	0.97	200000.	
28 Si	4,145.	165.8	ppb	44.62	#VALUE!	
29 Si	-2,997.5	-119.9	ppb	24.04	10000.	LOW
39 K	64,300.	2,572.	ppb	0.70	200000.	
43 Ca	64,050.	2,562.	ppb	1.01	#VALUE!	
44 Ca	64,900.	2,596.	ppb	2.50	200000.	
51 V	309.5	12.38	ppb	0.74	1000.	
52 Cr	195.625	7.825	ppb	1.68	2000.	
53 Cr	208.375	8.335	ppb	1.77	#VALUE!	
55 Mn	3,422.5	136.9	ppb	1.00	2000.	
56 Fe	175,550.	7,022.	ppb	0.70	#VALUE!	
57 Fe	180,050.	7,202.	ppb	1.59	100000.	
59 Co	77.225	3.089	ppb	0.43	1000.	
60 Ni	165.95	6.638	ppb	3.11	1000.	
63 Cu	713.25	28.53	ppb	1.03	#VALUE!	
65 Cu	709.5	28.38	ppb	2.23	2000.	
66 Zn	1,351.75	54.07	ppb	0.97	2000.	
68 Zn	1,406.5	56.26	ppb	0.87	#VALUE!	
75 As	35.825	1.433	ppb	2.33	1000.	
82 Se	9.87	0.3948	ppb	109.50	1000.	
88 Sr	650.75	26.03	ppb	0.67	2000.	
98 Mo	5.8925	0.2357	ppb	6.03	1000.	
107 Ag	3.6625	0.1465	ppb	3.70	100.	
109 Ag	3.51	0.1404	ppb	1.55	#VALUE!	
111 Cd	36.9	1.476	ppb	2.95	#VALUE!	
114 Cd	36.9	1.476	ppb	3.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	86.975	3.479	ppb	0.05	1000.	
120 Sn	87.85	3.514	ppb	2.46	#VALUE!	
121 Sb	3.6	0.144	ppb	2.94	#VALUE!	
123 Sb	4.075	0.163	ppb	5.61	1000.	
135 Ba	2,705.	108.2	ppb	1.04	2000.	
137 Ba	2,690.	107.6	ppb	0.16	#VALUE!	
182 W	1.1248	0.045	ppb	6.82	1000.	
203 Tl	3.1875	0.1275	ppb	10.27	1000.	
205 Tl	3.135	0.1254	ppb	2.97	#VALUE!	
208 Pb	375.5	15.02	ppb	0.43	2000.	
232 Th	91.6	3.664	ppb	0.95	1000.	
238 U	24.61	0.9844	ppb	1.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3396607.00	1.03	3440039.00	98.7	69.5 - 120	
45 Sc	3251356.00	1.30	3153680.00	103.1	69.5 - 120	
89 Y	4240585.00	0.37	4049389.00	104.7	69.5 - 120	
159 Tb	4455184.50	1.24	4277856.00	104.1	69.5 - 120	
209 Bi	2483467.50	0.65	2443113.00	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000229

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\084SMPL.D\084SMPL.D#
Date Acquired: Mar 20 2018 10:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019A
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	20.94	4.188	ppb	2.82	100.	
11 B	333.	66.6	ppb	0.28	1000.	
23 Na	12,545.	2,509.	ppb	0.36	200000.	
25 Mg	50,150.	10,030.	ppb	0.86	200000.	
27 Al	173,950.	34,790.	ppb	0.77	200000.	
28 Si	10,050.	2,010.	ppb	4.37	#VALUE!	
29 Si	7,355.	1,471.	ppb	3.03	10000.	
39 K	71,400.	14,280.	ppb	0.39	200000.	
43 Ca	59,350.	11,870.	ppb	2.17	#VALUE!	
44 Ca	59,600.	11,920.	ppb	0.38	200000.	
51 V	325.85	65.17	ppb	0.56	1000.	
52 Cr	216.35	43.27	ppb	0.56	2000.	
53 Cr	234.7	46.94	ppb	0.63	#VALUE!	
55 Mn	2,819.	563.8	ppb	0.66	2000.	
56 Fe	150,450.	30,090.	ppb	0.52	#VALUE!	
57 Fe	147,000.	29,400.	ppb	0.82	100000.	
59 Co	73.7	14.74	ppb	0.91	1000.	
60 Ni	158.95	31.79	ppb	1.32	1000.	
63 Cu	614.	122.8	ppb	1.50	#VALUE!	
65 Cu	613.5	122.7	ppb	1.19	2000.	
66 Zn	1,195.5	239.1	ppb	0.83	2000.	
68 Zn	1,250.5	250.1	ppb	0.75	#VALUE!	
75 As	83.1	16.62	ppb	0.91	1000.	
82 Se	56.15	11.23	ppb	2.44	1000.	
88 Sr	600.	120.	ppb	1.24	2000.	
98 Mo	58.6	11.72	ppb	0.65	1000.	
107 Ag	13.62	2.724	ppb	1.60	100.	
109 Ag	13.68	2.736	ppb	1.93	#VALUE!	
111 Cd	42.2	8.44	ppb	0.96	#VALUE!	
114 Cd	39.74	7.948	ppb	1.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	140.45	28.09	ppb	0.51	1000.	
120 Sn	139.2	27.84	ppb	0.37	#VALUE!	
121 Sb	13.975	2.795	ppb	0.55	#VALUE!	
123 Sb	14.33	2.866	ppb	0.47	1000.	
135 Ba	2,548.	509.6	ppb	0.68	2000.	
137 Ba	2,588.	517.6	ppb	0.96	#VALUE!	
182 W	57.6	11.52	ppb	0.81	1000.	
203 Tl	14.04	2.808	ppb	3.41	1000.	
205 Tl	13.995	2.799	ppb	1.57	#VALUE!	
208 Pb	366.7	73.34	ppb	0.24	2000.	
232 Th	100.9	20.18	ppb	0.08	1000.	
238 U	36.165	7.233	ppb	1.02	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3350084.80	0.95	3440039.00	97.4	69.5 - 120	
45 Sc	3258589.30	0.51	3153680.00	103.3	69.5 - 120	
89 Y	4638324.00	0.05	4049389.00	114.5	69.5 - 120	
159 Tb	4447785.00	0.12	4277856.00	104.0	69.5 - 120	
209 Bi	2387012.80	0.52	2443113.00	97.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000230

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\085SMPL.D\085SMPL.D#
Date Acquired: Mar 20 2018 10:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019S
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	57.	11.4	ppb	2.36	100.	
11 B	581.	116.2	ppb	3.88	1000.	
23 Na	8,540.	1,708.	ppb	1.21	200000.	
25 Mg	57,500.	11,500.	ppb	0.54	200000.	
27 Al	212,350.	42,470.	ppb	0.53	200000.	
28 Si	4,400.	880.	ppb	2.54	#VALUE!	
29 Si	2,981.5	596.3	ppb	39.81	10000.	
39 K	75,500.	15,100.	ppb	1.20	200000.	
43 Ca	56,150.	11,230.	ppb	1.80	#VALUE!	
44 Ca	55,450.	11,090.	ppb	1.31	200000.	
51 V	799.	159.8	ppb	2.73	1000.	
52 Cr	388.45	77.69	ppb	2.85	2000.	
53 Cr	398.65	79.73	ppb	2.91	#VALUE!	
55 Mn	3,375.	675.	ppb	2.39	2000.	
56 Fe	163,650.	32,730.	ppb	2.45	#VALUE!	
57 Fe	159,300.	31,860.	ppb	2.81	100000.	
59 Co	524.	104.8	ppb	2.09	1000.	
60 Ni	587.	117.4	ppb	3.15	1000.	
63 Cu	824.5	164.9	ppb	1.68	#VALUE!	
65 Cu	825.5	165.1	ppb	2.90	2000.	
66 Zn	1,528.5	305.7	ppb	3.02	2000.	
68 Zn	1,654.	330.8	ppb	2.69	#VALUE!	
75 As	117.3	23.46	ppb	2.06	1000.	
82 Se	90.65	18.13	ppb	2.12	1000.	
88 Sr	1,007.5	201.5	ppb	0.97	2000.	
98 Mo	90.3	18.06	ppb	2.55	1000.	
107 Ag	48.26	9.652	ppb	1.99	100.	
109 Ag	47.7	9.54	ppb	2.23	#VALUE!	
111 Cd	254.75	50.95	ppb	2.57	#VALUE!	
114 Cd	253.9	50.78	ppb	2.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	574.5	114.9	ppb	2.56	1000.	
120 Sn	569.5	113.9	ppb	2.35	#VALUE!	
121 Sb	39.045	7.809	ppb	1.68	#VALUE!	
123 Sb	39.41	7.882	ppb	2.23	1000.	
135 Ba	4,826.5	965.3	ppb	1.70	2000.	
137 Ba	4,746.	949.2	ppb	1.72	#VALUE!	
182 W	53.9	10.78	ppb	3.45	1000.	
203 Tl	104.9	20.98	ppb	2.77	1000.	
205 Tl	105.55	21.11	ppb	2.09	#VALUE!	
208 Pb	451.	90.2	ppb	2.19	2000.	
232 Th	196.25	39.25	ppb	2.26	1000.	
238 U	131.85	26.37	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3547184.00	2.10	3440039.00	103.1	69.5 - 120	
45 Sc	3354555.50	0.55	3153680.00	106.4	69.5 - 120	
89 Y	4591228.00	2.00	4049389.00	113.4	69.5 - 120	
159 Tb	4412401.00	1.82	4277856.00	103.1	69.5 - 120	
209 Bi	2347430.30	1.57	2443113.00	96.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000231

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\086SMPL.D\086SMPL.D#
Date Acquired: Mar 20 2018 10:20 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019P
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	59.75	11.95	ppb	0.52	100.	
11 B	584.5	116.9	ppb	1.37	1000.	
23 Na	8,655.	1,731.	ppb	0.55	200000.	
25 Mg	60,200.	12,040.	ppb	0.34	200000.	
27 Al	219,600.	43,920.	ppb	0.94	200000.	
28 Si	3,601.	720.2	ppb	2.58	#VALUE!	
29 Si	3,058.5	611.7	ppb	4.46	10000.	
39 K	79,000.	15,800.	ppb	1.22	200000.	
43 Ca	65,200.	13,040.	ppb	1.83	#VALUE!	
44 Ca	65,050.	13,010.	ppb	1.55	200000.	
51 V	798.5	159.7	ppb	1.25	1000.	
52 Cr	395.75	79.15	ppb	1.40	2000.	
53 Cr	399.4	79.88	ppb	1.60	#VALUE!	
55 Mn	3,519.	703.8	ppb	1.81	2000.	
56 Fe	171,500.	34,300.	ppb	1.66	#VALUE!	
57 Fe	167,300.	33,460.	ppb	2.17	100000.	
59 Co	525.5	105.1	ppb	1.78	1000.	
60 Ni	596.5	119.3	ppb	1.20	1000.	
63 Cu	875.5	175.1	ppb	0.76	#VALUE!	
65 Cu	873.	174.6	ppb	2.14	2000.	
66 Zn	1,591.	318.2	ppb	1.86	2000.	
68 Zn	1,722.5	344.5	ppb	1.99	#VALUE!	
75 As	119.5	23.9	ppb	1.77	1000.	
82 Se	89.25	17.85	ppb	1.36	1000.	
88 Sr	1,042.	208.4	ppb	0.75	2000.	
98 Mo	88.85	17.77	ppb	0.93	1000.	
107 Ag	47.85	9.57	ppb	1.12	100.	
109 Ag	47.605	9.521	ppb	2.16	#VALUE!	
111 Cd	256.	51.2	ppb	1.46	#VALUE!	
114 Cd	252.55	50.51	ppb	1.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	574.5	114.9	ppb	1.45	1000.	
120 Sn	569.	113.8	ppb	1.37	#VALUE!	
121 Sb	38.895	7.779	ppb	1.16	#VALUE!	
123 Sb	39.105	7.821	ppb	1.74	1000.	
135 Ba	4,928.5	985.7	ppb	1.49	2000.	
137 Ba	4,835.5	967.1	ppb	0.83	#VALUE!	
182 W	52.15	10.43	ppb	1.11	1000.	
203 Tl	104.5	20.9	ppb	0.88	1000.	
205 Tl	105.	21.	ppb	0.89	#VALUE!	
208 Pb	478.	95.6	ppb	1.11	2000.	
232 Th	194.4	38.88	ppb	0.72	1000.	
238 U	133.15	26.63	ppb	0.43	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3509347.00	0.85	3440039.00	102.0	69.5 - 120	
45 Sc	3399422.80	0.47	3153680.00	107.8	69.5 - 120	
89 Y	4667893.50	0.99	4049389.00	115.3	69.5 - 120	
159 Tb	4492437.50	0.76	4277856.00	105.0	69.5 - 120	
209 Bi	2380619.80	0.15	2443113.00	97.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000232

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\087SMPL.D\087SMPL.D#
Date Acquired: Mar 20 2018 10:24 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0013	-0.0013	ppb	67.63	100.	
11 B	2.792	2.792	ppb	8.43	1000.	
23 Na	-0.193	-0.193	ppb	25.57	200000.	
25 Mg	0.5756	0.5756	ppb	49.46	200000.	
27 Al	1.493	1.493	ppb	23.55	200000.	
28 Si	183.2	183.2	ppb	36.22	#VALUE!	
29 Si	-41.16	-41.16	ppb	82.07	10000.	
39 K	-0.8114	-0.8114	ppb	38.85	200000.	
43 Ca	3.704	3.704	ppb	93.66	#VALUE!	
44 Ca	6.691	6.691	ppb	27.37	200000.	
51 V	-0.0436	-0.0436	ppb	17.06	1000.	
52 Cr	0.0038	0.0038	ppb	459.31	2000.	
53 Cr	0.0702	0.0702	ppb	191.09	#VALUE!	
55 Mn	0.0479	0.0479	ppb	9.82	2000.	
56 Fe	1.705	1.705	ppb	137.71	#VALUE!	
57 Fe	1.254	1.254	ppb	41.20	100000.	
59 Co	0.0043	0.0043	ppb	42.56	1000.	
60 Ni	-0.0008	-0.0008	ppb	273.12	1000.	
63 Cu	0.0105	0.0105	ppb	71.07	#VALUE!	
65 Cu	0.0222	0.0222	ppb	41.63	2000.	
66 Zn	-0.0037	-0.0037	ppb	1360.30	2000.	
68 Zn	-0.2033	-0.2033	ppb	123.95	#VALUE!	
75 As	-0.0237	-0.0237	ppb	240.89	1000.	
82 Se	0.0356	0.0356	ppb	555.81	1000.	
88 Sr	0.0048	0.0048	ppb	61.30	2000.	
98 Mo	0.0913	0.0913	ppb	3.71	1000.	
107 Ag	-0.0015	-0.0015	ppb	91.87	100.	
109 Ag	-0.0002	-0.0002	ppb	1326.90	#VALUE!	
111 Cd	-0.1617	-0.1617	ppb	6.47	#VALUE!	
114 Cd	-0.0014	-0.0014	ppb	126.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0561	0.0561	ppb	11.66	1000.	
120 Sn	0.0686	0.0686	ppb	29.19	#VALUE!	
121 Sb	0.0025	0.0025	ppb	185.93	#VALUE!	
123 Sb	0.0054	0.0054	ppb	94.41	1000.	
135 Ba	0.0404	0.0404	ppb	19.20	2000.	
137 Ba	0.0202	0.0202	ppb	73.81	#VALUE!	
182 W	-0.0005	-0.0005	ppb	216.03	1000.	
203 Tl	0.0021	0.0021	ppb	121.81	1000.	
205 Tl	0.0049	0.0049	ppb	31.37	#VALUE!	
208 Pb	0.0205	0.0205	ppb	1.49	2000.	
232 Th	0.0095	0.0095	ppb	23.98	1000.	
238 U	0.0021	0.0021	ppb	21.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3158669.30	0.62	3440039.00	91.8	69.5 - 120	
45 Sc	2957146.50	0.94	3153680.00	93.8	69.5 - 120	
89 Y	3803947.00	1.17	4049389.00	93.9	69.5 - 120	
159 Tb	4030870.30	0.18	4277856.00	94.2	69.5 - 120	
209 Bi	2288121.80	0.42	2443113.00	93.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000233

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\088_CCV.D\088_CCV.D#
Date Acquired: Mar 20 2018 10:28 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.22	ppb	1.47	25	100.88	
11 B	25.81	ppb	4.04	25	103.24	
23 Na	4,943.	ppb	1.44	5,000	98.86	
25 Mg	4,973.	ppb	0.97	5,000	99.46	
27 Al	493.2	ppb	1.59	500	98.64	
28 Si	555.9	ppb	10.71	500	111.18	
29 Si	280.7	ppb	73.67	500	56.14	Fail
39 K	5,061.	ppb	0.40	5,000	101.22	
43 Ca	4,985.	ppb	0.43	5,000	99.7	
44 Ca	5,160.	ppb	0.44	5,000	103.2	
51 V	25.3	ppb	1.10	25	101.2	
52 Cr	25.22	ppb	0.68	25	100.88	
53 Cr	25.58	ppb	1.40	25	102.32	
55 Mn	25.13	ppb	1.09	25	100.52	
56 Fe	5,120.	ppb	0.92	5,000	102.4	
57 Fe	5,218.	ppb	0.96	5,000	104.36	
59 Co	25.33	ppb	1.12	25	101.32	
60 Ni	25.48	ppb	0.73	25	101.92	
63 Cu	25.52	ppb	1.85	25	102.08	
65 Cu	25.27	ppb	0.61	25	101.08	
66 Zn	25.32	ppb	2.40	25	101.28	
68 Zn	25.39	ppb	0.39	25	101.56	
75 As	25.28	ppb	1.44	25	101.12	
82 Se	25.28	ppb	2.77	25	101.12	
88 Sr	24.81	ppb	0.99	25	99.24	
98 Mo	24.98	ppb	0.71	25	99.92	
107 Ag	25.16	ppb	1.62	25	100.64	
109 Ag	25.2	ppb	1.46	25	100.8	
111 Cd	24.93	ppb	0.99	25	99.72	
114 Cd	25.05	ppb	1.37	25	100.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.47	ppb	0.55	25	101.88	
120 Sn	25.34	ppb	1.21	25	101.36	
121 Sb	25.15	ppb	0.55	25	100.6	
123 Sb	25.3	ppb	0.78	25	101.2	
135 Ba	25.5	ppb	0.37	25	102	
137 Ba	25.34	ppb	0.70	25	101.36	
182 W	24.13	ppb	0.75	25	96.52	
203 Tl	24.56	ppb	0.72	25	98.24	
205 Tl	24.73	ppb	0.84	25	98.92	
208 Pb	24.72	ppb	0.97	25	98.88	
232 Th	24.62	ppb	0.72	25	98.48	
238 U	24.98	ppb	0.75	25	99.92	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3431409.00	2.03	3440039.00	99.7	80 - 120.4	
45 Sc	3237554.30	0.49	3153680.00	102.7	80 - 120.4	
89 Y	4130915.80	0.12	4049389.00	102.0	80 - 120.4	
159 Tb	4350006.50	0.69	4277856.00	101.7	80 - 120.4	
209 Bi	2423833.80	0.55	2443113.00	99.2	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000234

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\089_CCB.D\089_CCB.D#
Date Acquired: Mar 20 2018 10:32 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.002	ppb	28.48	1.00	
11 B	1.25	ppb	11.77	1.00	
23 Na	-0.7497	ppb	11.82	1.00	
25 Mg	0.3104	ppb	2.39	1.00	
27 Al	0.7123	ppb	11.58	1.00	
28 Si	134.8	ppb	25.94	1.00	
29 Si	-35.9	ppb	10.50	1.00	
39 K	-1.77	ppb	82.66	1.00	
43 Ca	-0.5435	ppb	624.66	1.00	
44 Ca	2.207	ppb	141.96	1.00	
51 V	0.0147	ppb	558.89	1.00	
52 Cr	0.0117	ppb	81.72	1.00	
53 Cr	0.7775	ppb	38.11	1.00	
55 Mn	0.037	ppb	6.66	1.00	
56 Fe	3.096	ppb	91.12	1.00	
57 Fe	1.337	ppb	96.49	1.00	
59 Co	0.0089	ppb	17.46	1.00	
60 Ni	-0.0023	ppb	130.04	1.00	
63 Cu	-0.0018	ppb	166.78	1.00	
65 Cu	0.0043	ppb	190.35	1.00	
66 Zn	0.0193	ppb	191.24	1.00	
68 Zn	0.044	ppb	100.07	1.00	
75 As	-0.1728	ppb	28.60	1.00	
82 Se	-0.1267	ppb	194.16	1.00	
88 Sr	0.0016	ppb	28.52	1.00	
98 Mo	0.0134	ppb	27.37	1.00	
107 Ag	0.0021	ppb	40.96	1.00	
109 Ag	0.0002	ppb	319.97	1.00	
111 Cd	-0.0878	ppb	33.24	1.00	
114 Cd	0.0006	ppb	317.88	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0478	ppb	47.79	1.00	
120 Sn	0.0473	ppb	25.29	1.00	
121 Sb	0.	ppb	42790.00	1.00	
123 Sb	-0.0001	ppb	4219.10	1.00	
135 Ba	0.0261	ppb	50.08	1.00	
137 Ba	0.021	ppb	37.59	1.00	
182 W	0.0139	ppb	5.46	1.00	
203 Tl	0.	ppb	152530.00	1.00	
205 Tl	0.005	ppb	40.15	1.00	
208 Pb	0.0065	ppb	69.14	1.00	
232 Th	0.0137	ppb	10.88	1.00	
238 U	0.0028	ppb	54.26	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3216818.00	1.30	3440039.00	93.5	79.5 - 120	
45 Sc	3029164.00	1.45	3153680.00	96.1	79.5 - 120	
89 Y	3809140.80	0.81	4049389.00	94.1	79.5 - 120	
159 Tb	4104076.30	0.83	4277856.00	95.9	79.5 - 120	
209 Bi	2299203.00	0.53	2443113.00	94.1	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\090SMPL.D\090SMPL.D#
Date Acquired: Mar 20 2018 10:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-021
Misc Info:
Vial Number: 2503
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.805	1.361	ppb	2.35	100.	
11 B	88.45	17.69	ppb	2.58	1000.	
23 Na	992.5	198.5	ppb	1.39	200000.	
25 Mg	36,790.	7,358.	ppb	0.16	200000.	
27 Al	139,700.	27,940.	ppb	0.95	200000.	
28 Si	4,037.	807.4	ppb	6.89	#VALUE!	
29 Si	1,521.	304.2	ppb	3.82	10000.	
39 K	44,275.	8,855.	ppb	0.66	200000.	
43 Ca	33,835.	6,767.	ppb	2.35	#VALUE!	
44 Ca	34,205.	6,841.	ppb	0.81	200000.	
51 V	229.5	45.9	ppb	1.96	1000.	
52 Cr	138.55	27.71	ppb	1.94	2000.	
53 Cr	159.85	31.97	ppb	3.25	#VALUE!	
55 Mn	2,579.	515.8	ppb	2.17	2000.	
56 Fe	118,300.	23,660.	ppb	2.30	#VALUE!	
57 Fe	115,700.	23,140.	ppb	1.60	100000.	
59 Co	53.45	10.69	ppb	1.77	1000.	
60 Ni	102.55	20.51	ppb	2.33	1000.	
63 Cu	214.65	42.93	ppb	3.22	#VALUE!	
65 Cu	215.6	43.12	ppb	2.10	2000.	
66 Zn	536.	107.2	ppb	2.58	2000.	
68 Zn	578.	115.6	ppb	3.32	#VALUE!	
75 As	29.3	5.86	ppb	3.89	1000.	
82 Se	5.19	1.038	ppb	10.27	1000.	
88 Sr	347.	69.4	ppb	0.42	2000.	
98 Mo	4.3245	0.8649	ppb	3.03	1000.	
107 Ag	1.9055	0.3811	ppb	1.44	100.	
109 Ag	1.783	0.3566	ppb	9.04	#VALUE!	
111 Cd	27.905	5.581	ppb	2.23	#VALUE!	
114 Cd	26.17	5.234	ppb	2.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.05	11.21	ppb	0.98	1000.	
120 Sn	55.45	11.09	ppb	1.11	#VALUE!	
121 Sb	2.341	0.4682	ppb	5.61	#VALUE!	
123 Sb	2.2915	0.4583	ppb	5.45	1000.	
135 Ba	1,735.5	347.1	ppb	0.70	2000.	
137 Ba	1,729.	345.8	ppb	1.15	#VALUE!	
182 W	1.148	0.2296	ppb	2.00	1000.	
203 Tl	2.3795	0.4759	ppb	2.06	1000.	
205 Tl	2.444	0.4888	ppb	2.30	#VALUE!	
208 Pb	236.7	47.34	ppb	1.24	2000.	
232 Th	75.3	15.06	ppb	0.91	1000.	
238 U	12.48	2.496	ppb	0.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3385019.30	2.14	3440039.00	98.4	69.5 - 120	
45 Sc	3211368.00	0.71	3153680.00	101.8	69.5 - 120	
89 Y	4484833.50	1.00	4049389.00	110.8	69.5 - 120	
159 Tb	4410813.50	1.28	4277856.00	103.1	69.5 - 120	
209 Bi	2392991.80	0.09	2443113.00	97.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000236

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\091SMPL.D\091SMPL.D#
Date Acquired: Mar 20 2018 10:41 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-022
Misc Info:
Vial Number: 2504
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.605	1.521	ppb	3.77	100.	
11 B	104.65	20.93	ppb	1.11	1000.	
23 Na	1,284.5	256.9	ppb	1.52	200000.	
25 Mg	46,855.	9,371.	ppb	1.74	200000.	
27 Al	154,450.	30,890.	ppb	2.06	200000.	
28 Si	4,154.5	830.9	ppb	11.45	#VALUE!	
29 Si	3,208.5	641.7	ppb	8.52	10000.	
39 K	56,200.	11,240.	ppb	0.93	200000.	
43 Ca	29,970.	5,994.	ppb	1.37	#VALUE!	
44 Ca	30,295.	6,059.	ppb	1.17	200000.	
51 V	246.75	49.35	ppb	1.02	1000.	
52 Cr	138.6	27.72	ppb	0.43	2000.	
53 Cr	159.45	31.89	ppb	1.45	#VALUE!	
55 Mn	2,934.	586.8	ppb	0.74	2000.	
56 Fe	126,800.	25,360.	ppb	1.00	#VALUE!	
57 Fe	124,850.	24,970.	ppb	0.50	100000.	
59 Co	60.3	12.06	ppb	0.63	1000.	
60 Ni	114.75	22.95	ppb	1.48	1000.	
63 Cu	214.	42.8	ppb	1.58	#VALUE!	
65 Cu	213.3	42.66	ppb	0.52	2000.	
66 Zn	523.	104.6	ppb	1.44	2000.	
68 Zn	571.5	114.3	ppb	2.46	#VALUE!	
75 As	25.71	5.142	ppb	1.66	1000.	
82 Se	5.415	1.083	ppb	4.87	1000.	
88 Sr	435.8	87.16	ppb	0.84	2000.	
98 Mo	7.845	1.569	ppb	3.21	1000.	
107 Ag	2.91	0.582	ppb	3.04	100.	
109 Ag	2.7805	0.5561	ppb	3.82	#VALUE!	
111 Cd	7.605	1.521	ppb	4.49	#VALUE!	
114 Cd	5.405	1.081	ppb	2.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.3	10.46	ppb	0.64	1000.	
120 Sn	52.25	10.45	ppb	1.53	#VALUE!	
121 Sb	2.2685	0.4537	ppb	2.62	#VALUE!	
123 Sb	2.245	0.449	ppb	7.77	1000.	
135 Ba	1,768.	353.6	ppb	1.02	2000.	
137 Ba	1,772.	354.4	ppb	1.07	#VALUE!	
182 W	0.9745	0.1949	ppb	1.86	1000.	
203 Tl	2.812	0.5624	ppb	5.76	1000.	
205 Tl	2.792	0.5584	ppb	0.90	#VALUE!	
208 Pb	169.45	33.89	ppb	1.30	2000.	
232 Th	90.9	18.18	ppb	0.95	1000.	
238 U	14.23	2.846	ppb	1.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3468715.80	0.90	3440039.00	100.8	69.5 - 120	
45 Sc	3278076.80	1.58	3153680.00	103.9	69.5 - 120	
89 Y	4570213.50	0.17	4049389.00	112.9	69.5 - 120	
159 Tb	4440579.50	0.46	4277856.00	103.8	69.5 - 120	
209 Bi	2397367.30	0.57	2443113.00	98.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000237

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\092SMPL.D\092SMPL.D#
Date Acquired: Mar 20 2018 10:45 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2505
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0003	-0.0003	ppb	696.20	100.	
11 B	0.7413	0.7413	ppb	11.25	1000.	
23 Na	-0.839	-0.839	ppb	18.01	200000.	
25 Mg	0.5624	0.5624	ppb	27.49	200000.	
27 Al	1.418	1.418	ppb	14.00	200000.	
28 Si	222.4	222.4	ppb	23.31	#VALUE!	
29 Si	15.89	15.89	ppb	109.69	10000.	
39 K	1.999	1.999	ppb	51.03	200000.	
43 Ca	2.739	2.739	ppb	129.90	#VALUE!	
44 Ca	4.283	4.283	ppb	104.51	200000.	
51 V	0.0153	0.0153	ppb	346.47	1000.	
52 Cr	-0.025	-0.025	ppb	66.08	2000.	
53 Cr	0.013	0.013	ppb	1214.90	#VALUE!	
55 Mn	0.0439	0.0439	ppb	20.73	2000.	
56 Fe	3.61	3.61	ppb	94.13	#VALUE!	
57 Fe	4.08	4.08	ppb	33.51	100000.	
59 Co	0.0038	0.0038	ppb	12.35	1000.	
60 Ni	-0.0033	-0.0033	ppb	149.28	1000.	
63 Cu	0.002	0.002	ppb	162.44	#VALUE!	
65 Cu	0.0005	0.0005	ppb	2396.00	2000.	
66 Zn	-0.0315	-0.0315	ppb	154.31	2000.	
68 Zn	-0.0385	-0.0385	ppb	346.15	#VALUE!	
75 As	-0.0793	-0.0793	ppb	166.25	1000.	
82 Se	0.1687	0.1687	ppb	119.50	1000.	
88 Sr	0.0076	0.0076	ppb	58.46	2000.	
98 Mo	0.0052	0.0052	ppb	78.33	1000.	
107 Ag	0.0008	0.0008	ppb	80.47	100.	
109 Ag	-0.0003	-0.0003	ppb	315.48	#VALUE!	
111 Cd	-0.1017	-0.1017	ppb	19.11	#VALUE!	
114 Cd	0.0028	0.0028	ppb	195.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0333	0.0333	ppb	56.00	1000.	
120 Sn	0.0608	0.0608	ppb	7.74	#VALUE!	
121 Sb	-0.0004	-0.0004	ppb	996.29	#VALUE!	
123 Sb	-0.0015	-0.0015	ppb	445.00	1000.	
135 Ba	0.0249	0.0249	ppb	29.92	2000.	
137 Ba	0.018	0.018	ppb	38.32	#VALUE!	
182 W	-0.0021	-0.0021	ppb	160.44	1000.	
203 Tl	0.0012	0.0012	ppb	103.10	1000.	
205 Tl	0.0046	0.0046	ppb	37.68	#VALUE!	
208 Pb	0.0039	0.0039	ppb	46.64	2000.	
232 Th	0.0078	0.0078	ppb	5.00	1000.	
238 U	0.001	0.001	ppb	43.61	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3155394.00	0.77	3440039.00	91.7	69.5 - 120	
45 Sc	2927731.30	1.62	3153680.00	92.8	69.5 - 120	
89 Y	3729420.30	1.11	4049389.00	92.1	69.5 - 120	
159 Tb	3970445.80	1.32	4277856.00	92.8	69.5 - 120	
209 Bi	2262699.50	0.63	2443113.00	92.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000238

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\093SMPL.D\093SMPL.D#
Date Acquired: Mar 20 2018 10:49 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2506
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0014	-0.0014	ppb	37.60	100.	
11 B	0.4483	0.4483	ppb	5.86	1000.	
23 Na	-0.7993	-0.7993	ppb	7.90	200000.	
25 Mg	0.4531	0.4531	ppb	2.20	200000.	
27 Al	1.226	1.226	ppb	2.96	200000.	
28 Si	136.8	136.8	ppb	31.87	#VALUE!	
29 Si	-16.98	-16.98	ppb	206.30	10000.	
39 K	-0.3992	-0.3992	ppb	377.51	200000.	
43 Ca	4.392	4.392	ppb	122.31	#VALUE!	
44 Ca	4.107	4.107	ppb	63.11	200000.	
51 V	-0.0291	-0.0291	ppb	168.66	1000.	
52 Cr	-0.0166	-0.0166	ppb	42.89	2000.	
53 Cr	0.2416	0.2416	ppb	52.36	#VALUE!	
55 Mn	0.0412	0.0412	ppb	5.42	2000.	
56 Fe	-0.4711	-0.4711	ppb	286.78	#VALUE!	
57 Fe	2.43	2.43	ppb	52.96	100000.	
59 Co	0.007	0.007	ppb	39.10	1000.	
60 Ni	-0.002	-0.002	ppb	126.97	1000.	
63 Cu	0.0032	0.0032	ppb	181.58	#VALUE!	
65 Cu	0.0165	0.0165	ppb	73.57	2000.	
66 Zn	-0.049	-0.049	ppb	116.37	2000.	
68 Zn	0.0046	0.0046	ppb	3127.20	#VALUE!	
75 As	0.0516	0.0516	ppb	183.62	1000.	
82 Se	0.3342	0.3342	ppb	9.49	1000.	
88 Sr	0.0043	0.0043	ppb	89.37	2000.	
98 Mo	0.	0.	ppb	9454.90	1000.	
107 Ag	-0.0009	-0.0009	ppb	226.74	100.	
109 Ag	-0.0012	-0.0012	ppb	49.77	#VALUE!	
111 Cd	-0.1054	-0.1054	ppb	25.04	#VALUE!	
114 Cd	0.0025	0.0025	ppb	66.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0388	0.0388	ppb	17.02	1000.	
120 Sn	0.042	0.042	ppb	24.20	#VALUE!	
121 Sb	-0.0021	-0.0021	ppb	190.49	#VALUE!	
123 Sb	-0.0018	-0.0018	ppb	132.85	1000.	
135 Ba	0.0362	0.0362	ppb	63.38	2000.	
137 Ba	0.0166	0.0166	ppb	47.94	#VALUE!	
182 W	-0.0041	-0.0041	ppb	73.56	1000.	
203 Tl	-0.001	-0.001	ppb	458.30	1000.	
205 Tl	0.0041	0.0041	ppb	33.39	#VALUE!	
208 Pb	0.0042	0.0042	ppb	123.57	2000.	
232 Th	0.0034	0.0034	ppb	11.88	1000.	
238 U	0.0002	0.0002	ppb	124.29	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3197243.00	1.21	3440039.00	92.9	69.5 - 120	
45 Sc	2966841.00	0.30	3153680.00	94.1	69.5 - 120	
89 Y	3841377.80	0.47	4049389.00	94.9	69.5 - 120	
159 Tb	4056497.80	1.48	4277856.00	94.8	69.5 - 120	
209 Bi	2296389.50	0.51	2443113.00	94.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000239

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\094SMPL.D\094SMPL.D#
Date Acquired: Mar 20 2018 10:53 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLC19IMW2
Misc Info:
Vial Number: 2507
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0042	-0.0008	ppb	115.12	100.	
11 B	1.7845	0.3569	ppb	9.80	1000.	
23 Na	12.93	2.586	ppb	1.87	200000.	
25 Mg	6.48	1.296	ppb	6.05	200000.	
27 Al	8.285	1.657	ppb	5.56	200000.	
28 Si	240.6	48.12	ppb	22.28	#VALUE!	
29 Si	-283.3	-56.66	ppb	4.90	10000.	
39 K	-6.88	-1.376	ppb	67.16	200000.	
43 Ca	10.125	2.025	ppb	257.58	#VALUE!	
44 Ca	3.8625	0.7725	ppb	77.15	200000.	
51 V	-0.4976	-0.0995	ppb	59.06	1000.	
52 Cr	0.6645	0.1329	ppb	19.17	2000.	
53 Cr	39.475	7.895	ppb	1.57	#VALUE!	
55 Mn	0.3366	0.0673	ppb	12.09	2000.	
56 Fe	5.475	1.095	ppb	143.74	#VALUE!	
57 Fe	14.435	2.887	ppb	56.60	100000.	
59 Co	0.0413	0.0083	ppb	35.09	1000.	
60 Ni	0.0319	0.0064	ppb	117.18	1000.	
63 Cu	0.0707	0.0141	ppb	20.67	#VALUE!	
65 Cu	0.1101	0.022	ppb	19.06	2000.	
66 Zn	0.0984	0.0197	ppb	131.76	2000.	
68 Zn	-0.6895	-0.1379	ppb	92.24	#VALUE!	
75 As	0.0531	0.0106	ppb	2803.20	1000.	
82 Se	1.199	0.2398	ppb	79.48	1000.	
88 Sr	0.0211	0.0042	ppb	48.05	2000.	
98 Mo	0.0085	0.0017	ppb	39.56	1000.	
107 Ag	0.0138	0.0028	ppb	54.38	100.	
109 Ag	-0.0012	-0.0002	ppb	988.44	#VALUE!	
111 Cd	-0.517	-0.1034	ppb	15.06	#VALUE!	
114 Cd	0.0059	0.0012	ppb	267.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.541	0.3082	ppb	2.72	1000.	
120 Sn	1.5275	0.3055	ppb	1.16	#VALUE!	
121 Sb	0.1158	0.0232	ppb	18.94	#VALUE!	
123 Sb	0.1035	0.0207	ppb	8.10	1000.	
135 Ba	0.2375	0.0475	ppb	41.55	2000.	
137 Ba	0.2072	0.0414	ppb	16.95	#VALUE!	
182 W	0.0235	0.0047	ppb	46.93	1000.	
203 Tl	-0.0178	-0.0036	ppb	105.98	1000.	
205 Tl	0.0071	0.0014	ppb	121.27	#VALUE!	
208 Pb	0.0288	0.0058	ppb	16.90	2000.	
232 Th	0.0408	0.0082	ppb	39.05	1000.	
238 U	0.0021	0.0004	ppb	172.85	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3250986.30	0.93	3440039.00	94.5	69.5 - 120	
45 Sc	3002209.00	0.79	3153680.00	95.2	69.5 - 120	
89 Y	3865037.00	1.07	4049389.00	95.4	69.5 - 120	
159 Tb	4141226.50	0.92	4277856.00	96.8	69.5 - 120	
209 Bi	2322776.80	0.79	2443113.00	95.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000240

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\095SMPL.D\095SMPL.D#
Date Acquired: Mar 20 2018 10:58 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLC19IMW2
Misc Info:
Vial Number: 2508
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	53.45	10.69	ppb	1.94	100.	
11 B	525.	105.	ppb	2.49	1000.	
23 Na	8,055.	1,611.	ppb	0.56	200000.	
25 Mg	5,780.	1,156.	ppb	1.96	200000.	
27 Al	2,238.	447.6	ppb	1.79	200000.	
28 Si	1,532.	306.4	ppb	18.88	#VALUE!	
29 Si	294.5	58.9	ppb	77.03	10000.	
39 K	10,860.	2,172.	ppb	0.45	200000.	
43 Ca	3,095.5	619.1	ppb	4.23	#VALUE!	
44 Ca	2,790.	558.	ppb	0.83	200000.	
51 V	569.5	113.9	ppb	1.89	1000.	
52 Cr	219.8	43.96	ppb	3.09	2000.	
53 Cr	253.85	50.77	ppb	2.82	#VALUE!	
55 Mn	560.	112.	ppb	2.07	2000.	
56 Fe	1,089.	217.8	ppb	3.62	#VALUE!	
57 Fe	1,118.5	223.7	ppb	4.93	100000.	
59 Co	572.	114.4	ppb	3.37	1000.	
60 Ni	563.	112.6	ppb	2.36	1000.	
63 Cu	276.2	55.24	ppb	1.99	#VALUE!	
65 Cu	277.	55.4	ppb	2.32	2000.	
66 Zn	540.5	108.1	ppb	2.16	2000.	
68 Zn	613.5	122.7	ppb	1.77	#VALUE!	
75 As	110.9	22.18	ppb	2.09	1000.	
82 Se	108.15	21.63	ppb	2.71	1000.	
88 Sr	563.5	112.7	ppb	2.50	2000.	
98 Mo	112.65	22.53	ppb	2.11	1000.	
107 Ag	56.2	11.24	ppb	2.31	100.	
109 Ag	56.2	11.24	ppb	0.87	#VALUE!	
111 Cd	278.35	55.67	ppb	2.04	#VALUE!	
114 Cd	278.45	55.69	ppb	2.23	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	545.5	109.1	ppb	0.65	1000.	
120 Sn	544.	108.8	ppb	1.33	#VALUE!	
121 Sb	111.3	22.26	ppb	0.69	#VALUE!	
123 Sb	112.05	22.41	ppb	0.38	1000.	
135 Ba	2,263.	452.6	ppb	0.64	2000.	
137 Ba	2,242.	448.4	ppb	0.24	#VALUE!	
182 W	106.15	21.23	ppb	1.11	1000.	
203 Tl	107.9	21.58	ppb	1.26	1000.	
205 Tl	109.9	21.98	ppb	0.74	#VALUE!	
208 Pb	110.95	22.19	ppb	0.30	2000.	
232 Th	110.9	22.18	ppb	0.56	1000.	
238 U	113.	22.6	ppb	0.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3348875.30	1.41	3440039.00	97.3	69.5 - 120	
45 Sc	3011647.80	1.58	3153680.00	95.5	69.5 - 120	
89 Y	3950733.80	1.68	4049389.00	97.6	69.5 - 120	
159 Tb	4246243.00	0.81	4277856.00	99.3	69.5 - 120	
209 Bi	2334894.30	0.56	2443113.00	95.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000241

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\096SMPL.D\096SMPL.D#
Date Acquired: Mar 20 2018 11:02 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-020
Misc Info:
Vial Number: 2509
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0036	-0.0007	ppb	261.08	100.	
11 B	9.57	1.914	ppb	8.34	1000.	
23 Na	43.315	8.663	ppb	1.09	200000.	
25 Mg	12.75	2.55	ppb	13.81	200000.	
27 Al	12.495	2.499	ppb	0.51	200000.	
28 Si	760.	152.	ppb	45.36	#VALUE!	
29 Si	-57.85	-11.57	ppb	148.06	10000.	
39 K	10.87	2.174	ppb	32.71	200000.	
43 Ca	74.2	14.84	ppb	19.44	#VALUE!	
44 Ca	82.25	16.45	ppb	20.75	200000.	
51 V	0.2196	0.0439	ppb	169.67	1000.	
52 Cr	0.715	0.143	ppb	16.41	2000.	
53 Cr	36.975	7.395	ppb	1.65	#VALUE!	
55 Mn	0.6885	0.1377	ppb	5.31	2000.	
56 Fe	24.015	4.803	ppb	13.65	#VALUE!	
57 Fe	31.395	6.279	ppb	13.38	100000.	
59 Co	0.054	0.0108	ppb	34.74	1000.	
60 Ni	0.0981	0.0196	ppb	55.81	1000.	
63 Cu	0.2267	0.0453	ppb	7.42	#VALUE!	
65 Cu	0.1998	0.04	ppb	27.55	2000.	
66 Zn	0.832	0.1664	ppb	48.74	2000.	
68 Zn	-0.4219	-0.0844	ppb	162.50	#VALUE!	
75 As	0.3054	0.0611	ppb	274.28	1000.	
82 Se	1.0055	0.2011	ppb	147.89	1000.	
88 Sr	0.312	0.0624	ppb	14.80	2000.	
98 Mo	0.0749	0.015	ppb	20.15	1000.	
107 Ag	-0.0033	-0.0007	ppb	134.42	100.	
109 Ag	0.0012	0.0002	ppb	297.41	#VALUE!	
111 Cd	-0.5965	-0.1193	ppb	27.59	#VALUE!	
114 Cd	-0.0149	-0.003	ppb	148.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.8615	0.3723	ppb	7.64	1000.	
120 Sn	1.883	0.3766	ppb	4.82	#VALUE!	
121 Sb	0.1787	0.0357	ppb	11.84	#VALUE!	
123 Sb	0.1264	0.0253	ppb	15.06	1000.	
135 Ba	0.2693	0.0539	ppb	28.45	2000.	
137 Ba	0.2497	0.0499	ppb	15.66	#VALUE!	
182 W	0.0892	0.0178	ppb	39.89	1000.	
203 Tl	0.022	0.0044	ppb	82.77	1000.	
205 Tl	0.0088	0.0018	ppb	128.82	#VALUE!	
208 Pb	0.0362	0.0072	ppb	36.54	2000.	
232 Th	0.1176	0.0235	ppb	63.25	1000.	
238 U	0.0076	0.0015	ppb	113.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3126561.50	1.86	3440039.00	90.9	69.5 - 120	
45 Sc	2911021.30	1.17	3153680.00	92.3	69.5 - 120	
89 Y	3795402.00	0.20	4049389.00	93.7	69.5 - 120	
159 Tb	4043304.00	0.72	4277856.00	94.5	69.5 - 120	
209 Bi	2260876.00	0.56	2443113.00	92.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000242

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\097SMPL.D\097SMPL.D#
Date Acquired: Mar 20 2018 11:06 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2138-011
Misc Info:
Vial Number: 2510
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0169	-0.0034	ppb	8.16	100.	
11 B	5.53	1.106	ppb	6.63	1000.	
23 Na	38.685	7.737	ppb	3.74	200000.	
25 Mg	8.665	1.733	ppb	6.61	200000.	
27 Al	9.17	1.834	ppb	10.15	200000.	
28 Si	710.5	142.1	ppb	35.01	#VALUE!	
29 Si	73.2	14.64	ppb	162.70	10000.	
39 K	20.82	4.164	ppb	31.10	200000.	
43 Ca	40.21	8.042	ppb	39.47	#VALUE!	
44 Ca	34.605	6.921	ppb	15.22	200000.	
51 V	0.2045	0.0409	ppb	154.71	1000.	
52 Cr	0.647	0.1294	ppb	18.33	2000.	
53 Cr	38.03	7.606	ppb	1.44	#VALUE!	
55 Mn	0.4505	0.0901	ppb	6.77	2000.	
56 Fe	34.78	6.956	ppb	15.61	#VALUE!	
57 Fe	6.89	1.378	ppb	233.24	100000.	
59 Co	0.0437	0.0087	ppb	11.90	1000.	
60 Ni	0.05	0.01	ppb	76.10	1000.	
63 Cu	0.2638	0.0528	ppb	2.01	#VALUE!	
65 Cu	0.2585	0.0517	ppb	11.58	2000.	
66 Zn	1.02	0.204	ppb	19.18	2000.	
68 Zn	0.1539	0.0308	ppb	328.57	#VALUE!	
75 As	-0.4354	-0.0871	ppb	283.30	1000.	
82 Se	0.8965	0.1793	ppb	115.00	1000.	
88 Sr	0.1552	0.031	ppb	5.67	2000.	
98 Mo	0.0067	0.0013	ppb	136.24	1000.	
107 Ag	0.0098	0.002	ppb	131.60	100.	
109 Ag	-0.0016	-0.0003	ppb	680.92	#VALUE!	
111 Cd	-0.4908	-0.0982	ppb	7.42	#VALUE!	
114 Cd	-0.0012	-0.0002	ppb	2320.20	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.835	0.367	ppb	4.10	1000.	
120 Sn	1.832	0.3664	ppb	9.66	#VALUE!	
121 Sb	0.1798	0.036	ppb	13.19	#VALUE!	
123 Sb	0.1701	0.034	ppb	31.99	1000.	
135 Ba	0.2274	0.0455	ppb	21.48	2000.	
137 Ba	0.2372	0.0474	ppb	11.28	#VALUE!	
182 W	0.0118	0.0024	ppb	59.19	1000.	
203 Tl	0.0063	0.0013	ppb	433.39	1000.	
205 Tl	0.0163	0.0033	ppb	27.41	#VALUE!	
208 Pb	0.0167	0.0033	ppb	45.77	2000.	
232 Th	0.0479	0.0096	ppb	19.88	1000.	
238 U	0.0061	0.0012	ppb	75.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3096383.30	0.91	3440039.00	90.0	69.5 - 120	
45 Sc	2873953.50	1.35	3153680.00	91.1	69.5 - 120	
89 Y	3753260.00	1.02	4049389.00	92.7	69.5 - 120	
159 Tb	4022019.00	0.94	4277856.00	94.0	69.5 - 120	
209 Bi	2254463.50	0.62	2443113.00	92.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000243

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\098SMPL.D\098SMPL.D#
Date Acquired: Mar 20 2018 11:10 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2138-012
Misc Info:
Vial Number: 2511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0002	0.	ppb	1111.30	100.	
11 B	3.41	0.682	ppb	1.70	1000.	
23 Na	85.65	17.13	ppb	1.16	200000.	
25 Mg	12.195	2.439	ppb	6.11	200000.	
27 Al	9.045	1.809	ppb	13.98	200000.	
28 Si	608.5	121.7	ppb	60.58	#VALUE!	
29 Si	4.9655	0.9931	ppb	3508.20	10000.	
39 K	113.3	22.66	ppb	6.40	200000.	
43 Ca	35.795	7.159	ppb	87.67	#VALUE!	
44 Ca	51.65	10.33	ppb	4.05	200000.	
51 V	0.7405	0.1481	ppb	44.12	1000.	
52 Cr	0.825	0.165	ppb	9.67	2000.	
53 Cr	35.575	7.115	ppb	2.37	#VALUE!	
55 Mn	0.4369	0.0874	ppb	9.80	2000.	
56 Fe	21.87	4.374	ppb	84.75	#VALUE!	
57 Fe	24.03	4.806	ppb	21.91	100000.	
59 Co	0.0493	0.0099	ppb	39.41	1000.	
60 Ni	0.1429	0.0286	ppb	68.30	1000.	
63 Cu	1.0245	0.2049	ppb	5.92	#VALUE!	
65 Cu	1.092	0.2184	ppb	12.73	2000.	
66 Zn	1.313	0.2626	ppb	9.44	2000.	
68 Zn	0.4964	0.0993	ppb	140.81	#VALUE!	
75 As	-0.3325	-0.0665	ppb	332.33	1000.	
82 Se	0.9245	0.1849	ppb	136.56	1000.	
88 Sr	0.1919	0.0384	ppb	12.42	2000.	
98 Mo	0.0071	0.0014	ppb	268.61	1000.	
107 Ag	0.0035	0.0007	ppb	293.93	100.	
109 Ag	0.0033	0.0007	ppb	170.27	#VALUE!	
111 Cd	-0.568	-0.1136	ppb	44.71	#VALUE!	
114 Cd	-0.0026	-0.0005	ppb	768.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.7465	0.3493	ppb	9.07	1000.	
120 Sn	1.826	0.3652	ppb	7.53	#VALUE!	
121 Sb	0.2326	0.0465	ppb	17.78	#VALUE!	
123 Sb	0.197	0.0394	ppb	10.75	1000.	
135 Ba	0.328	0.0656	ppb	16.42	2000.	
137 Ba	0.1851	0.037	ppb	32.69	#VALUE!	
182 W	0.0659	0.0132	ppb	49.31	1000.	
203 Tl	0.0088	0.0018	ppb	43.32	1000.	
205 Tl	0.0161	0.0032	ppb	87.43	#VALUE!	
208 Pb	0.0563	0.0113	ppb	25.47	2000.	
232 Th	0.0304	0.0061	ppb	5.51	1000.	
238 U	0.0028	0.0006	ppb	233.51	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3088955.80	1.81	3440039.00	89.8	69.5 - 120	
45 Sc	2890386.00	0.62	3153680.00	91.7	69.5 - 120	
89 Y	3806182.80	0.98	4049389.00	94.0	69.5 - 120	
159 Tb	4014027.80	2.06	4277856.00	93.8	69.5 - 120	
209 Bi	2231098.30	1.25	2443113.00	91.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000244

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\099SMPL.D\099SMPL.D#
Date Acquired: Mar 20 2018 11:14 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0012	-0.0012	ppb	48.17	100.	
11 B	0.3126	0.3126	ppb	24.71	1000.	
23 Na	-0.074	-0.074	ppb	117.68	200000.	
25 Mg	0.3535	0.3535	ppb	28.26	200000.	
27 Al	1.316	1.316	ppb	1.95	200000.	
28 Si	200.7	200.7	ppb	41.53	#VALUE!	
29 Si	4.426	4.426	ppb	646.41	10000.	
39 K	1.03	1.03	ppb	173.98	200000.	
43 Ca	-2.054	-2.054	ppb	82.52	#VALUE!	
44 Ca	3.674	3.674	ppb	39.77	200000.	
51 V	-0.0494	-0.0494	ppb	78.07	1000.	
52 Cr	0.0132	0.0132	ppb	52.28	2000.	
53 Cr	0.7785	0.7785	ppb	14.80	#VALUE!	
55 Mn	0.1978	0.1978	ppb	4.79	2000.	
56 Fe	1.067	1.067	ppb	373.85	#VALUE!	
57 Fe	2.561	2.561	ppb	71.77	100000.	
59 Co	0.009	0.009	ppb	42.03	1000.	
60 Ni	0.0004	0.0004	ppb	1644.10	1000.	
63 Cu	0.0048	0.0048	ppb	88.74	#VALUE!	
65 Cu	0.0209	0.0209	ppb	16.80	2000.	
66 Zn	0.3246	0.3246	ppb	5.66	2000.	
68 Zn	0.3329	0.3329	ppb	64.46	#VALUE!	
75 As	0.0043	0.0043	ppb	1253.10	1000.	
82 Se	-0.1269	-0.1269	ppb	249.57	1000.	
88 Sr	0.0052	0.0052	ppb	68.58	2000.	
98 Mo	-0.0001	-0.0001	ppb	8016.50	1000.	
107 Ag	0.0013	0.0013	ppb	252.52	100.	
109 Ag	-0.0002	-0.0002	ppb	1043.60	#VALUE!	
111 Cd	-0.0841	-0.0841	ppb	15.00	#VALUE!	
114 Cd	0.0029	0.0029	ppb	238.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0477	0.0477	ppb	44.00	1000.	
120 Sn	0.0549	0.0549	ppb	30.61	#VALUE!	
121 Sb	0.0016	0.0016	ppb	122.65	#VALUE!	
123 Sb	0.0009	0.0009	ppb	414.70	1000.	
135 Ba	0.0268	0.0268	ppb	49.59	2000.	
137 Ba	0.0188	0.0188	ppb	28.80	#VALUE!	
182 W	-0.0087	-0.0087	ppb	41.59	1000.	
203 Tl	-0.0013	-0.0013	ppb	202.99	1000.	
205 Tl	0.0026	0.0026	ppb	44.42	#VALUE!	
208 Pb	0.0034	0.0034	ppb	55.43	2000.	
232 Th	0.0004	0.0004	ppb	135.16	1000.	
238 U	0.001	0.001	ppb	57.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3204464.00	0.98	3440039.00	93.2	69.5 - 120	
45 Sc	2950976.50	1.51	3153680.00	93.6	69.5 - 120	
89 Y	3790285.30	1.26	4049389.00	93.6	69.5 - 120	
159 Tb	4045243.80	1.82	4277856.00	94.6	69.5 - 120	
209 Bi	2267618.00	1.89	2443113.00	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000245

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\100_CCV.D\100_CCV.D#
Date Acquired: Mar 20 2018 11:18 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.25	ppb	2.03	25	101	
11 B	24.6	ppb	3.99	25	98.4	
23 Na	4,909.	ppb	3.01	5,000	98.18	
25 Mg	4,942.	ppb	1.31	5,000	98.84	
27 Al	491.4	ppb	1.29	500	98.28	
28 Si	612.3	ppb	9.81	500	122.46	
29 Si	340.2	ppb	63.90	500	68.04	Fail
39 K	4,986.	ppb	1.58	5,000	99.72	
43 Ca	4,939.	ppb	1.83	5,000	98.78	
44 Ca	5,161.	ppb	1.28	5,000	103.22	
51 V	25.23	ppb	1.70	25	100.92	
52 Cr	25.17	ppb	1.73	25	100.68	
53 Cr	25.18	ppb	0.43	25	100.72	
55 Mn	25.12	ppb	0.80	25	100.48	
56 Fe	5,059.	ppb	1.00	5,000	101.18	
57 Fe	5,205.	ppb	1.44	5,000	104.1	
59 Co	24.97	ppb	1.00	25	99.88	
60 Ni	25.35	ppb	0.50	25	101.4	
63 Cu	25.18	ppb	0.84	25	100.72	
65 Cu	25.27	ppb	0.29	25	101.08	
66 Zn	25.02	ppb	1.66	25	100.08	
68 Zn	24.88	ppb	1.66	25	99.52	
75 As	25.12	ppb	0.70	25	100.48	
82 Se	25.31	ppb	0.89	25	101.24	
88 Sr	24.91	ppb	1.77	25	99.64	
98 Mo	25.09	ppb	1.21	25	100.36	
107 Ag	25.44	ppb	1.06	25	101.76	
109 Ag	25.27	ppb	1.15	25	101.08	
111 Cd	25.12	ppb	2.01	25	100.48	
114 Cd	25.11	ppb	1.77	25	100.44	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.35	ppb	1.29	25	101.4	
120 Sn	25.25	ppb	2.14	25	101	
121 Sb	25.03	ppb	1.14	25	100.12	
123 Sb	25.24	ppb	2.48	25	100.96	
135 Ba	25.17	ppb	2.02	25	100.68	
137 Ba	25.34	ppb	2.60	25	101.36	
182 W	24.12	ppb	2.14	25	96.48	
203 Tl	24.71	ppb	1.89	25	98.84	
205 Tl	24.68	ppb	0.98	25	98.72	
208 Pb	24.56	ppb	1.41	25	98.24	
232 Th	24.43	ppb	1.59	25	97.72	
238 U	25.02	ppb	1.92	25	100.08	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3317174.30	1.02	3440039.00	96.4	80 - 120.4	
45 Sc	3174921.50	0.99	3153680.00	100.7	80 - 120.4	
89 Y	4052197.80	0.53	4049389.00	100.1	80 - 120.4	
159 Tb	4285852.00	1.22	4277856.00	100.2	80 - 120.4	
209 Bi	2380308.80	0.50	2443113.00	97.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000246

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC20C.B\101_CCB.D\101_CCB.D#
Date Acquired: Mar 20 2018 11:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 20 2018 05:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0012	ppb	111.30	1.00	
11 B	0.5162	ppb	2.61	1.00	
23 Na	-0.6489	ppb	33.47	1.00	
25 Mg	0.4314	ppb	11.65	1.00	
27 Al	0.8712	ppb	8.35	1.00	
28 Si	117.1	ppb	85.40	1.00	
29 Si	-49.52	ppb	96.18	1.00	
39 K	-2.169	ppb	72.11	1.00	
43 Ca	-2.708	ppb	113.07	1.00	
44 Ca	-0.0923	ppb	846.32	1.00	
51 V	0.0239	ppb	159.64	1.00	
52 Cr	-0.007	ppb	122.98	1.00	
53 Cr	0.5179	ppb	29.43	1.00	
55 Mn	0.0378	ppb	12.25	1.00	
56 Fe	1.283	ppb	130.16	1.00	
57 Fe	2.152	ppb	56.65	1.00	
59 Co	0.0091	ppb	10.99	1.00	
60 Ni	0.0008	ppb	783.74	1.00	
63 Cu	0.0055	ppb	64.07	1.00	
65 Cu	0.0063	ppb	212.27	1.00	
66 Zn	0.0922	ppb	43.56	1.00	
68 Zn	0.1142	ppb	40.47	1.00	
75 As	0.0098	ppb	124.63	1.00	
82 Se	0.0661	ppb	338.12	1.00	
88 Sr	0.0055	ppb	65.93	1.00	
98 Mo	0.0099	ppb	39.40	1.00	
107 Ag	0.0012	ppb	170.34	1.00	
109 Ag	0.0014	ppb	136.96	1.00	
111 Cd	-0.0427	ppb	41.37	1.00	
114 Cd	-0.0004	ppb	546.16	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0477	ppb	3.22	1.00	
120 Sn	0.0612	ppb	11.04	1.00	
121 Sb	0.	ppb	178300.00	1.00	
123 Sb	0.0013	ppb	162.37	1.00	
135 Ba	0.0333	ppb	11.91	1.00	
137 Ba	0.016	ppb	18.55	1.00	
182 W	0.0116	ppb	55.51	1.00	
203 Tl	0.0016	ppb	365.86	1.00	
205 Tl	0.0069	ppb	3.46	1.00	
208 Pb	0.0016	ppb	86.02	1.00	
232 Th	0.012	ppb	12.83	1.00	
238 U	0.0035	ppb	47.07	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3270437.80	2.46	3440039.00	95.1	79.5 - 120	
45 Sc	3038803.50	1.45	3153680.00	96.4	79.5 - 120	
89 Y	3869546.50	1.46	4049389.00	95.6	79.5 - 120	
159 Tb	4112127.00	0.72	4277856.00	96.1	79.5 - 120	
209 Bi	2327256.50	0.62	2443113.00	95.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC20C.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 03/21/2018

FILE NAME: JLC21A **METHOD: ICP-MS**

- ☐ 200.8
- ☑ 6020
- ☑ DOD

REVIEWED
JS 3.22.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by _____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17623	03/21/2018	03/21/2019	0 ug/L
Standard 1	MW17625	03/21/2018	04/26/2018	Varies by Element
ICV	MW17628	03/21/2018	06/21/2018	Varies by Element
PQL	MW17629	03/21/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17570	02/16/2018	05/14/2018	Varies by Element
ICSA	MW17630	03/21/2018	03/27/2018	Varies by Element
ICSAB	MW17631	03/21/2018	03/27/2018	Varies by Element
CCV	MW17626	03/21/2018	04/26/2018	Varies by Element
Internal Standard	MW17585	02/22/2018	05/22/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

JS 3.22.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17623 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17623(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL ofMW17623(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC21A	3/21/2018	2:49:00 14:00	MD
200.8 TUNE	1	JLC21A	3/21/2018	2:49:00 14:03	MD
Cal Blank	1	JLC21A	3/21/2018	2:49:00 14:49	MD
Cal Std 6	1	JLC21A	3/21/2018	2:53:00 14:53	MD
ICV	1	JLC21A	3/21/2018	2:56:00 14:56	MD
ICB	1	JLC21A	3/21/2018	3:00:00 15:00	MD
PQL	1	JLC21A	3/21/2018	3:03:00 15:03	MD
RINSE	1	JLC21A	3/21/2018	3:07:00 15:07	MD
ICSA	1	JLC21A	3/21/2018	3:11:00 15:11	MD
ICSAB	1	JLC21A	3/21/2018	3:15:00 15:15	MD
RINSE	1	JLC21A	3/21/2018	3:18:00 15:18	MD
LRS1	1	JLC21A	3/21/2018	3:22:00 15:22	MD
LRS2	1	JLC21A	3/21/2018	3:25:00 15:25	MD
RINSE	1	JLC21A	3/21/2018	3:29:00 15:29	MD
RINSE	1	JLC21A	3/21/2018	3:33:00 15:33	MD
CCV	1	JLC21A	3/21/2018	3:37:00 15:37	MD
CCB	1	JLC21A	3/21/2018	3:40:00 15:40	MD
SL2079-001	5	JLC21A	3/21/2018	3:44:00 15:44	MD
SL2079-001	10	JLC21A	3/21/2018	3:48:00 15:48	MD
SL2079-002	5	JLC21A	3/21/2018	3:52:00 15:52	MD
SL2079-002	10	JLC21A	3/21/2018	3:56:00 15:56	MD
SL2133-001	5	JLC21A	3/21/2018	4:00:00 16:00	MD
SL2133-001	10	JLC21A	3/21/2018	4:04:00 16:04	MD
SL2133-004	10	JLC21A	3/21/2018	4:08:00 16:08	MD
SL2133-005	5	JLC21A	3/21/2018	4:11:00 16:11	MD
SL2133-005	10	JLC21A	3/21/2018	4:15:00 16:15	MD
RINSE	1	JLC21A	3/21/2018	4:19:00 16:19	MD
CCV	1	JLC21A	3/21/2018	4:23:00 16:23	MD
CCB	1	JLC21A	3/21/2018	4:27:00 16:27	MD
PBSLC20IMS1	5	JLC21A	3/21/2018	4:31:00 16:31	MD
LCSOLC20IMS1	5	JLC21A	3/21/2018	4:35:00 16:35	MD
SL2133-008	5	JLC21A	3/21/2018	4:39:00 16:39	MD
SL2133-008	10	JLC21A	3/21/2018	4:43:00 16:43	MD
SL2133-009	5	JLC21A	3/21/2018	4:47:00 16:47	MD
SL2133-009	10	JLC21A	3/21/2018	4:51:00 16:51	MD
SL2133-010	5	JLC21A	3/21/2018	4:55:00 16:55	MD
SL2133-011	5	JLC21A	3/21/2018	4:59:00 16:59	MD
SL2133-012	5	JLC21A	3/21/2018	5:03:00 17:03	MD
RINSE	1	JLC21A	3/21/2018	5:07:00 17:07	MD
CCV	1	JLC21A	3/21/2018	5:11:00 17:11	MD
CCB	1	JLC21A	3/21/2018	5:15:00 17:15	MD
SL2133-012	10	JLC21A	3/21/2018	5:19:00 17:19	MD
SL2133-013	5	JLC21A	3/21/2018	5:23:00 17:23	MD
SL2133-013	10	JLC21A	3/21/2018	5:27:00 17:27	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2133-014	5	JLC21A	3/21/2018	5:31:00 17:31	MD
SL2133-015	5	JLC21A	3/21/2018	5:36:00 17:36	MD
SL2133-016	5	JLC21A	3/21/2018	5:40:00 17:40	MD
SL2133-017	5	JLC21A	3/21/2018	5:44:00 17:44	MD
SL2133-018	5	JLC21A	3/21/2018	5:48:00 17:48	MD
SL2133-019	5	JLC21A	3/21/2018	5:52:00 17:52	MD
RINSE	1	JLC21A	3/21/2018	5:56:00 17:56	MD
CCV	1	JLC21A	3/21/2018	6:00:00 18:00	MD
CCB	1	JLC21A	3/21/2018	6:04:00 18:04	MD
SL2133-019L	25	JLC21A	3/21/2018	6:08:00 18:08	MD
SL2133-019A	5	JLC21A	3/21/2018	6:12:00 18:12	MD
SL2133-019S	5	JLC21A	3/21/2018	6:16:00 18:16	MD
SL2133-019P	5	JLC21A	3/21/2018	6:20:00 18:20	MD
SL2133-021	5	JLC21A	3/21/2018	6:25:00 18:25	MD
SL2133-022	5	JLC21A	3/21/2018	6:29:00 18:29	MD
RINSE	1	JLC21A	3/21/2018	6:33:00 18:33	MD
RINSE	1	JLC21A	3/21/2018	6:37:00 18:37	MD
PBWLC16IMW1	5	JLC21A	3/21/2018	6:41:00 18:41	MD
LCSWLC16IMW1	5	JLC21A	3/21/2018	6:45:00 18:45	MD
CCV	1	JLC21A	3/21/2018	6:49:00 18:49	MD
CCB	1	JLC21A	3/21/2018	6:53:00 18:53	MD
SL2079-014	5	JLC21A	3/21/2018	6:58:00 18:58	MD
SL2081-011	5	JLC21A	3/21/2018	7:02:00 19:02	MD
SL2081-012	5	JLC21A	3/21/2018	7:06:00 19:06	MD
SL2081-001	5	JLC21A	3/21/2018	7:10:00 19:10	MD
RINSE	1	JLC21A	3/21/2018	7:14:00 19:14	MD
SL2081-002	5	JLC21A	3/21/2018	7:18:00 19:18	MD
SL2081-003	5	JLC21A	3/21/2018	7:22:00 19:22	MD
SL2081-004	5	JLC21A	3/21/2018	7:26:00 19:26	MD
RINSE	1	JLC21A	3/21/2018	7:31:00 19:31	MD
RINSE	1	JLC21A	3/21/2018	7:35:00 19:35	MD
CCV	1	JLC21A	3/21/2018	7:39:00 19:39	MD
CCB	1	JLC21A	3/21/2018	7:43:00 19:43	MD
SL2081-005	5	JLC21A	3/21/2018	7:47:00 19:47	MD
SL2081-006	5	JLC21A	3/21/2018	7:51:00 19:51	MD
RINSE	5	JLC21A	3/21/2018	7:55:00 19:55	MD
RINSE	1	JLC21A	3/21/2018	8:00:00 20:00	MD
SL2081-007	1	JLC21A	3/21/2018	8:04:00 20:04	MD
SL2081-008	5	JLC21A	3/21/2018	8:08:00 20:08	MD
SL2081-009	5	JLC21A	3/21/2018	8:12:00 20:12	MD
SL2081-009L	25	JLC21A	3/21/2018	8:16:00 20:16	MD
RINSE	1	JLC21A	3/21/2018	8:21:00 20:21	MD
RINSE	1	JLC21A	3/21/2018	8:25:00 20:25	MD
CCV	1	JLC21A	3/21/2018	8:29:00 20:29	MD
CCB	1	JLC21A	3/21/2018	8:33:00 20:33	MD
SL2081-009A	5	JLC21A	3/21/2018	8:37:00 20:37	MD
SL2081-009S	5	JLC21A	3/21/2018	8:41:00 20:41	MD

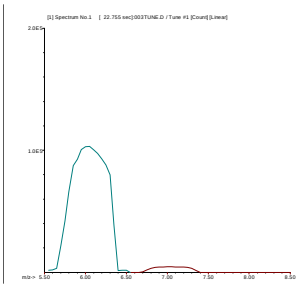
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2081-009P	5	JLC21A	3/21/2018	8:46:00 20:46	MD
RINSE	1	JLC21A	3/21/2018	8:50:00 20:50	MD
RINSE	1	JLC21A	3/21/2018	8:54:00 20:54	MD
SL2081-010	5	JLC21A	3/21/2018	8:58:00 20:58	MD
SL2081-010L	25	JLC21A	3/21/2018	9:02:00 21:02	MD
SL2081-010A	5	JLC21A	3/21/2018	9:06:00 21:06	MD
RINSE	1	JLC21A	3/21/2018	9:11:00 21:11	MD
RINSE	1	JLC21A	3/21/2018	9:15:00 21:15	MD
CCV	1	JLC21A	3/21/2018	9:19:00 21:19	MD
CCB	1	JLC21A	3/21/2018	9:23:00 21:23	MD
SL2081-010S	5	JLC21A	3/21/2018	9:27:00 21:27	MD
SL2081-010P	5	JLC21A	3/21/2018	9:31:00 21:31	MD
RINSE	1	JLC21A	3/21/2018	9:36:00 21:36	MD
RINSE	1	JLC21A	3/21/2018	9:40:00 21:40	MD
RINSE	1	JLC21A	3/21/2018	9:44:00 21:44	MD
RINSE	1	JLC21A	3/21/2018	9:48:00 21:48	MD
CCV	1	JLC21A	3/21/2018	9:52:00 21:52	MD
CCB	1	JLC21A	3/21/2018	9:56:00 21:56	MD
PQL	1	JLC21A	3/21/2018	10:01:0 22:01	MD
CCV	1	JLC21A	3/21/2018	10:05:0 22:05	MD
CCB	1	JLC21A	3/21/2018	10:09:0 22:09	MD

6020 QC Tune Report

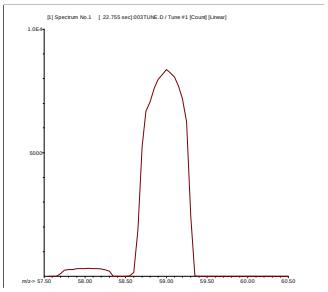
Data File: C:\ICPCHEM\1\DATA\JLC21A.B\003TUNE.D
Date Acquired: Mar 21 2018 02:00 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

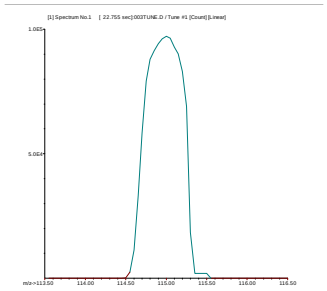
Element	Actual	Required	Flag
7 Li	2.39	5.00	
59 Co	3.27	5.00	
115 In	3.02	5.00	
205 Tl	1.43	5.00	



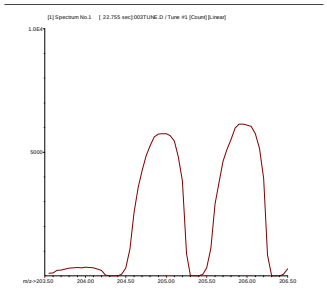
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



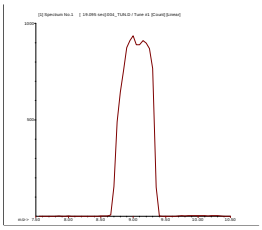
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

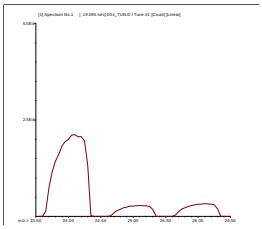
Data File: C:\ICPCHEM\1\DATA\JLC21A.B\004_TUN.D
Date Acquired: Mar 21 2018 02:03 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

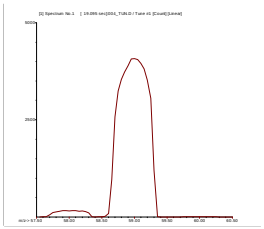
Element	Actual	Required	Flag
9 Be	2.96	5.00	
24 Mg	1.33	5.00	
59 Co	0.91	5.00	
115 In	1.82	5.00	
208 Pb	0.32	5.00	



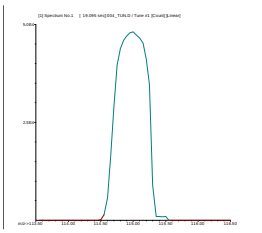
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



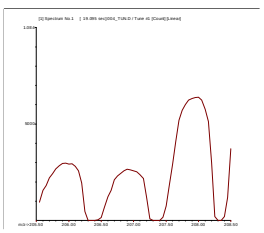
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000253

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.I
Date Acquired: Mar 21 2018 02:49 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 21 2018 02:51 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3258324.00	A	66090.00	2.03
9	Be	19.63	P	0.64	3.27
11	B	327.79	P	17.11	5.22
23	Na	57490.83	P	701.60	1.22
25	Mg	293.36	P	13.34	4.55
27	Al	2234.23	P	809.40	36.23
28	Si	3521686.00	A	82750.00	2.35
29	Si	239140.80	P	3023.00	1.26
39	K	1165045.00	A	2658.00	0.23
43	Ca	188.91	P	40.07	21.21
44	Ca	9065.59	P	256.10	2.83
45	Sc	2896531.00	A	31900.00	1.10
51	V	2182.84	P	318.50	14.59
52	Cr	7059.65	P	74.37	1.05
53	Cr	4915.40	P	201.60	4.10
55	Mn	1837.95	P	171.80	9.35
56	Fe	1687984.00	A	13070.00	0.77
57	Fe	15752.43	P	136.20	0.86
59	Co	206.68	P	6.67	3.23
60	Ni	83.52	P	13.86	16.60
63	Cu	227.79	P	7.70	3.38
65	Cu	93.33	P	23.33	25.00
66	Zn	816.71	P	31.80	3.89
68	Zn	2046.87	P	82.55	4.03
72	Ge		P		
75	As	46.47	P	178.70	384.51
82	Se	-17.32	P	13.87	80.07
88	Sr	166.69	P	88.90	53.33
89	Y	3408097.00	A	40940.00	1.20
98	Mo	34.10	P	1.19	3.48
107	Ag	23.33	P	6.67	28.57
109	Ag	17.78	P	10.71	60.24
111	Cd	941.38	P	37.30	3.96
114	Cd	-4.88	P	11.05	226.28
115	In	3091584.00	A	88800.00	2.87
118	Sn	508.92	P	32.38	6.36
120	Sn	692.26	P	78.35	11.32
121	Sb	61.11	P	21.69	35.49
123	Sb	46.67	P	6.67	14.29
135	Ba	23.33	P	5.77	24.75
137	Ba	41.11	P	18.36	44.66
159	Tb	3559216.00	A	6737.00	0.19
182	W	68.89	P	10.18	14.78
203	Tl	33.33	P	5.77	17.32
205	Tl	60.00	P	13.33	22.22
208	Pb	215.56	P	18.36	8.52
209	Bi	2013556.00	A	14030.00	0.70
232	Th	18.89	P	3.85	20.38
238	U	23.33	P	8.82	37.79

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\018CALI.D\018CALI.D#
Date Acquired: Mar 21 2018 02:53 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal Update: Mar 21 2018 02:51 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3603247.00	A	99940.00	2.77
9 Be	122252.80	P	2279.00	1.86
11 B	70527.25	P	1754.00	2.49
23 Na	84276592.00	A	1472000.00	1.75
25 Mg	7013818.00	A	116000.00	1.65
27 Al	6779841.00	A	76430.00	1.13
28 Si	7271384.00	A	56780.00	0.78
29 Si	440572.59	P	2285.00	0.52
39 K	92223552.00	A	1902000.00	2.06
43 Ca	164252.30	P	3256.00	1.98
44 Ca	2655768.00	A	33470.00	1.26
45 Sc	3183892.00	A	85380.00	2.68
51 V	565322.19	P	4518.00	0.80
52 Cr	482915.50	P	5430.00	1.12
53 Cr	61537.11	P	1002.00	1.63
55 Mn	601086.81	P	2155.00	0.36
56 Fe	97498720.00	A	1420000.00	1.46
57 Fe	2357856.00	A	20200.00	0.86
59 Co	515420.69	P	6012.00	1.17
60 Ni	114170.10	P	1959.00	1.72
63 Cu	264768.91	P	3609.00	1.36
65 Cu	123576.80	P	1914.00	1.55
66 Zn	61281.54	P	1047.00	1.71
68 Zn	44813.57	P	662.60	1.48
72 Ge		P		
75 As	58894.91	P	486.80	0.83
82 Se	4060.43	P	70.94	1.75
88 Sr	582212.88	P	3001.00	0.52
89 Y	3766848.00	A	13430.00	0.36
98 Mo	184196.80	P	1174.00	0.64
107 Ag	281747.81	P	3463.00	1.23
109 Ag	266923.69	P	5194.00	1.95
111 Cd	54447.38	P	908.80	1.67
114 Cd	116166.10	P	908.80	0.78
115 In	3408585.00	A	66850.00	1.96
118 Sn	160435.00	P	1496.00	0.93
120 Sn	219188.30	P	1933.00	0.88
121 Sb	197894.50	P	1920.00	0.97
123 Sb	149684.41	P	856.90	0.57
135 Ba	45861.19	P	1043.00	2.27
137 Ba	79255.62	P	665.50	0.84
159 Tb	3941839.00	A	42430.00	1.08
182 W	164848.30	P	1412.00	0.86
203 Tl	148853.80	P	1010.00	0.68
205 Tl	354527.81	P	3821.00	1.08
208 Pb	489175.50	P	5159.00	1.05
209 Bi	2173658.00	A	12650.00	0.58
232 Th	566558.50	P	5805.00	1.02
238 U	549299.00	P	2704.00	0.49

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3603246.50	2.77	3258324.00	110.6	79.5 - 120.4	
45 Sc	3183892.00	2.68	2896530.80	109.9	79.5 - 120.4	
89 Y	3766847.80	0.36	3408096.80	110.5	79.5 - 120.4	
159 Tb	3941839.00	1.08	3559216.30	110.8	79.5 - 120.4	
209 Bi	2173658.30	0.58	2013556.00	108.0	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000255

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\019_ICV.D\019_ICV.D#
Date Acquired: Mar 21 2018 02:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.18	ppb	1.89	20	95.9	
11 B	20.91	ppb	4.85	20	104.55	
23 Na	3,874.	ppb	0.50	4,000	96.85	
25 Mg	3,918.	ppb	0.41	4,000	97.95	
27 Al	396.1	ppb	1.35	400	99.025	
28 Si	333.	ppb	6.37	400	83.25	
29 Si	301.8	ppb	2.20	400	75.45	Fail
39 K	3,903.	ppb	0.78	4,000	97.575	
43 Ca	3,974.	ppb	2.46	4,000	99.35	
44 Ca	4,035.	ppb	0.41	4,000	100.875	
51 V	19.6	ppb	0.99	20	98	
52 Cr	19.7	ppb	0.66	20	98.5	
53 Cr	18.92	ppb	1.31	20	94.6	
55 Mn	19.87	ppb	1.19	20	99.35	
56 Fe	3,966.	ppb	1.63	4,000	99.15	
57 Fe	4,101.	ppb	1.13	4,000	102.525	
59 Co	19.87	ppb	1.02	20	99.35	
60 Ni	19.75	ppb	2.00	20	98.75	
63 Cu	20.08	ppb	0.33	20	100.4	
65 Cu	19.86	ppb	0.84	20	99.3	
66 Zn	19.95	ppb	0.21	20	99.75	
68 Zn	20.27	ppb	1.14	20	101.35	
75 As	19.54	ppb	1.41	20	97.7	
82 Se	20.11	ppb	1.91	20	100.55	
88 Sr	19.42	ppb	0.59	20	97.1	
98 Mo	38.63	ppb	0.57	40	96.575	
107 Ag	19.83	ppb	0.35	20	99.15	
109 Ag	19.78	ppb	0.33	20	98.9	
111 Cd	19.98	ppb	0.41	20	99.9	
114 Cd	20.34	ppb	1.17	20	101.7	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.6	ppb	0.58	20	98	
120 Sn	19.81	ppb	1.08	20	99.05	
121 Sb	19.63	ppb	0.69	20	98.15	
123 Sb	19.58	ppb	1.26	20	97.9	
135 Ba	19.66	ppb	0.16	20	98.3	
137 Ba	19.64	ppb	2.33	20	98.2	
182 W	19.89	ppb	1.09	20	99.45	
203 Tl	20.31	ppb	0.53	20	101.55	
205 Tl	20.14	ppb	0.77	20	100.7	
208 Pb	19.66	ppb	0.59	20	98.3	
232 Th	19.53	ppb	0.67	20	97.65	
238 U	19.67	ppb	0.97	20	98.35	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3535764.00	1.26	3258324.00	108.5	80 - 120.4	
45 Sc	3139516.30	0.66	2896530.80	108.4	80 - 120.4	
89 Y	3661845.00	0.66	3408096.80	107.4	80 - 120.4	
159 Tb	3822979.50	0.32	3559216.30	107.4	80 - 120.4	
209 Bi	2144159.30	0.34	2013556.00	106.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\020_ICB.D\020_ICB.D#
Date Acquired: Mar 21 2018 03:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0029	ppb	98.71	1.00	
11 B	0.8477	ppb	9.25	1.00	
23 Na	0.1549	ppb	93.87	1.00	
25 Mg	0.0376	ppb	245.91	1.00	
27 Al	0.0188	ppb	143.58	1.00	
28 Si	-28.29	ppb	37.82	1.00	
29 Si	-23.8	ppb	20.21	1.00	
39 K	-0.7772	ppb	221.69	1.00	
43 Ca	1.972	ppb	100.71	1.00	
44 Ca	0.2055	ppb	521.65	1.00	
51 V	-0.0468	ppb	8.68	1.00	
52 Cr	-0.0362	ppb	80.01	1.00	
53 Cr	-0.2041	ppb	16.98	1.00	
55 Mn	-0.0083	ppb	54.57	1.00	
56 Fe	-1.394	ppb	174.18	1.00	
57 Fe	0.8683	ppb	103.69	1.00	
59 Co	-0.0051	ppb	72.33	1.00	
60 Ni	-0.0002	ppb	2263.50	1.00	
63 Cu	0.	ppb	100920.00	1.00	
65 Cu	0.0002	ppb	1688.50	1.00	
66 Zn	-0.0746	ppb	102.31	1.00	
68 Zn	-0.0794	ppb	273.17	1.00	
75 As	-0.2074	ppb	72.61	1.00	
82 Se	-0.0584	ppb	287.13	1.00	
88 Sr	0.0007	ppb	321.85	1.00	
98 Mo	0.0357	ppb	6.39	1.00	
107 Ag	0.0021	ppb	149.39	1.00	
109 Ag	-0.0007	ppb	220.76	1.00	
111 Cd	-0.0348	ppb	112.95	1.00	
114 Cd	0.005	ppb	106.32	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0088	ppb	234.58	1.00	
120 Sn	0.0193	ppb	170.08	1.00	
121 Sb	0.	ppb	60341.00	1.00	
123 Sb	0.0061	ppb	3.98	1.00	
135 Ba	-0.0014	ppb	691.51	1.00	
137 Ba	-0.0008	ppb	1237.40	1.00	
182 W	0.0348	ppb	36.43	1.00	
203 Tl	0.0004	ppb	425.07	1.00	
205 Tl	0.0026	ppb	138.34	1.00	
208 Pb	0.0045	ppb	103.19	1.00	
232 Th	0.0115	ppb	50.32	1.00	
238 U	0.003	ppb	11.02	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3267375.30	0.88	3258324.00	100.3	79.5 - 120	
45 Sc	2898558.50	1.29	2896530.80	100.1	79.5 - 120	
89 Y	3423800.00	0.28	3408096.80	100.5	79.5 - 120	
159 Tb	3561941.30	1.05	3559216.30	100.1	79.5 - 120	
209 Bi	2007829.40	0.05	2013556.00	99.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000257

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\021_PQL.D\021_PQL.D#
Date Acquired: Mar 21 2018 03:03 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.2067	ppb	3.50	0.20	103.35	
11 B	4.771	ppb	2.25	4.00	119.275	
23 Na	208.7	ppb	1.48	200.00	104.35	
25 Mg	19.76	ppb	2.44	20.00	98.8	
27 Al	20.23	ppb	5.90	20.00	101.15	
28 Si	74.3	ppb	50.46	100.00	74.3	
29 Si	73.15	ppb	46.02	100.00	73.15	Fail-DoD
39 K	199.4	ppb	3.14	200.00	99.7	
43 Ca	18.75	ppb	36.11	20.00	93.75	
44 Ca	18.96	ppb	10.19	20.00	94.8	
51 V	0.9697	ppb	2.11	1.00	96.97	
52 Cr	1.006	ppb	3.04	1.00	100.6	
53 Cr	0.8575	ppb	8.01	---	#VALUE!	
55 Mn	0.3969	ppb	2.49	0.40	99.225	
56 Fe	16.7	ppb	27.86	20.00	83.5	
57 Fe	18.68	ppb	4.26	20.00	93.4	
59 Co	0.2052	ppb	4.08	0.20	102.6	
60 Ni	0.4022	ppb	9.15	0.40	100.55	
63 Cu	0.6376	ppb	1.14	0.60	106.267	
65 Cu	0.6142	ppb	5.99	0.60	102.367	
66 Zn	2.007	ppb	2.27	2.00	100.35	
68 Zn	2.103	ppb	2.82	2.00	105.15	
75 As	1.08	ppb	5.28	1.00	108	
82 Se	1.151	ppb	17.40	1.00	115.1	
88 Sr	0.986	ppb	1.90	1.00	98.6	
98 Mo	0.9916	ppb	1.46	1.00	99.16	
107 Ag	0.2086	ppb	10.55	0.20	104.3	
109 Ag	0.2115	ppb	4.59	0.20	105.75	
111 Cd	0.1573	ppb	16.62	0.20	78.65	
114 Cd	0.1911	ppb	10.95	0.20	95.55	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.9831	ppb	4.84	1.00	98.31	
120 Sn	1.054	ppb	5.65	1.00	105.4	
121 Sb	0.1847	ppb	2.91	0.20	92.35	
123 Sb	0.1815	ppb	7.81	0.20	90.75	
135 Ba	0.4134	ppb	9.10	0.40	103.35	
137 Ba	0.3888	ppb	4.33	0.40	97.2	
182 W	1.015	ppb	6.53	1.00	101.5	
203 Tl	0.1992	ppb	10.57	0.20	99.6	
205 Tl	0.1794	ppb	2.36	0.20	89.7	
208 Pb	0.2002	ppb	2.60	0.20	100.1	
232 Th	0.1988	ppb	1.87	0.20	99.4	
238 U	0.2073	ppb	6.89	0.20	103.65	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3317128.80	0.59	3258324.00	101.8	80 - 120.4	
45 Sc	2926928.30	1.41	2896530.80	101.0	80 - 120.4	
89 Y	3470081.80	1.15	3408096.80	101.8	80 - 120.4	
159 Tb	3549764.00	1.26	3559216.30	99.7	80 - 120.4	
209 Bi	2013302.90	1.08	2013556.00	100.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000258

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\022SMPL.D\022SMPL.D#
Date Acquired: Mar 21 2018 03:07 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0003	-0.0003	ppb	615.08	100.	
11 B	0.3999	0.3999	ppb	7.12	1000.	
23 Na	0.0312	0.0312	ppb	45.76	200000.	
25 Mg	0.0414	0.0414	ppb	117.31	200000.	
27 Al	0.038	0.038	ppb	87.16	200000.	
28 Si	-36.36	-36.36	ppb	39.41	#VALUE!	
29 Si	-31.83	-31.83	ppb	58.75	10000.	
39 K	-1.955	-1.955	ppb	99.85	200000.	
43 Ca	4.375	4.375	ppb	63.93	#VALUE!	
44 Ca	-0.9277	-0.9277	ppb	367.04	200000.	
51 V	0.0115	0.0115	ppb	425.26	1000.	
52 Cr	-0.0283	-0.0283	ppb	26.41	2000.	
53 Cr	-0.3117	-0.3117	ppb	12.72	#VALUE!	
55 Mn	0.0006	0.0006	ppb	2155.00	2000.	
56 Fe	1.512	1.512	ppb	260.12	#VALUE!	
57 Fe	0.9285	0.9285	ppb	355.74	100000.	
59 Co	-0.0036	-0.0036	ppb	133.60	1000.	
60 Ni	0.0011	0.0011	ppb	834.77	1000.	
63 Cu	-0.006	-0.006	ppb	112.02	#VALUE!	
65 Cu	0.0033	0.0033	ppb	133.86	2000.	
66 Zn	0.0487	0.0487	ppb	153.87	2000.	
68 Zn	0.0004	0.0004	ppb	20736.00	#VALUE!	
75 As	-0.0126	-0.0126	ppb	1751.60	1000.	
82 Se	-0.023	-0.023	ppb	1545.90	1000.	
88 Sr	-0.0007	-0.0007	ppb	202.57	2000.	
98 Mo	0.0067	0.0067	ppb	48.32	1000.	
107 Ag	0.0013	0.0013	ppb	92.67	100.	
109 Ag	0.0014	0.0014	ppb	63.26	#VALUE!	
111 Cd	-0.0454	-0.0454	ppb	66.70	#VALUE!	
114 Cd	-0.0034	-0.0034	ppb	19.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0021	0.0021	ppb	275.53	1000.	
120 Sn	-0.0097	-0.0097	ppb	177.57	#VALUE!	
121 Sb	-0.0048	-0.0048	ppb	48.96	#VALUE!	
123 Sb	0.0068	0.0068	ppb	109.13	1000.	
135 Ba	0.0064	0.0064	ppb	142.25	2000.	
137 Ba	0.0082	0.0082	ppb	99.70	#VALUE!	
182 W	0.0057	0.0057	ppb	19.96	1000.	
203 Tl	-0.0013	-0.0013	ppb	95.60	1000.	
205 Tl	0.0005	0.0005	ppb	689.06	#VALUE!	
208 Pb	0.0022	0.0022	ppb	33.46	2000.	
232 Th	0.0035	0.0035	ppb	32.27	1000.	
238 U	0.001	0.001	ppb	33.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3306051.80	1.40	3258324.00	101.5	69.5 - 120	
45 Sc	2918086.00	1.46	2896530.80	100.7	69.5 - 120	
89 Y	3412802.30	1.60	3408096.80	100.1	69.5 - 120	
159 Tb	3586763.80	0.42	3559216.30	100.8	69.5 - 120	
209 Bi	2025469.50	0.17	2013556.00	100.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000259

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\023ICSA.D\023ICSA.D#
Date Acquired: Mar 21 2018 03:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0003	ppb	281.19		
11 B	0.6069	ppb	3.39		
23 Na	94,290.	ppb	1.32		
25 Mg	94,340.	ppb	0.91		
27 Al	94,680.	ppb	0.50		
28 Si	-101.3	ppb	7.83		
29 Si	-120.4	ppb	19.75		
39 K	96,960.	ppb	2.40		
43 Ca	99,910.	ppb	2.44		
44 Ca	95,910.	ppb	1.13		
51 V	0.2035	ppb	1.47		
52 Cr	0.9844	ppb	6.53		
53 Cr	0.2676	ppb	51.87		
55 Mn	0.3026	ppb	2.87		
56 Fe	95,300.	ppb	0.81		
57 Fe	93,650.	ppb	0.73		
59 Co	0.0833	ppb	14.82		
60 Ni	-0.1857	ppb	29.13		
63 Cu	3.334	ppb	0.98		
65 Cu	1.041	ppb	3.10		
66 Zn	2.267	ppb	0.72		
68 Zn	0.1677	ppb	16.61		
75 As	0.3312	ppb	35.33		
82 Se	0.3899	ppb	71.56		
88 Sr	0.8918	ppb	0.82		
98 Mo	1,885.	ppb	2.31		
107 Ag	0.0219	ppb	2.27		
109 Ag	0.0262	ppb	8.40		
111 Cd	0.0269	ppb	362.74		
114 Cd	0.0225	ppb	88.52		
115 In	--------	---	--------		
118 Sn	0.0537	ppb	11.20		
120 Sn	0.036	ppb	30.74		
121 Sb	0.0478	ppb	28.24		
123 Sb	0.0595	ppb	11.64		
135 Ba	0.0895	ppb	11.69		
137 Ba	0.0618	ppb	15.85		
182 W	0.25	ppb	10.54		
203 Tl	0.0004	ppb	312.02		
205 Tl	0.0024	ppb	160.38		
208 Pb	0.0996	ppb	4.24		
232 Th	0.0158	ppb	23.47		
238 U	0.0006	ppb	77.14		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3347740.00	1.77	3258324.00	102.7	69.5 - 120.4	
45 Sc	3119891.50	0.79	2896530.80	107.7	69.5 - 120.4	
89 Y	3700617.50	0.77	3408096.80	108.6	69.5 - 120.4	
159 Tb	3812625.80	1.34	3559216.30	107.1	69.5 - 120.4	
209 Bi	1950316.00	1.59	2013556.00	96.9	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000260

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\024ICSB.D\024ICSB.D#
Date Acquired: Mar 21 2018 03:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.	ppb	1.14	20.00	79.5 - 120	
11 B	19.95	ppb	1.93	20.00	79.5 - 120	
23 Na	92,720.	ppb	0.37	100000.00	79.5 - 120	
25 Mg	92,740.	ppb	0.20	100000.00	79.5 - 120	
27 Al	93,340.	ppb	0.45	100000.00	79.5 - 120	
28 Si	421.8	ppb	9.38	---	##### - #####	
29 Si	412.6	ppb	7.22	---	##### - #####	
39 K	95,980.	ppb	0.52	100000.00	79.5 - 120	
43 Ca	98,840.	ppb	0.60	100000.00	79.5 - 120	
44 Ca	95,000.	ppb	0.98	100000.00	79.5 - 120	
51 V	20.06	ppb	1.45	20.00	79.5 - 120	
52 Cr	20.49	ppb	2.09	20.00	79.5 - 120	
53 Cr	20.18	ppb	2.51	---	##### - #####	
55 Mn	19.79	ppb	1.31	20.00	79.5 - 120	
56 Fe	94,440.	ppb	1.32	100000.00	79.5 - 120	
57 Fe	92,240.	ppb	1.10	100000.00	79.5 - 120	
59 Co	19.25	ppb	1.84	20.00	79.5 - 120	
60 Ni	18.68	ppb	3.22	20.00	79.5 - 120	
63 Cu	21.83	ppb	0.70	20.00	79.5 - 120	
65 Cu	19.67	ppb	2.38	20.00	79.5 - 120	
66 Zn	20.86	ppb	1.70	20.00	79.5 - 120	
68 Zn	18.83	ppb	3.61	20.00	79.5 - 120	
75 As	19.96	ppb	2.82	20.00	79.5 - 120	
82 Se	19.42	ppb	1.85	20.00	79.5 - 120	
88 Sr	20.76	ppb	1.39	20.00	79.5 - 120	
98 Mo	1,887.	ppb	1.48	2000.00	79.5 - 120	
107 Ag	18.56	ppb	1.57	20.00	79.5 - 120	
109 Ag	18.68	ppb	2.28	20.00	79.5 - 120	
111 Cd	18.86	ppb	2.01	20.00	79.5 - 120	
114 Cd	18.85	ppb	2.41	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	19.69	ppb	1.20	20.00	79.5 - 120	
120 Sn	19.86	ppb	1.03	20.00	79.5 - 120	
121 Sb	20.01	ppb	0.64	20.00	79.5 - 120	
123 Sb	19.87	ppb	1.07	20.00	79.5 - 120	
135 Ba	20.07	ppb	0.64	20.00	79.5 - 120	
137 Ba	20.18	ppb	0.80	20.00	79.5 - 120	
182 W	20.38	ppb	1.33	20.00	79.5 - 120	
203 Tl	21.05	ppb	0.33	20.00	79.5 - 120	
205 Tl	20.98	ppb	1.30	20.00	79.5 - 120	
208 Pb	20.93	ppb	1.69	20.00	79.5 - 120	
232 Th	22.17	ppb	0.78	20.00	79.5 - 120	
238 U	21.96	ppb	1.20	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3341666.80	1.26	3258324.00	102.6	69.5 - 120	
45 Sc	3164406.50	0.74	2896530.80	109.2	69.5 - 120	
89 Y	3765629.50	1.38	3408096.80	110.5	69.5 - 120	
159 Tb	3917073.80	0.61	3559216.30	110.1	69.5 - 120	
209 Bi	1995605.10	1.04	2013556.00	99.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000261

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 21 2018 03:18 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0026	-0.0026	ppb	8.82	100.	
11 B	0.4087	0.4087	ppb	8.06	1000.	
23 Na	2.001	2.001	ppb	8.51	200000.	
25 Mg	0.5031	0.5031	ppb	30.03	200000.	
27 Al	0.6251	0.6251	ppb	9.60	200000.	
28 Si	-37.57	-37.57	ppb	115.73	#VALUE!	
29 Si	-98.68	-98.68	ppb	41.69	10000.	
39 K	-5.977	-5.977	ppb	26.25	200000.	
43 Ca	6.202	6.202	ppb	60.34	#VALUE!	
44 Ca	1.445	1.445	ppb	172.60	200000.	
51 V	-0.0421	-0.0421	ppb	132.87	1000.	
52 Cr	-0.0769	-0.0769	ppb	12.92	2000.	
53 Cr	-0.3081	-0.3081	ppb	71.50	#VALUE!	
55 Mn	-0.0291	-0.0291	ppb	10.65	2000.	
56 Fe	-7.735	-7.735	ppb	53.72	#VALUE!	
57 Fe	-9.107	-9.107	ppb	9.76	100000.	
59 Co	-0.0094	-0.0094	ppb	77.66	1000.	
60 Ni	-0.0143	-0.0143	ppb	22.76	1000.	
63 Cu	-0.0005	-0.0005	ppb	2112.60	#VALUE!	
65 Cu	0.0073	0.0073	ppb	82.36	2000.	
66 Zn	-0.0193	-0.0193	ppb	352.70	2000.	
68 Zn	-0.1805	-0.1805	ppb	42.00	#VALUE!	
75 As	-0.0561	-0.0561	ppb	164.73	1000.	
82 Se	0.2218	0.2218	ppb	115.01	1000.	
88 Sr	-0.0042	-0.0042	ppb	133.88	2000.	
98 Mo	0.386	0.386	ppb	8.26	1000.	
107 Ag	0.0006	0.0006	ppb	378.42	100.	
109 Ag	0.002	0.002	ppb	56.92	#VALUE!	
111 Cd	-0.0825	-0.0825	ppb	21.47	#VALUE!	
114 Cd	-0.0006	-0.0006	ppb	78.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0168	-0.0168	ppb	13.21	1000.	
120 Sn	-0.0115	-0.0115	ppb	24.67	#VALUE!	
121 Sb	0.0029	0.0029	ppb	172.37	#VALUE!	
123 Sb	0.0094	0.0094	ppb	67.38	1000.	
135 Ba	-0.0043	-0.0043	ppb	281.74	2000.	
137 Ba	-0.0074	-0.0074	ppb	104.95	#VALUE!	
182 W	-0.0036	-0.0036	ppb	204.41	1000.	
203 Tl	0.0016	0.0016	ppb	284.24	1000.	
205 Tl	0.0024	0.0024	ppb	120.03	#VALUE!	
208 Pb	0.0034	0.0034	ppb	58.68	2000.	
232 Th	0.0058	0.0058	ppb	17.89	1000.	
238 U	0.0004	0.0004	ppb	110.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3042353.00	1.59	3258324.00	93.4	69.5 - 120	
45 Sc	2789156.50	1.45	2896530.80	96.3	69.5 - 120	
89 Y	3449532.30	1.70	3408096.80	101.2	69.5 - 120	
159 Tb	3607730.80	1.78	3559216.30	101.4	69.5 - 120	
209 Bi	2027257.90	1.51	2013556.00	100.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000262

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 21 2018 03:22 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	104.8	104.8	ppb	3.38	100.	>LDR
11 B	606.9	606.9	ppb	0.79	1000.	
23 Na	2.843	2.843	ppb	10.94	200000.	
25 Mg	1.054	1.054	ppb	2.50	200000.	
27 Al	0.8325	0.8325	ppb	16.17	200000.	
28 Si	-95.11	-95.11	ppb	29.90	#VALUE!	
29 Si	-180.4	-180.4	ppb	5.53	10000.	LOW
39 K	-10.87	-10.87	ppb	12.30	200000.	
43 Ca	1,568.	1,568.	ppb	3.83	#VALUE!	
44 Ca	199.5	199.5	ppb	3.29	200000.	
51 V	1,026.	1,026.	ppb	1.42	1000.	>LDR
52 Cr	2,063.	2,063.	ppb	1.06	2000.	>LDR
53 Cr	2,112.	2,112.	ppb	1.61	#VALUE!	
55 Mn	2,060.	2,060.	ppb	0.77	2000.	>LDR
56 Fe	-15.48	-15.48	ppb	31.85	#VALUE!	
57 Fe	-14.11	-14.11	ppb	4.72	100000.	
59 Co	1,030.	1,030.	ppb	1.59	1000.	>LDR
60 Ni	1,039.	1,039.	ppb	1.39	1000.	>LDR
63 Cu	2,050.	2,050.	ppb	1.52	#VALUE!	
65 Cu	2,050.	2,050.	ppb	1.33	2000.	>LDR
66 Zn	2,087.	2,087.	ppb	1.73	2000.	>LDR
68 Zn	2,132.	2,132.	ppb	1.40	#VALUE!	
75 As	1,073.	1,073.	ppb	1.74	1000.	>LDR
82 Se	1,091.	1,091.	ppb	1.75	1000.	>LDR
88 Sr	2,075.	2,075.	ppb	0.94	2000.	>LDR
98 Mo	1,044.	1,044.	ppb	1.17	1000.	>LDR
107 Ag	110.5	110.5	ppb	1.99	100.	>LDR
109 Ag	110.5	110.5	ppb	1.16	#VALUE!	
111 Cd	1,107.	1,107.	ppb	0.40	#VALUE!	
114 Cd	1,096.	1,096.	ppb	1.08	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,070.	1,070.	ppb	1.63	1000.	>LDR
120 Sn	1,063.	1,063.	ppb	1.95	#VALUE!	
121 Sb	1,063.	1,063.	ppb	1.47	#VALUE!	
123 Sb	1,077.	1,077.	ppb	1.67	1000.	>LDR
135 Ba	2,206.	2,206.	ppb	1.02	2000.	>LDR
137 Ba	2,151.	2,151.	ppb	1.21	#VALUE!	
182 W	1,057.	1,057.	ppb	1.24	1000.	>LDR
203 Tl	1,055.	1,055.	ppb	1.30	1000.	>LDR
205 Tl	1,037.	1,037.	ppb	0.58	#VALUE!	
208 Pb	2,112.	2,112.	ppb	1.05	2000.	>LDR
232 Th	1,030.	1,030.	ppb	0.90	1000.	>LDR
238 U	1,029.	1,029.	ppb	1.12	1000.	>LDR

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3238724.80	1.64	3258324.00	99.4	69.5 - 120	
45 Sc	2919048.30	0.63	2896530.80	100.8	69.5 - 120	
89 Y	3593705.00	0.89	3408096.80	105.4	69.5 - 120	
159 Tb	3777327.80	1.19	3559216.30	106.1	69.5 - 120	
209 Bi	2111254.80	0.56	2013556.00	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

22 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000263

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 21 2018 03:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0074	0.0074	ppb	44.60	100.	
11 B	7.475	7.475	ppb	14.27	1000.	
23 Na	198,000.	198,000.	ppb	2.80	200000.	
25 Mg	193,400.	193,400.	ppb	1.39	200000.	
27 Al	197,400.	197,400.	ppb	1.18	200000.	
28 Si	11,510.	11,510.	ppb	1.60	#VALUE!	
29 Si	12,250.	12,250.	ppb	0.48	10000.	>LDR
39 K	203,300.	203,300.	ppb	0.65	200000.	>LDR
43 Ca	205,400.	205,400.	ppb	0.85	#VALUE!	
44 Ca	201,000.	201,000.	ppb	0.11	200000.	>LDR
51 V	0.1651	0.1651	ppb	32.74	1000.	
52 Cr	3.171	3.171	ppb	3.25	2000.	
53 Cr	1.989	1.989	ppb	4.91	#VALUE!	
55 Mn	8.328	8.328	ppb	1.87	2000.	
56 Fe	102,600.	102,600.	ppb	2.97	#VALUE!	
57 Fe	100,700.	100,700.	ppb	2.31	100000.	>LDR
59 Co	2.891	2.891	ppb	2.52	1000.	
60 Ni	3.421	3.421	ppb	2.88	1000.	
63 Cu	8.963	8.963	ppb	0.98	#VALUE!	
65 Cu	3.056	3.056	ppb	0.32	2000.	
66 Zn	4.418	4.418	ppb	2.49	2000.	
68 Zn	2.107	2.107	ppb	2.86	#VALUE!	
75 As	0.4801	0.4801	ppb	25.75	1000.	
82 Se	0.4807	0.4807	ppb	42.44	1000.	
88 Sr	7.09	7.09	ppb	1.74	2000.	
98 Mo	0.6318	0.6318	ppb	3.74	1000.	
107 Ag	0.3756	0.3756	ppb	7.71	100.	
109 Ag	0.3606	0.3606	ppb	1.57	#VALUE!	
111 Cd	-0.0657	-0.0657	ppb	34.44	#VALUE!	
114 Cd	-0.0016	-0.0016	ppb	646.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2318	0.2318	ppb	9.66	1000.	
120 Sn	0.2382	0.2382	ppb	10.49	#VALUE!	
121 Sb	0.1123	0.1123	ppb	8.41	#VALUE!	
123 Sb	0.125	0.125	ppb	13.38	1000.	
135 Ba	0.3084	0.3084	ppb	5.91	2000.	
137 Ba	0.292	0.292	ppb	7.39	#VALUE!	
182 W	0.444	0.444	ppb	6.37	1000.	
203 Tl	0.063	0.063	ppb	12.88	1000.	
205 Tl	0.0576	0.0576	ppb	13.56	#VALUE!	
208 Pb	0.627	0.627	ppb	1.32	2000.	
232 Th	0.236	0.236	ppb	52.84	1000.	
238 U	0.1374	0.1374	ppb	6.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3250823.50	1.22	3258324.00	99.8	69.5 - 120	
45 Sc	3122074.50	1.09	2896530.80	107.8	69.5 - 120	
89 Y	3549373.80	0.63	3408096.80	104.1	69.5 - 120	
159 Tb	3618448.80	0.70	3559216.30	101.7	69.5 - 120	
209 Bi	1783804.40	0.71	2013556.00	88.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000264

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\028SMPL.D\028SMPL.D#
Date Acquired: Mar 21 2018 03:29 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0007	0.0007	ppb	111.31	100.	
11 B	3.999	3.999	ppb	10.69	1000.	
23 Na	9.086	9.086	ppb	11.90	200000.	
25 Mg	1.464	1.464	ppb	10.34	200000.	
27 Al	1.163	1.163	ppb	6.88	200000.	
28 Si	-1.739	-1.739	ppb	1622.80	#VALUE!	
29 Si	-87.53	-87.53	ppb	19.11	10000.	
39 K	-2.213	-2.213	ppb	5.07	200000.	
43 Ca	1.701	1.701	ppb	94.30	#VALUE!	
44 Ca	-0.169	-0.169	ppb	1301.80	200000.	
51 V	0.0037	0.0037	ppb	1907.50	1000.	
52 Cr	-0.0139	-0.0139	ppb	103.52	2000.	
53 Cr	0.4994	0.4994	ppb	42.65	#VALUE!	
55 Mn	-0.0208	-0.0208	ppb	27.80	2000.	
56 Fe	-0.9655	-0.9655	ppb	275.19	#VALUE!	
57 Fe	-7.428	-7.428	ppb	22.86	100000.	
59 Co	-0.0036	-0.0036	ppb	39.64	1000.	
60 Ni	0.0113	0.0113	ppb	194.22	1000.	
63 Cu	0.0176	0.0176	ppb	32.84	#VALUE!	
65 Cu	0.0193	0.0193	ppb	70.31	2000.	
66 Zn	0.0453	0.0453	ppb	68.49	2000.	
68 Zn	-0.1188	-0.1188	ppb	67.10	#VALUE!	
75 As	-0.0689	-0.0689	ppb	150.09	1000.	
82 Se	0.0117	0.0117	ppb	408.69	1000.	
88 Sr	0.0004	0.0004	ppb	302.03	2000.	
98 Mo	0.0909	0.0909	ppb	11.29	1000.	
107 Ag	0.0013	0.0013	ppb	50.29	100.	
109 Ag	0.0016	0.0016	ppb	25.42	#VALUE!	
111 Cd	-0.0826	-0.0826	ppb	2.41	#VALUE!	
114 Cd	-0.0037	-0.0037	ppb	45.96	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0237	0.0237	ppb	22.64	1000.	
120 Sn	0.0331	0.0331	ppb	41.78	#VALUE!	
121 Sb	0.0104	0.0104	ppb	59.38	#VALUE!	
123 Sb	0.0162	0.0162	ppb	19.22	1000.	
135 Ba	0.0078	0.0078	ppb	87.84	2000.	
137 Ba	0.0044	0.0044	ppb	77.11	#VALUE!	
182 W	0.1137	0.1137	ppb	4.98	1000.	
203 Tl	0.0117	0.0117	ppb	37.37	1000.	
205 Tl	0.0122	0.0122	ppb	7.43	#VALUE!	
208 Pb	0.0121	0.0121	ppb	33.13	2000.	
232 Th	0.01	0.01	ppb	28.45	1000.	
238 U	0.0118	0.0118	ppb	12.50	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3121181.50	0.33	3258324.00	95.8	69.5 - 120	
45 Sc	2857302.00	0.67	2896530.80	98.6	69.5 - 120	
89 Y	3409555.80	0.25	3408096.80	100.0	69.5 - 120	
159 Tb	3582643.30	0.72	3559216.30	100.7	69.5 - 120	
209 Bi	2016305.10	0.56	2013556.00	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000265

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\029SMPL.D\029SMPL.D#
Date Acquired: Mar 21 2018 03:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0006	0.0006	ppb	23.53	100.	
11 B	2.269	2.269	ppb	3.72	1000.	
23 Na	4.301	4.301	ppb	11.05	200000.	
25 Mg	0.9587	0.9587	ppb	2.85	200000.	
27 Al	0.6605	0.6605	ppb	17.23	200000.	
28 Si	-9.889	-9.889	ppb	256.95	#VALUE!	
29 Si	-88.13	-88.13	ppb	29.58	10000.	
39 K	-5.729	-5.729	ppb	14.04	200000.	
43 Ca	1.214	1.214	ppb	483.61	#VALUE!	
44 Ca	-0.7342	-0.7342	ppb	154.86	200000.	
51 V	-0.0303	-0.0303	ppb	112.44	1000.	
52 Cr	-0.0141	-0.0141	ppb	206.76	2000.	
53 Cr	0.3269	0.3269	ppb	32.37	#VALUE!	
55 Mn	-0.0212	-0.0212	ppb	14.19	2000.	
56 Fe	-3.354	-3.354	ppb	30.05	#VALUE!	
57 Fe	-5.989	-5.989	ppb	35.13	100000.	
59 Co	-0.0024	-0.0024	ppb	289.87	1000.	
60 Ni	-0.0102	-0.0102	ppb	87.90	1000.	
63 Cu	0.0087	0.0087	ppb	64.02	#VALUE!	
65 Cu	0.0244	0.0244	ppb	24.24	2000.	
66 Zn	0.0028	0.0028	ppb	844.56	2000.	
68 Zn	-0.1722	-0.1722	ppb	60.57	#VALUE!	
75 As	-0.1285	-0.1285	ppb	8.66	1000.	
82 Se	0.3781	0.3781	ppb	85.22	1000.	
88 Sr	0.0019	0.0019	ppb	286.63	2000.	
98 Mo	0.0535	0.0535	ppb	7.30	1000.	
107 Ag	0.0027	0.0027	ppb	161.44	100.	
109 Ag	0.0011	0.0011	ppb	169.22	#VALUE!	
111 Cd	-0.0947	-0.0947	ppb	8.40	#VALUE!	
114 Cd	-0.0002	-0.0002	ppb	3956.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0147	0.0147	ppb	49.11	1000.	
120 Sn	0.0442	0.0442	ppb	14.21	#VALUE!	
121 Sb	0.0044	0.0044	ppb	104.87	#VALUE!	
123 Sb	0.0059	0.0059	ppb	21.99	1000.	
135 Ba	0.0089	0.0089	ppb	134.80	2000.	
137 Ba	0.0027	0.0027	ppb	170.13	#VALUE!	
182 W	0.0511	0.0511	ppb	21.43	1000.	
203 Tl	0.0124	0.0124	ppb	55.67	1000.	
205 Tl	0.0037	0.0037	ppb	82.58	#VALUE!	
208 Pb	0.0102	0.0102	ppb	52.58	2000.	
232 Th	0.0074	0.0074	ppb	18.62	1000.	
238 U	0.0031	0.0031	ppb	43.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3220760.00	2.97	3258324.00	98.8	69.5 - 120	
45 Sc	2851688.50	0.56	2896530.80	98.5	69.5 - 120	
89 Y	3454540.00	0.76	3408096.80	101.4	69.5 - 120	
159 Tb	3601285.30	0.53	3559216.30	101.2	69.5 - 120	
209 Bi	2023470.80	1.56	2013556.00	100.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000266

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\030_CCV.D\030_CCV.D#
Date Acquired: Mar 21 2018 03:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.09	ppb	0.78	25	100.36	
11 B	26.68	ppb	2.89	25	106.72	
23 Na	4,971.	ppb	0.84	5,000	99.42	
25 Mg	5,069.	ppb	1.29	5,000	101.38	
27 Al	504.1	ppb	0.80	500	100.82	
28 Si	453.2	ppb	1.28	500	90.64	
29 Si	392.2	ppb	2.22	500	78.44	Fail
39 K	5,069.	ppb	0.25	5,000	101.38	
43 Ca	5,179.	ppb	1.24	5,000	103.58	
44 Ca	5,204.	ppb	0.96	5,000	104.08	
51 V	24.8	ppb	1.40	25	99.2	
52 Cr	24.94	ppb	1.58	25	99.76	
53 Cr	25.09	ppb	0.43	25	100.36	
55 Mn	25.35	ppb	1.32	25	101.4	
56 Fe	5,021.	ppb	0.99	5,000	100.42	
57 Fe	5,146.	ppb	1.58	5,000	102.92	
59 Co	25.26	ppb	1.51	25	101.04	
60 Ni	25.09	ppb	2.47	25	100.36	
63 Cu	25.45	ppb	0.99	25	101.8	
65 Cu	25.53	ppb	0.62	25	102.12	
66 Zn	25.42	ppb	1.08	25	101.68	
68 Zn	24.87	ppb	1.66	25	99.48	
75 As	25.24	ppb	2.48	25	100.96	
82 Se	25.74	ppb	1.87	25	102.96	
88 Sr	25.26	ppb	2.03	25	101.04	
98 Mo	25.59	ppb	1.16	25	102.36	
107 Ag	25.87	ppb	1.60	25	103.48	
109 Ag	25.98	ppb	1.04	25	103.92	
111 Cd	26.02	ppb	1.87	25	104.08	
114 Cd	26.17	ppb	1.21	25	104.68	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.62	ppb	1.39	25	102.48	
120 Sn	25.83	ppb	1.27	25	103.32	
121 Sb	25.61	ppb	1.73	25	102.44	
123 Sb	25.67	ppb	1.49	25	102.68	
135 Ba	25.64	ppb	2.01	25	102.56	
137 Ba	25.67	ppb	0.77	25	102.68	
182 W	25.25	ppb	1.81	25	101	
203 Tl	25.63	ppb	3.17	25	102.52	
205 Tl	25.69	ppb	1.73	25	102.76	
208 Pb	25.49	ppb	1.74	25	101.96	
232 Th	25.47	ppb	1.79	25	101.88	
238 U	25.38	ppb	2.29	25	101.52	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3435259.80	1.61	3258324.00	105.4	80 - 120.4	
45 Sc	3054320.30	0.66	2896530.80	105.4	80 - 120.4	
89 Y	3693267.80	0.99	3408096.80	108.4	80 - 120.4	
159 Tb	3893202.00	1.27	3559216.30	109.4	80 - 120.4	
209 Bi	2148227.80	1.50	2013556.00	106.7	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000267

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\031_CCB.D\031_CCB.D#
Date Acquired: Mar 21 2018 03:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0009	ppb	325.92	1.00	
11 B	1.53	ppb	17.73	1.00	
23 Na	2.632	ppb	8.14	1.00	
25 Mg	0.5713	ppb	13.87	1.00	
27 Al	0.3504	ppb	40.33	1.00	
28 Si	-14.91	ppb	118.38	1.00	
29 Si	-85.76	ppb	12.37	1.00	
39 K	-6.018	ppb	4.68	1.00	
43 Ca	3.193	ppb	81.37	1.00	
44 Ca	-0.7773	ppb	102.65	1.00	
51 V	-0.0358	ppb	20.47	1.00	
52 Cr	-0.0705	ppb	14.68	1.00	
53 Cr	-0.0305	ppb	83.07	1.00	
55 Mn	-0.0235	ppb	27.13	1.00	
56 Fe	-5.408	ppb	33.65	1.00	
57 Fe	-5.579	ppb	30.96	1.00	
59 Co	-0.0026	ppb	56.03	1.00	
60 Ni	-0.0073	ppb	124.03	1.00	
63 Cu	0.0027	ppb	29.96	1.00	
65 Cu	0.0069	ppb	103.69	1.00	
66 Zn	-0.0285	ppb	92.77	1.00	
68 Zn	-0.1965	ppb	40.24	1.00	
75 As	-0.0747	ppb	42.72	1.00	
82 Se	-0.0941	ppb	276.53	1.00	
88 Sr	-0.0008	ppb	648.42	1.00	
98 Mo	0.0445	ppb	13.01	1.00	
107 Ag	0.0006	ppb	100.22	1.00	
109 Ag	0.0013	ppb	81.60	1.00	
111 Cd	-0.0826	ppb	68.92	1.00	
114 Cd	-0.0004	ppb	2182.20	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0106	ppb	171.67	1.00	
120 Sn	0.0196	ppb	131.82	1.00	
121 Sb	0.0039	ppb	58.09	1.00	
123 Sb	0.0077	ppb	123.66	1.00	
135 Ba	-0.0096	ppb	84.82	1.00	
137 Ba	0.0052	ppb	172.39	1.00	
182 W	0.0384	ppb	15.75	1.00	
203 Tl	0.0073	ppb	42.27	1.00	
205 Tl	0.0048	ppb	93.12	1.00	
208 Pb	0.0088	ppb	95.51	1.00	
232 Th	0.0201	ppb	10.84	1.00	
238 U	0.0057	ppb	17.13	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3172800.50	0.89	3258324.00	97.4	79.5 - 120	
45 Sc	2856945.30	0.73	2896530.80	98.6	79.5 - 120	
89 Y	3441464.00	0.96	3408096.80	101.0	79.5 - 120	
159 Tb	3584191.30	0.94	3559216.30	100.7	79.5 - 120	
209 Bi	2006329.50	0.61	2013556.00	99.6	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000268

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 21 2018 03:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-001
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.96	2.792	ppb	1.21	100.	
11 B	91.1	18.22	ppb	1.14	1000.	
23 Na	35,280.	7,056.	ppb	0.51	200000.	
25 Mg	104,150.	20,830.	ppb	0.51	200000.	
27 Al	241,850.	48,370.	ppb	1.35	200000.	
28 Si	1,233.5	246.7	ppb	13.24	#VALUE!	
29 Si	866.	173.2	ppb	12.56	10000.	
39 K	63,850.	12,770.	ppb	1.08	200000.	
43 Ca	227,100.	45,420.	ppb	1.67	#VALUE!	
44 Ca	214,950.	42,990.	ppb	1.47	200000.	
51 V	364.95	72.99	ppb	1.76	1000.	
52 Cr	188.25	37.65	ppb	1.75	2000.	
53 Cr	206.05	41.21	ppb	4.10	#VALUE!	
55 Mn	1,549.	309.8	ppb	2.12	2000.	
56 Fe	196,300.	39,260.	ppb	2.13	#VALUE!	
57 Fe	192,200.	38,440.	ppb	2.80	100000.	
59 Co	81.3	16.26	ppb	2.67	1000.	
60 Ni	209.65	41.93	ppb	2.69	1000.	
63 Cu	179.9	35.98	ppb	1.76	#VALUE!	
65 Cu	179.65	35.93	ppb	2.92	2000.	
66 Zn	622.5	124.5	ppb	1.64	2000.	
68 Zn	708.5	141.7	ppb	1.36	#VALUE!	
75 As	99.85	19.97	ppb	2.70	1000.	
82 Se	5.835	1.167	ppb	12.16	1000.	
88 Sr	1,232.5	246.5	ppb	1.47	2000.	
98 Mo	4.3835	0.8767	ppb	2.62	1000.	
107 Ag	1.284	0.2568	ppb	5.49	100.	
109 Ag	1.0885	0.2177	ppb	3.45	#VALUE!	
111 Cd	1.8045	0.3609	ppb	12.22	#VALUE!	
114 Cd	0.0594	0.0119	ppb	106.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.	11.6	ppb	0.44	1000.	
120 Sn	58.25	11.65	ppb	0.31	#VALUE!	
121 Sb	2.0555	0.4111	ppb	7.31	#VALUE!	
123 Sb	2.1235	0.4247	ppb	1.71	1000.	
135 Ba	3,213.	642.6	ppb	1.09	2000.	
137 Ba	3,200.5	640.1	ppb	0.69	#VALUE!	
182 W	0.7705	0.1541	ppb	10.97	1000.	
203 Tl	4.8915	0.9783	ppb	2.32	1000.	
205 Tl	4.922	0.9844	ppb	1.68	#VALUE!	
208 Pb	191.4	38.28	ppb	0.13	2000.	
232 Th	129.5	25.9	ppb	0.34	1000.	
238 U	22.525	4.505	ppb	0.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3492040.30	0.79	3258324.00	107.2	69.5 - 120	
45 Sc	3229143.80	1.30	2896530.80	111.5	69.5 - 120	
89 Y	4407808.50	1.47	3408096.80	129.3	69.5 - 120	IS Fai
159 Tb	4033223.30	0.68	3559216.30	113.3	69.5 - 120	
209 Bi	2105184.30	0.16	2013556.00	104.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000269

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 21 2018 03:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-001
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.28	1.528	ppb	2.54	100.	
11 B	102.1	10.21	ppb	2.46	1000.	
23 Na	38,810.	3,881.	ppb	0.85	200000.	
25 Mg	114,100.	11,410.	ppb	0.58	200000.	
27 Al	261,600.	26,160.	ppb	1.30	200000.	
28 Si	733.9	73.39	ppb	72.79	#VALUE!	
29 Si	-457.5	-45.75	ppb	84.81	10000.	
39 K	69,830.	6,983.	ppb	0.87	200000.	
43 Ca	237,500.	23,750.	ppb	1.33	#VALUE!	
44 Ca	233,500.	23,350.	ppb	0.91	200000.	
51 V	410.3	41.03	ppb	0.15	1000.	
52 Cr	217.2	21.72	ppb	0.33	2000.	
53 Cr	235.	23.5	ppb	1.34	#VALUE!	
55 Mn	1,809.	180.9	ppb	0.58	2000.	
56 Fe	224,100.	22,410.	ppb	0.19	#VALUE!	
57 Fe	219,900.	21,990.	ppb	0.48	100000.	
59 Co	93.94	9.394	ppb	0.61	1000.	
60 Ni	245.	24.5	ppb	0.19	1000.	
63 Cu	209.3	20.93	ppb	0.62	#VALUE!	
65 Cu	210.1	21.01	ppb	1.89	2000.	
66 Zn	735.2	73.52	ppb	0.64	2000.	
68 Zn	825.	82.5	ppb	0.81	#VALUE!	
75 As	112.6	11.26	ppb	1.43	1000.	
82 Se	6.138	0.6138	ppb	17.32	1000.	
88 Sr	1,429.	142.9	ppb	0.33	2000.	
98 Mo	5.093	0.5093	ppb	1.67	1000.	
107 Ag	1.468	0.1468	ppb	4.86	100.	
109 Ag	1.183	0.1183	ppb	3.28	#VALUE!	
111 Cd	1.948	0.1948	ppb	13.69	#VALUE!	
114 Cd	0.0318	0.0032	ppb	137.08	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	62.24	6.224	ppb	0.93	1000.	
120 Sn	62.48	6.248	ppb	1.04	#VALUE!	
121 Sb	2.269	0.2269	ppb	0.64	#VALUE!	
123 Sb	2.369	0.2369	ppb	8.94	1000.	
135 Ba	3,463.	346.3	ppb	0.80	2000.	
137 Ba	3,452.	345.2	ppb	0.44	#VALUE!	
182 W	0.8177	0.0818	ppb	11.53	1000.	
203 Tl	5.35	0.535	ppb	6.02	1000.	
205 Tl	5.052	0.5052	ppb	2.88	#VALUE!	
208 Pb	202.9	20.29	ppb	0.10	2000.	
232 Th	135.	13.5	ppb	0.66	1000.	
238 U	23.48	2.348	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3549023.80	2.62	3258324.00	108.9	69.5 - 120	
45 Sc	3268445.30	2.65	2896530.80	112.8	69.5 - 120	
89 Y	4202154.00	1.42	3408096.80	123.3	69.5 - 120	IS Fai
159 Tb	4050489.50	1.50	3559216.30	113.8	69.5 - 120	
209 Bi	2160795.50	1.56	2013556.00	107.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000270

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 21 2018 03:52 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.44	2.688	ppb	0.91	100.	
11 B	106.25	21.25	ppb	1.85	1000.	
23 Na	31,540.	6,308.	ppb	1.85	200000.	
25 Mg	85,150.	17,030.	ppb	0.60	200000.	
27 Al	231,050.	46,210.	ppb	1.43	200000.	
28 Si	2,117.5	423.5	ppb	3.31	#VALUE!	
29 Si	1,686.5	337.3	ppb	1.21	10000.	
39 K	65,050.	13,010.	ppb	1.64	200000.	
43 Ca	166,400.	33,280.	ppb	1.44	#VALUE!	
44 Ca	162,900.	32,580.	ppb	1.17	200000.	
51 V	459.85	91.97	ppb	1.07	1000.	
52 Cr	192.7	38.54	ppb	1.65	2000.	
53 Cr	211.6	42.32	ppb	2.24	#VALUE!	
55 Mn	1,589.5	317.9	ppb	1.55	2000.	
56 Fe	216,550.	43,310.	ppb	1.62	#VALUE!	
57 Fe	210,600.	42,120.	ppb	1.76	100000.	
59 Co	94.4	18.88	ppb	1.79	1000.	
60 Ni	239.15	47.83	ppb	1.00	1000.	
63 Cu	184.95	36.99	ppb	1.87	#VALUE!	
65 Cu	186.4	37.28	ppb	2.02	2000.	
66 Zn	629.	125.8	ppb	2.48	2000.	
68 Zn	676.5	135.3	ppb	2.29	#VALUE!	
75 As	182.3	36.46	ppb	2.04	1000.	
82 Se	6.23	1.246	ppb	21.48	1000.	
88 Sr	834.5	166.9	ppb	2.58	2000.	
98 Mo	8.755	1.751	ppb	3.10	1000.	
107 Ag	1.464	0.2928	ppb	1.84	100.	
109 Ag	1.355	0.271	ppb	3.88	#VALUE!	
111 Cd	1.6985	0.3397	ppb	2.37	#VALUE!	
114 Cd	-0.2879	-0.0576	ppb	11.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.95	10.39	ppb	0.92	1000.	
120 Sn	52.35	10.47	ppb	1.63	#VALUE!	
121 Sb	2.8715	0.5743	ppb	5.77	#VALUE!	
123 Sb	2.911	0.5822	ppb	5.69	1000.	
135 Ba	2,047.5	409.5	ppb	1.14	2000.	
137 Ba	2,049.	409.8	ppb	1.36	#VALUE!	
182 W	0.894	0.1788	ppb	5.68	1000.	
203 Tl	4.1575	0.8315	ppb	3.43	1000.	
205 Tl	4.3	0.86	ppb	1.81	#VALUE!	
208 Pb	200.7	40.14	ppb	1.90	2000.	
232 Th	119.7	23.94	ppb	2.16	1000.	
238 U	25.465	5.093	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3550787.80	1.28	3258324.00	109.0	69.5 - 120	
45 Sc	3296565.30	0.77	2896530.80	113.8	69.5 - 120	
89 Y	4436410.50	1.43	3408096.80	130.2	69.5 - 120	IS Fai
159 Tb	4088107.00	1.23	3559216.30	114.9	69.5 - 120	
209 Bi	2136869.00	1.42	2013556.00	106.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000271

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 21 2018 03:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.78	1.478	ppb	0.97	100.	
11 B	119.5	11.95	ppb	1.98	1000.	
23 Na	35,700.	3,570.	ppb	1.86	200000.	
25 Mg	97,600.	9,760.	ppb	2.42	200000.	
27 Al	261,800.	26,180.	ppb	1.61	200000.	
28 Si	1,857.	185.7	ppb	15.13	#VALUE!	
29 Si	856.5	85.65	ppb	42.64	10000.	
39 K	73,060.	7,306.	ppb	1.09	200000.	
43 Ca	189,500.	18,950.	ppb	0.94	#VALUE!	
44 Ca	183,900.	18,390.	ppb	0.61	200000.	
51 V	523.7	52.37	ppb	0.93	1000.	
52 Cr	228.5	22.85	ppb	0.92	2000.	
53 Cr	245.	24.5	ppb	1.74	#VALUE!	
55 Mn	1,898.	189.8	ppb	1.14	2000.	
56 Fe	253,000.	25,300.	ppb	0.87	#VALUE!	
57 Fe	247,900.	24,790.	ppb	0.90	100000.	
59 Co	111.7	11.17	ppb	0.80	1000.	
60 Ni	283.8	28.38	ppb	0.42	1000.	
63 Cu	219.7	21.97	ppb	0.63	#VALUE!	
65 Cu	221.5	22.15	ppb	1.55	2000.	
66 Zn	752.	75.2	ppb	1.24	2000.	
68 Zn	813.	81.3	ppb	1.28	#VALUE!	
75 As	217.1	21.71	ppb	0.97	1000.	
82 Se	8.101	0.8101	ppb	18.41	1000.	
88 Sr	993.2	99.32	ppb	0.59	2000.	
98 Mo	10.08	1.008	ppb	4.44	1000.	
107 Ag	1.759	0.1759	ppb	3.21	100.	
109 Ag	1.623	0.1623	ppb	3.15	#VALUE!	
111 Cd	1.325	0.1325	ppb	17.71	#VALUE!	
114 Cd	-0.27	-0.027	ppb	69.41	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.2	5.72	ppb	2.09	1000.	
120 Sn	58.21	5.821	ppb	1.75	#VALUE!	
121 Sb	3.206	0.3206	ppb	5.84	#VALUE!	
123 Sb	3.46	0.346	ppb	8.73	1000.	
135 Ba	2,316.	231.6	ppb	0.75	2000.	
137 Ba	2,314.	231.4	ppb	0.41	#VALUE!	
182 W	1.013	0.1013	ppb	6.70	1000.	
203 Tl	4.869	0.4869	ppb	3.59	1000.	
205 Tl	4.677	0.4677	ppb	4.56	#VALUE!	
208 Pb	221.5	22.15	ppb	0.10	2000.	
232 Th	131.6	13.16	ppb	0.52	1000.	
238 U	28.3	2.83	ppb	0.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3537460.00	1.31	3258324.00	108.6	69.5 - 120	
45 Sc	3212411.00	1.10	2896530.80	110.9	69.5 - 120	
89 Y	4194537.50	0.48	3408096.80	123.1	69.5 - 120	IS Fai
159 Tb	4024744.00	0.68	3559216.30	113.1	69.5 - 120	
209 Bi	2158185.50	0.32	2013556.00	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000272

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 21 2018 04:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.515	2.303	ppb	1.54	100.	
11 B	95.8	19.16	ppb	2.15	1000.	
23 Na	5,745.	1,149.	ppb	0.66	200000.	
25 Mg	83,100.	16,620.	ppb	0.58	200000.	
27 Al	205,750.	41,150.	ppb	0.93	200000.	
28 Si	2,878.5	575.7	ppb	6.49	#VALUE!	
29 Si	2,476.	495.2	ppb	6.01	10000.	
39 K	43,435.	8,687.	ppb	1.41	200000.	
43 Ca	108,950.	21,790.	ppb	1.14	#VALUE!	
44 Ca	106,050.	21,210.	ppb	0.79	200000.	
51 V	363.85	72.77	ppb	2.15	1000.	
52 Cr	205.35	41.07	ppb	1.67	2000.	
53 Cr	228.55	45.71	ppb	2.50	#VALUE!	
55 Mn	3,980.5	796.1	ppb	1.30	2000.	
56 Fe	218,400.	43,680.	ppb	1.53	#VALUE!	
57 Fe	213,350.	42,670.	ppb	1.83	100000.	
59 Co	57.6	11.52	ppb	1.66	1000.	
60 Ni	178.05	35.61	ppb	2.31	1000.	
63 Cu	168.65	33.73	ppb	2.17	#VALUE!	
65 Cu	169.2	33.84	ppb	1.70	2000.	
66 Zn	607.	121.4	ppb	2.49	2000.	
68 Zn	713.	142.6	ppb	1.43	#VALUE!	
75 As	72.35	14.47	ppb	4.06	1000.	
82 Se	5.245	1.049	ppb	17.26	1000.	
88 Sr	629.5	125.9	ppb	0.88	2000.	
98 Mo	2.8135	0.5627	ppb	2.36	1000.	
107 Ag	0.968	0.1936	ppb	6.21	100.	
109 Ag	0.757	0.1514	ppb	5.93	#VALUE!	
111 Cd	4.2815	0.8563	ppb	9.02	#VALUE!	
114 Cd	2.218	0.4436	ppb	3.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.25	10.45	ppb	1.55	1000.	
120 Sn	52.85	10.57	ppb	0.41	#VALUE!	
121 Sb	1.6805	0.3361	ppb	4.11	#VALUE!	
123 Sb	1.679	0.3358	ppb	2.98	1000.	
135 Ba	3,851.	770.2	ppb	0.13	2000.	
137 Ba	3,791.	758.2	ppb	0.53	#VALUE!	
182 W	0.664	0.1328	ppb	4.85	1000.	
203 Tl	3.9055	0.7811	ppb	4.93	1000.	
205 Tl	3.8395	0.7679	ppb	0.82	#VALUE!	
208 Pb	177.75	35.55	ppb	0.64	2000.	
232 Th	113.45	22.69	ppb	0.46	1000.	
238 U	11.805	2.361	ppb	1.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3496796.30	0.57	3258324.00	107.3	69.5 - 120	
45 Sc	3238851.50	1.57	2896530.80	111.8	69.5 - 120	
89 Y	4436573.00	1.16	3408096.80	130.2	69.5 - 120	IS Fai
159 Tb	4073836.30	0.21	3559216.30	114.5	69.5 - 120	
209 Bi	2132954.50	0.51	2013556.00	105.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000273

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 21 2018 04:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.18	1.318	ppb	1.21	100.	
11 B	111.1	11.11	ppb	4.05	1000.	
23 Na	6,721.	672.1	ppb	1.44	200000.	
25 Mg	96,520.	9,652.	ppb	2.42	200000.	
27 Al	238,800.	23,880.	ppb	2.21	200000.	
28 Si	2,912.	291.2	ppb	13.08	#VALUE!	
29 Si	2,178.	217.8	ppb	16.55	10000.	
39 K	50,530.	5,053.	ppb	2.58	200000.	
43 Ca	127,400.	12,740.	ppb	2.12	#VALUE!	
44 Ca	124,400.	12,440.	ppb	2.39	200000.	
51 V	431.8	43.18	ppb	1.40	1000.	
52 Cr	249.6	24.96	ppb	1.86	2000.	
53 Cr	272.7	27.27	ppb	2.30	#VALUE!	
55 Mn	4,814.	481.4	ppb	1.94	2000.	
56 Fe	264,800.	26,480.	ppb	0.94	#VALUE!	
57 Fe	260,000.	26,000.	ppb	0.61	100000.	
59 Co	70.33	7.033	ppb	0.96	1000.	
60 Ni	218.2	21.82	ppb	2.08	1000.	
63 Cu	205.3	20.53	ppb	1.28	#VALUE!	
65 Cu	208.3	20.83	ppb	1.64	2000.	
66 Zn	747.2	74.72	ppb	1.06	2000.	
68 Zn	871.6	87.16	ppb	2.42	#VALUE!	
75 As	86.53	8.653	ppb	1.66	1000.	
82 Se	8.313	0.8313	ppb	51.46	1000.	
88 Sr	777.8	77.78	ppb	2.68	2000.	
98 Mo	3.361	0.3361	ppb	7.47	1000.	
107 Ag	1.14	0.114	ppb	5.28	100.	
109 Ag	1.014	0.1014	ppb	2.37	#VALUE!	
111 Cd	4.428	0.4428	ppb	7.27	#VALUE!	
114 Cd	2.83	0.283	ppb	3.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	59.8	5.98	ppb	1.94	1000.	
120 Sn	60.79	6.079	ppb	2.33	#VALUE!	
121 Sb	1.798	0.1798	ppb	3.67	#VALUE!	
123 Sb	1.944	0.1944	ppb	5.21	1000.	
135 Ba	4,403.	440.3	ppb	2.16	2000.	
137 Ba	4,400.	440.	ppb	1.72	#VALUE!	
182 W	0.9594	0.0959	ppb	15.59	1000.	
203 Tl	4.174	0.4174	ppb	2.93	1000.	
205 Tl	4.385	0.4385	ppb	2.06	#VALUE!	
208 Pb	200.5	20.05	ppb	1.40	2000.	
232 Th	127.5	12.75	ppb	1.65	1000.	
238 U	13.21	1.321	ppb	2.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3450427.80	1.71	3258324.00	105.9	69.5 - 120	
45 Sc	3156356.30	1.82	2896530.80	109.0	69.5 - 120	
89 Y	4170796.30	1.35	3408096.80	122.4	69.5 - 120	IS Fai
159 Tb	4033178.80	1.85	3559216.30	113.3	69.5 - 120	
209 Bi	2167596.30	1.14	2013556.00	107.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000274

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 21 2018 04:08 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-004
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.25	1.025	ppb	2.44	100.	
11 B	146.	14.6	ppb	3.75	1000.	
23 Na	2,746.	274.6	ppb	1.38	200000.	
25 Mg	128,400.	12,840.	ppb	0.36	200000.	
27 Al	216,100.	21,610.	ppb	0.45	200000.	
28 Si	3,145.	314.5	ppb	9.12	#VALUE!	
29 Si	2,317.	231.7	ppb	9.09	10000.	
39 K	48,690.	4,869.	ppb	1.47	200000.	
43 Ca	1,247,000.	124,700.	ppb	0.98	#VALUE!	
44 Ca	1,210,000.	121,000.	ppb	0.92	200000.	
51 V	391.	39.1	ppb	0.85	1000.	
52 Cr	190.7	19.07	ppb	0.69	2000.	
53 Cr	205.	20.5	ppb	1.80	#VALUE!	
55 Mn	3,352.	335.2	ppb	0.42	2000.	
56 Fe	173,300.	17,330.	ppb	0.79	#VALUE!	
57 Fe	173,200.	17,320.	ppb	0.60	100000.	
59 Co	74.1	7.41	ppb	1.46	1000.	
60 Ni	142.3	14.23	ppb	1.00	1000.	
63 Cu	119.1	11.91	ppb	1.59	#VALUE!	
65 Cu	123.	12.3	ppb	1.17	2000.	
66 Zn	487.4	48.74	ppb	0.94	2000.	
68 Zn	576.7	57.67	ppb	1.77	#VALUE!	
75 As	31.97	3.197	ppb	5.92	1000.	
82 Se	9.156	0.9156	ppb	23.09	1000.	
88 Sr	2,768.	276.8	ppb	0.48	2000.	
98 Mo	2.73	0.273	ppb	5.12	1000.	
107 Ag	1.044	0.1044	ppb	0.28	100.	
109 Ag	0.8352	0.0835	ppb	7.96	#VALUE!	
111 Cd	3.629	0.3629	ppb	12.06	#VALUE!	
114 Cd	1.649	0.1649	ppb	10.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.54	5.654	ppb	2.51	1000.	
120 Sn	55.67	5.567	ppb	1.30	#VALUE!	
121 Sb	2.139	0.2139	ppb	1.80	#VALUE!	
123 Sb	2.06	0.206	ppb	15.35	1000.	
135 Ba	3,291.	329.1	ppb	0.92	2000.	
137 Ba	3,259.	325.9	ppb	0.46	#VALUE!	
182 W	0.7856	0.0786	ppb	6.49	1000.	
203 Tl	3.716	0.3716	ppb	7.58	1000.	
205 Tl	3.841	0.3841	ppb	4.53	#VALUE!	
208 Pb	130.4	13.04	ppb	0.97	2000.	
232 Th	92.67	9.267	ppb	1.31	1000.	
238 U	18.61	1.861	ppb	1.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3371271.50	1.50	3258324.00	103.5	69.5 - 120	
45 Sc	3154663.30	1.10	2896530.80	108.9	69.5 - 120	
89 Y	4136786.50	1.23	3408096.80	121.4	69.5 - 120	IS Fai
159 Tb	4024150.00	0.15	3559216.30	113.1	69.5 - 120	
209 Bi	2144725.80	0.53	2013556.00	106.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000275

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 21 2018 04:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.915	2.583	ppb	1.94	100.	
11 B	112.5	22.5	ppb	2.63	1000.	
23 Na	1,933.	386.6	ppb	0.17	200000.	
25 Mg	87,750.	17,550.	ppb	0.81	200000.	
27 Al	189,550.	37,910.	ppb	0.90	200000.	
28 Si	3,117.	623.4	ppb	10.71	#VALUE!	
29 Si	2,549.5	509.9	ppb	1.84	10000.	
39 K	44,745.	8,949.	ppb	1.45	200000.	
43 Ca	386,800.	77,360.	ppb	0.73	#VALUE!	
44 Ca	369,250.	73,850.	ppb	0.99	200000.	
51 V	782.5	156.5	ppb	1.27	1000.	
52 Cr	181.8	36.36	ppb	1.72	2000.	
53 Cr	199.85	39.97	ppb	2.75	#VALUE!	
55 Mn	6,295.	1,259.	ppb	1.59	2000.	
56 Fe	386,700.	77,340.	ppb	2.21	#VALUE!	
57 Fe	375,000.	75,000.	ppb	1.29	100000.	
59 Co	83.25	16.65	ppb	1.67	1000.	
60 Ni	147.95	29.59	ppb	1.46	1000.	
63 Cu	260.75	52.15	ppb	2.39	#VALUE!	
65 Cu	262.8	52.56	ppb	3.02	2000.	
66 Zn	459.15	91.83	ppb	1.95	2000.	
68 Zn	588.	117.6	ppb	1.55	#VALUE!	
75 As	494.1	98.82	ppb	1.59	1000.	
82 Se	8.415	1.683	ppb	12.81	1000.	
88 Sr	973.	194.6	ppb	1.81	2000.	
98 Mo	20.49	4.098	ppb	2.05	1000.	
107 Ag	0.942	0.1884	ppb	6.16	100.	
109 Ag	0.7445	0.1489	ppb	4.84	#VALUE!	
111 Cd	5.24	1.048	ppb	10.38	#VALUE!	
114 Cd	2.6785	0.5357	ppb	4.28	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.05	10.21	ppb	1.50	1000.	
120 Sn	51.45	10.29	ppb	0.73	#VALUE!	
121 Sb	4.1815	0.8363	ppb	1.21	#VALUE!	
123 Sb	4.1605	0.8321	ppb	4.00	1000.	
135 Ba	4,443.5	888.7	ppb	2.36	2000.	
137 Ba	4,396.5	879.3	ppb	0.90	#VALUE!	
182 W	0.9215	0.1843	ppb	5.19	1000.	
203 Tl	3.8835	0.7767	ppb	5.05	1000.	
205 Tl	3.9175	0.7835	ppb	2.14	#VALUE!	
208 Pb	237.25	47.45	ppb	0.79	2000.	
232 Th	93.75	18.75	ppb	0.24	1000.	
238 U	13.11	2.622	ppb	0.80	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3365039.30	2.07	3258324.00	103.3	69.5 - 120	
45 Sc	3167670.30	1.45	2896530.80	109.4	69.5 - 120	
89 Y	4475368.00	1.22	3408096.80	131.3	69.5 - 120	IS Fai
159 Tb	3996873.30	1.13	3559216.30	112.3	69.5 - 120	
209 Bi	2080624.10	0.46	2013556.00	103.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000276

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\040SMPL.D\040SMPL.D#
Date Acquired: Mar 21 2018 04:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.09	1.509	ppb	3.15	100.	
11 B	132.8	13.28	ppb	3.12	1000.	
23 Na	2,313.	231.3	ppb	0.96	200000.	
25 Mg	103,900.	10,390.	ppb	1.21	200000.	
27 Al	221,500.	22,150.	ppb	0.78	200000.	
28 Si	2,652.	265.2	ppb	19.23	#VALUE!	
29 Si	1,726.	172.6	ppb	7.51	10000.	
39 K	51,890.	5,189.	ppb	1.40	200000.	
43 Ca	448,100.	44,810.	ppb	0.85	#VALUE!	
44 Ca	426,600.	42,660.	ppb	0.07	200000.	
51 V	972.1	97.21	ppb	0.75	1000.	
52 Cr	223.4	22.34	ppb	1.39	2000.	
53 Cr	241.9	24.19	ppb	0.92	#VALUE!	
55 Mn	7,739.	773.9	ppb	1.01	2000.	
56 Fe	470,700.	47,070.	ppb	1.02	#VALUE!	
57 Fe	460,700.	46,070.	ppb	1.23	100000.	
59 Co	102.3	10.23	ppb	1.92	1000.	
60 Ni	186.5	18.65	ppb	0.98	1000.	
63 Cu	322.7	32.27	ppb	2.25	#VALUE!	
65 Cu	325.8	32.58	ppb	1.76	2000.	
66 Zn	586.7	58.67	ppb	1.92	2000.	
68 Zn	740.7	74.07	ppb	2.97	#VALUE!	
75 As	607.4	60.74	ppb	1.34	1000.	
82 Se	8.359	0.8359	ppb	14.34	1000.	
88 Sr	1,190.	119.	ppb	0.71	2000.	
98 Mo	24.64	2.464	ppb	2.81	1000.	
107 Ag	1.15	0.115	ppb	5.55	100.	
109 Ag	0.8823	0.0882	ppb	2.80	#VALUE!	
111 Cd	6.101	0.6101	ppb	9.70	#VALUE!	
114 Cd	3.439	0.3439	ppb	3.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	59.44	5.944	ppb	1.20	1000.	
120 Sn	59.78	5.978	ppb	0.94	#VALUE!	
121 Sb	5.016	0.5016	ppb	5.33	#VALUE!	
123 Sb	4.994	0.4994	ppb	2.04	1000.	
135 Ba	5,137.	513.7	ppb	0.30	2000.	
137 Ba	5,119.	511.9	ppb	1.57	#VALUE!	
182 W	1.029	0.1029	ppb	8.62	1000.	
203 Tl	4.476	0.4476	ppb	6.24	1000.	
205 Tl	4.354	0.4354	ppb	1.24	#VALUE!	
208 Pb	268.	26.8	ppb	0.80	2000.	
232 Th	103.9	10.39	ppb	0.73	1000.	
238 U	14.81	1.481	ppb	1.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3461125.50	0.34	3258324.00	106.2	69.5 - 120	
45 Sc	3184042.80	0.41	2896530.80	109.9	69.5 - 120	
89 Y	4265802.00	1.02	3408096.80	125.2	69.5 - 120	IS Fai
159 Tb	4016278.30	0.37	3559216.30	112.8	69.5 - 120	
209 Bi	2162205.30	0.46	2013556.00	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000277

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\041SMPL.D\041SMPL.D#
Date Acquired: Mar 21 2018 04:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0021	-0.0021	ppb	122.04	100.	
11 B	0.6782	0.6782	ppb	15.79	1000.	
23 Na	1.402	1.402	ppb	27.63	200000.	
25 Mg	0.5727	0.5727	ppb	22.94	200000.	
27 Al	0.9122	0.9122	ppb	21.93	200000.	
28 Si	-28.37	-28.37	ppb	118.33	#VALUE!	
29 Si	-112.9	-112.9	ppb	19.47	10000.	LOW
39 K	-7.298	-7.298	ppb	38.79	200000.	
43 Ca	3.348	3.348	ppb	151.13	#VALUE!	
44 Ca	-2.619	-2.619	ppb	17.85	200000.	
51 V	-0.0492	-0.0492	ppb	46.73	1000.	
52 Cr	-0.0485	-0.0485	ppb	20.98	2000.	
53 Cr	-0.8219	-0.8219	ppb	0.61	#VALUE!	
55 Mn	0.0054	0.0054	ppb	195.07	2000.	
56 Fe	-7.406	-7.406	ppb	45.99	#VALUE!	
57 Fe	-6.778	-6.778	ppb	26.51	100000.	
59 Co	-0.0054	-0.0054	ppb	16.25	1000.	
60 Ni	-0.004	-0.004	ppb	231.42	1000.	
63 Cu	0.0104	0.0104	ppb	12.06	#VALUE!	
65 Cu	0.0088	0.0088	ppb	190.39	2000.	
66 Zn	-0.0785	-0.0785	ppb	12.79	2000.	
68 Zn	-0.2151	-0.2151	ppb	70.85	#VALUE!	
75 As	-0.1753	-0.1753	ppb	18.09	1000.	
82 Se	0.0142	0.0142	ppb	1847.60	1000.	
88 Sr	-0.0007	-0.0007	ppb	595.29	2000.	
98 Mo	0.0121	0.0121	ppb	31.46	1000.	
107 Ag	0.0018	0.0018	ppb	64.37	100.	
109 Ag	-0.0006	-0.0006	ppb	331.04	#VALUE!	
111 Cd	-0.16	-0.16	ppb	13.32	#VALUE!	
114 Cd	0.0023	0.0023	ppb	72.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0148	-0.0148	ppb	192.14	1000.	
120 Sn	0.009	0.009	ppb	45.59	#VALUE!	
121 Sb	-0.004	-0.004	ppb	235.36	#VALUE!	
123 Sb	0.0018	0.0018	ppb	532.73	1000.	
135 Ba	0.0197	0.0197	ppb	85.96	2000.	
137 Ba	0.0191	0.0191	ppb	30.41	#VALUE!	
182 W	-0.0002	-0.0002	ppb	3023.60	1000.	
203 Tl	-0.0007	-0.0007	ppb	79.12	1000.	
205 Tl	0.0011	0.0011	ppb	331.53	#VALUE!	
208 Pb	0.0092	0.0092	ppb	39.31	2000.	
232 Th	0.002	0.002	ppb	42.06	1000.	
238 U	0.0001	0.0001	ppb	122.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3089092.00	3.31	3258324.00	94.8	69.5 - 120	
45 Sc	2818837.80	2.39	2896530.80	97.3	69.5 - 120	
89 Y	3491478.50	2.01	3408096.80	102.4	69.5 - 120	
159 Tb	3587935.30	2.01	3559216.30	100.8	69.5 - 120	
209 Bi	1997601.40	2.19	2013556.00	99.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000278

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\042_CCV.D\042_CCV.D#
Date Acquired: Mar 21 2018 04:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.48	ppb	2.37	25	97.92	
11 B	24.98	ppb	1.36	25	99.92	
23 Na	4,845.	ppb	1.15	5,000	96.9	
25 Mg	4,952.	ppb	1.87	5,000	99.04	
27 Al	502.7	ppb	1.76	500	100.54	
28 Si	464.1	ppb	10.00	500	92.82	
29 Si	367.5	ppb	7.77	500	73.5	Fail
39 K	5,029.	ppb	0.62	5,000	100.58	
43 Ca	5,112.	ppb	1.28	5,000	102.24	
44 Ca	5,197.	ppb	1.28	5,000	103.94	
51 V	24.19	ppb	2.68	25	96.76	
52 Cr	24.45	ppb	1.63	25	97.8	
53 Cr	24.03	ppb	0.92	25	96.12	
55 Mn	24.66	ppb	2.41	25	98.64	
56 Fe	4,912.	ppb	1.37	5,000	98.24	
57 Fe	5,094.	ppb	1.76	5,000	101.88	
59 Co	24.59	ppb	2.71	25	98.36	
60 Ni	24.61	ppb	2.62	25	98.44	
63 Cu	24.76	ppb	2.83	25	99.04	
65 Cu	24.4	ppb	2.47	25	97.6	
66 Zn	24.5	ppb	2.43	25	98	
68 Zn	24.27	ppb	2.69	25	97.08	
75 As	24.48	ppb	2.58	25	97.92	
82 Se	24.93	ppb	2.92	25	99.72	
88 Sr	25.25	ppb	1.14	25	101	
98 Mo	25.19	ppb	1.97	25	100.76	
107 Ag	25.43	ppb	2.33	25	101.72	
109 Ag	25.64	ppb	1.88	25	102.56	
111 Cd	25.48	ppb	2.62	25	101.92	
114 Cd	25.56	ppb	2.59	25	102.24	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.66	ppb	2.14	25	102.64	
120 Sn	25.75	ppb	1.14	25	103	
121 Sb	25.73	ppb	1.59	25	102.92	
123 Sb	25.76	ppb	2.02	25	103.04	
135 Ba	26.25	ppb	2.21	25	105	
137 Ba	25.52	ppb	2.68	25	102.08	
182 W	25.1	ppb	1.60	25	100.4	
203 Tl	25.25	ppb	1.51	25	101	
205 Tl	25.43	ppb	1.38	25	101.72	
208 Pb	25.29	ppb	1.45	25	101.16	
232 Th	24.99	ppb	1.10	25	99.96	
238 U	25.	ppb	1.93	25	100	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3397456.00	1.74	3258324.00	104.3	80 - 120.4	
45 Sc	3042550.50	1.34	2896530.80	105.0	80 - 120.4	
89 Y	3763437.00	1.11	3408096.80	110.4	80 - 120.4	
159 Tb	3880892.80	0.86	3559216.30	109.0	80 - 120.4	
209 Bi	2135315.80	0.65	2013556.00	106.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000279

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\043_CCB.D\043_CCB.D#
Date Acquired: Mar 21 2018 04:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0018	ppb	66.41	1.00	
11 B	0.6455	ppb	6.98	1.00	
23 Na	1.109	ppb	15.96	1.00	
25 Mg	0.389	ppb	18.27	1.00	
27 Al	0.4407	ppb	11.60	1.00	
28 Si	-42.35	ppb	47.13	1.00	
29 Si	-116.6	ppb	13.73	1.00	
39 K	-7.526	ppb	11.12	1.00	
43 Ca	3.154	ppb	60.81	1.00	
44 Ca	-2.505	ppb	24.59	1.00	
51 V	-0.0027	ppb	660.39	1.00	
52 Cr	-0.0615	ppb	17.47	1.00	
53 Cr	-0.6152	ppb	12.37	1.00	
55 Mn	0.0019	ppb	246.44	1.00	
56 Fe	-3.565	ppb	43.65	1.00	
57 Fe	-4.412	ppb	53.02	1.00	
59 Co	-0.0075	ppb	39.87	1.00	
60 Ni	-0.0099	ppb	67.79	1.00	
63 Cu	-0.0037	ppb	39.87	1.00	
65 Cu	-0.0016	ppb	438.32	1.00	
66 Zn	-0.0425	ppb	139.50	1.00	
68 Zn	-0.204	ppb	56.52	1.00	
75 As	-0.033	ppb	541.10	1.00	
82 Se	0.2555	ppb	27.31	1.00	
88 Sr	0.0014	ppb	188.26	1.00	
98 Mo	0.0169	ppb	18.85	1.00	
107 Ag	0.002	ppb	102.98	1.00	
109 Ag	0.0021	ppb	66.67	1.00	
111 Cd	-0.094	ppb	42.94	1.00	
114 Cd	0.0002	ppb	1939.20	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0146	ppb	97.33	1.00	
120 Sn	0.0165	ppb	11.92	1.00	
121 Sb	0.0023	ppb	326.38	1.00	
123 Sb	-0.0002	ppb	2945.70	1.00	
135 Ba	0.0197	ppb	73.62	1.00	
137 Ba	-0.0042	ppb	24.94	1.00	
182 W	0.0164	ppb	34.54	1.00	
203 Tl	0.0032	ppb	27.73	1.00	
205 Tl	0.0049	ppb	63.36	1.00	
208 Pb	0.0076	ppb	34.48	1.00	
232 Th	0.0156	ppb	24.41	1.00	
238 U	0.0002	ppb	736.12	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3222396.30	1.71	3258324.00	98.9	79.5 - 120	
45 Sc	2865224.80	0.94	2896530.80	98.9	79.5 - 120	
89 Y	3495700.00	0.64	3408096.80	102.6	79.5 - 120	
159 Tb	3603146.30	1.45	3559216.30	101.2	79.5 - 120	
209 Bi	2012405.40	1.36	2013556.00	99.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000280

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\044SMPL.D\044SMPL.D#
Date Acquired: Mar 21 2018 04:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBSLC20IMS1
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0083	-0.0017	ppb	141.89	100.	
11 B	2.5775	0.5155	ppb	12.03	1000.	
23 Na	34.225	6.845	ppb	6.36	200000.	
25 Mg	14.	2.8	ppb	1.03	200000.	
27 Al	11.43	2.286	ppb	4.27	200000.	
28 Si	-254.65	-50.93	ppb	13.60	#VALUE!	
29 Si	-589.	-117.8	ppb	9.82	10000.	LOW
39 K	-9.78	-1.956	ppb	55.78	200000.	
43 Ca	26.675	5.335	ppb	104.61	#VALUE!	
44 Ca	28.015	5.603	ppb	43.67	200000.	
51 V	-0.2673	-0.0535	ppb	22.04	1000.	
52 Cr	0.9755	0.1951	ppb	9.09	2000.	
53 Cr	23.21	4.642	ppb	0.29	#VALUE!	
55 Mn	0.4032	0.0806	ppb	13.02	2000.	
56 Fe	1.245	0.249	ppb	1565.50	#VALUE!	
57 Fe	-7.595	-1.519	ppb	57.95	100000.	
59 Co	-0.028	-0.0056	ppb	63.74	1000.	
60 Ni	0.6035	0.1207	ppb	14.50	1000.	
63 Cu	0.64	0.128	ppb	3.24	#VALUE!	
65 Cu	0.586	0.1172	ppb	19.41	2000.	
66 Zn	0.722	0.1444	ppb	27.92	2000.	
68 Zn	-0.7895	-0.1579	ppb	94.81	#VALUE!	
75 As	-1.169	-0.2338	ppb	66.94	1000.	
82 Se	-0.951	-0.1902	ppb	147.90	1000.	
88 Sr	0.1897	0.0379	ppb	18.80	2000.	
98 Mo	0.1156	0.0231	ppb	20.53	1000.	
107 Ag	0.015	0.003	ppb	38.07	100.	
109 Ag	0.0082	0.0016	ppb	82.39	#VALUE!	
111 Cd	-0.4134	-0.0827	ppb	26.64	#VALUE!	
114 Cd	0.0256	0.0051	ppb	302.11	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.29	8.658	ppb	0.89	1000.	
120 Sn	43.415	8.683	ppb	2.37	#VALUE!	
121 Sb	0.1034	0.0207	ppb	3.97	#VALUE!	
123 Sb	0.1321	0.0264	ppb	36.93	1000.	
135 Ba	0.1929	0.0386	ppb	16.59	2000.	
137 Ba	0.2236	0.0447	ppb	31.51	#VALUE!	
182 W	0.1307	0.0261	ppb	15.08	1000.	
203 Tl	0.0033	0.0007	ppb	395.06	1000.	
205 Tl	-0.0047	-0.0009	ppb	208.62	#VALUE!	
208 Pb	0.3272	0.0654	ppb	15.43	2000.	
232 Th	0.0876	0.0175	ppb	32.49	1000.	
238 U	-0.0002	0.	ppb	3077.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177304.00	0.72	3258324.00	97.5	69.5 - 120	
45 Sc	2840778.80	0.88	2896530.80	98.1	69.5 - 120	
89 Y	3528480.00	0.74	3408096.80	103.5	69.5 - 120	
159 Tb	3722445.30	0.80	3559216.30	104.6	69.5 - 120	
209 Bi	2038035.60	1.11	2013556.00	101.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000281

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\045SMPL.D\045SMPL.D#
Date Acquired: Mar 21 2018 04:35 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSOLC20IMS1
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.745	9.749	ppb	0.58	100.	
11 B	507.5	101.5	ppb	1.05	1000.	
23 Na	7,430.	1,486.	ppb	2.78	200000.	
25 Mg	5,295.	1,059.	ppb	1.81	200000.	
27 Al	2,089.	417.8	ppb	1.02	200000.	
28 Si	620.5	124.1	ppb	17.14	#VALUE!	
29 Si	232.85	46.57	ppb	40.71	10000.	
39 K	10,200.	2,040.	ppb	2.03	200000.	
43 Ca	2,945.	589.	ppb	5.12	#VALUE!	
44 Ca	2,609.5	521.9	ppb	1.59	200000.	
51 V	493.3	98.66	ppb	2.68	1000.	
52 Cr	197.15	39.43	ppb	2.66	2000.	
53 Cr	219.9	43.98	ppb	1.22	#VALUE!	
55 Mn	501.5	100.3	ppb	2.76	2000.	
56 Fe	941.	188.2	ppb	2.97	#VALUE!	
57 Fe	983.	196.6	ppb	4.08	100000.	
59 Co	508.	101.6	ppb	3.81	1000.	
60 Ni	501.	100.2	ppb	3.53	1000.	
63 Cu	249.55	49.91	ppb	2.33	#VALUE!	
65 Cu	250.4	50.08	ppb	2.74	2000.	
66 Zn	487.85	97.57	ppb	3.25	2000.	
68 Zn	554.	110.8	ppb	3.11	#VALUE!	
75 As	101.8	20.36	ppb	2.78	1000.	
82 Se	98.4	19.68	ppb	3.27	1000.	
88 Sr	524.5	104.9	ppb	1.17	2000.	
98 Mo	103.65	20.73	ppb	1.92	1000.	
107 Ag	52.1	10.42	ppb	3.03	100.	
109 Ag	52.65	10.53	ppb	4.36	#VALUE!	
111 Cd	260.25	52.05	ppb	2.79	#VALUE!	
114 Cd	260.65	52.13	ppb	2.43	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	567.5	113.5	ppb	1.46	1000.	
120 Sn	566.	113.2	ppb	0.63	#VALUE!	
121 Sb	105.9	21.18	ppb	2.43	#VALUE!	
123 Sb	105.6	21.12	ppb	1.98	1000.	
135 Ba	2,097.	419.4	ppb	0.79	2000.	
137 Ba	2,081.5	416.3	ppb	1.30	#VALUE!	
182 W	103.15	20.63	ppb	1.40	1000.	
203 Tl	105.05	21.01	ppb	1.42	1000.	
205 Tl	105.55	21.11	ppb	1.66	#VALUE!	
208 Pb	106.7	21.34	ppb	1.65	2000.	
232 Th	103.8	20.76	ppb	1.87	1000.	
238 U	103.95	20.79	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3417727.30	1.31	3258324.00	104.9	69.5 - 120	
45 Sc	2994627.80	0.60	2896530.80	103.4	69.5 - 120	
89 Y	3732279.00	1.53	3408096.80	109.5	69.5 - 120	
159 Tb	3861717.50	0.48	3559216.30	108.5	69.5 - 120	
209 Bi	2093788.80	0.99	2013556.00	104.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000282

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\046SMPL.D\046SMPL.D#
Date Acquired: Mar 21 2018 04:39 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-008
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	19.6	3.92	ppb	2.73	100.	
11 B	303.45	60.69	ppb	4.37	1000.	
23 Na	17,080.	3,416.	ppb	3.59	200000.	
25 Mg	190,000.	38,000.	ppb	2.07	200000.	
27 Al	444,450.	88,890.	ppb	0.57	200000.	
28 Si	4,755.	951.	ppb	4.00	#VALUE!	
29 Si	4,538.5	907.7	ppb	5.31	10000.	
39 K	121,200.	24,240.	ppb	1.32	200000.	
43 Ca	1,042,500.	208,500.	ppb	1.91	#VALUE!	
44 Ca	1,020,500.	204,100.	ppb	0.82	200000.	>LDR
51 V	780.	156.	ppb	0.92	1000.	
52 Cr	323.7	64.74	ppb	0.78	2000.	
53 Cr	330.8	66.16	ppb	2.21	#VALUE!	
55 Mn	1,941.	388.2	ppb	0.61	2000.	
56 Fe	297,800.	59,560.	ppb	0.94	#VALUE!	
57 Fe	293,550.	58,710.	ppb	1.23	100000.	
59 Co	87.9	17.58	ppb	0.89	1000.	
60 Ni	298.7	59.74	ppb	2.39	1000.	
63 Cu	197.55	39.51	ppb	2.29	#VALUE!	
65 Cu	201.05	40.21	ppb	2.99	2000.	
66 Zn	781.	156.2	ppb	2.34	2000.	
68 Zn	953.5	190.7	ppb	2.19	#VALUE!	
75 As	152.9	30.58	ppb	2.11	1000.	
82 Se	9.04	1.808	ppb	12.99	1000.	
88 Sr	3,347.5	669.5	ppb	0.30	2000.	
98 Mo	3.791	0.7582	ppb	2.33	1000.	
107 Ag	1.6435	0.3287	ppb	6.16	100.	
109 Ag	1.2485	0.2497	ppb	3.23	#VALUE!	
111 Cd	5.19	1.038	ppb	3.12	#VALUE!	
114 Cd	-0.168	-0.0336	ppb	40.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	64.15	12.83	ppb	1.07	1000.	
120 Sn	64.7	12.94	ppb	1.41	#VALUE!	
121 Sb	6.135	1.227	ppb	2.67	#VALUE!	
123 Sb	6.18	1.236	ppb	2.34	1000.	
135 Ba	6,560.	1,312.	ppb	1.02	2000.	
137 Ba	6,410.	1,282.	ppb	0.82	#VALUE!	
182 W	1.4955	0.2991	ppb	4.88	1000.	
203 Tl	7.605	1.521	ppb	2.99	1000.	
205 Tl	7.56	1.512	ppb	2.43	#VALUE!	
208 Pb	268.25	53.65	ppb	1.69	2000.	
232 Th	185.55	37.11	ppb	2.30	1000.	
238 U	33.78	6.756	ppb	1.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3522734.50	2.63	3258324.00	108.1	69.5 - 120	
45 Sc	3317643.30	1.64	2896530.80	114.5	69.5 - 120	
89 Y	4772894.00	1.63	3408096.80	140.0	69.5 - 120	IS Fai
159 Tb	3986315.00	1.49	3559216.30	112.0	69.5 - 120	
209 Bi	2021849.10	1.98	2013556.00	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000283

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\047SMPL.D\047SMPL.D#
Date Acquired: Mar 21 2018 04:43 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-008
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	24.31	2.431	ppb	0.75	100.	
11 B	370.1	37.01	ppb	2.89	1000.	
23 Na	20,990.	2,099.	ppb	2.75	200000.	
25 Mg	236,200.	23,620.	ppb	1.55	200000.	
27 Al	545,500.	54,550.	ppb	1.87	200000.	
28 Si	5,305.	530.5	ppb	9.33	#VALUE!	
29 Si	4,446.	444.6	ppb	8.76	10000.	
39 K	148,500.	14,850.	ppb	1.59	200000.	
43 Ca	1,295,000.	129,500.	ppb	2.39	#VALUE!	
44 Ca	1,255,000.	125,500.	ppb	2.02	200000.	
51 V	1,011.	101.1	ppb	1.01	1000.	
52 Cr	411.6	41.16	ppb	0.56	2000.	
53 Cr	421.3	42.13	ppb	0.21	#VALUE!	
55 Mn	2,509.	250.9	ppb	1.30	2000.	
56 Fe	387,200.	38,720.	ppb	0.96	#VALUE!	
57 Fe	382,800.	38,280.	ppb	1.67	100000.	
59 Co	114.9	11.49	ppb	0.89	1000.	
60 Ni	390.8	39.08	ppb	0.27	1000.	
63 Cu	260.8	26.08	ppb	0.56	#VALUE!	
65 Cu	264.9	26.49	ppb	1.31	2000.	
66 Zn	1,040.	104.	ppb	0.75	2000.	
68 Zn	1,263.	126.3	ppb	0.79	#VALUE!	
75 As	197.9	19.79	ppb	0.61	1000.	
82 Se	11.37	1.137	ppb	13.30	1000.	
88 Sr	4,367.	436.7	ppb	1.46	2000.	
98 Mo	4.797	0.4797	ppb	2.56	1000.	
107 Ag	2.165	0.2165	ppb	5.62	100.	
109 Ag	1.504	0.1504	ppb	2.08	#VALUE!	
111 Cd	5.789	0.5789	ppb	9.97	#VALUE!	
114 Cd	-0.0935	-0.0094	ppb	338.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	76.97	7.697	ppb	1.17	1000.	
120 Sn	78.38	7.838	ppb	0.81	#VALUE!	
121 Sb	7.404	0.7404	ppb	2.62	#VALUE!	
123 Sb	7.165	0.7165	ppb	4.25	1000.	
135 Ba	7,915.	791.5	ppb	0.29	2000.	
137 Ba	7,917.	791.7	ppb	0.27	#VALUE!	
182 W	1.722	0.1722	ppb	8.33	1000.	
203 Tl	8.879	0.8879	ppb	1.25	1000.	
205 Tl	9.034	0.9034	ppb	0.77	#VALUE!	
208 Pb	320.	32.	ppb	0.11	2000.	
232 Th	216.6	21.66	ppb	0.19	1000.	
238 U	39.57	3.957	ppb	1.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3497062.00	0.49	3258324.00	107.3	69.5 - 120	
45 Sc	3277935.30	1.38	2896530.80	113.2	69.5 - 120	
89 Y	4498752.00	0.47	3408096.80	132.0	69.5 - 120	IS Fai
159 Tb	4061105.80	0.07	3559216.30	114.1	69.5 - 120	
209 Bi	2095520.80	0.40	2013556.00	104.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000284

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\048SMPL.D\048SMPL.D#
Date Acquired: Mar 21 2018 04:47 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-009
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.58	2.516	ppb	1.48	100.	
11 B	149.15	29.83	ppb	2.94	1000.	
23 Na	9,855.	1,971.	ppb	0.89	200000.	
25 Mg	115,200.	23,040.	ppb	1.00	200000.	
27 Al	265,100.	53,020.	ppb	0.90	200000.	
28 Si	4,663.	932.6	ppb	4.40	#VALUE!	
29 Si	4,519.5	903.9	ppb	7.21	10000.	
39 K	55,750.	11,150.	ppb	0.87	200000.	
43 Ca	123,700.	24,740.	ppb	0.81	#VALUE!	
44 Ca	120,000.	24,000.	ppb	0.83	200000.	
51 V	429.85	85.97	ppb	1.03	1000.	
52 Cr	232.05	46.41	ppb	2.19	2000.	
53 Cr	254.5	50.9	ppb	1.04	#VALUE!	
55 Mn	3,883.5	776.7	ppb	0.71	2000.	
56 Fe	195,750.	39,150.	ppb	1.55	#VALUE!	
57 Fe	192,300.	38,460.	ppb	1.34	100000.	
59 Co	142.2	28.44	ppb	1.84	1000.	
60 Ni	197.85	39.57	ppb	1.80	1000.	
63 Cu	170.	34.	ppb	2.56	#VALUE!	
65 Cu	170.35	34.07	ppb	3.46	2000.	
66 Zn	629.	125.8	ppb	2.15	2000.	
68 Zn	715.	143.	ppb	1.92	#VALUE!	
75 As	25.895	5.179	ppb	5.56	1000.	
82 Se	5.565	1.113	ppb	9.84	1000.	
88 Sr	685.	137.	ppb	1.49	2000.	
98 Mo	15.03	3.006	ppb	2.20	1000.	
107 Ag	1.174	0.2348	ppb	1.28	100.	
109 Ag	0.937	0.1874	ppb	3.10	#VALUE!	
111 Cd	4.128	0.8256	ppb	7.47	#VALUE!	
114 Cd	1.6555	0.3311	ppb	7.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.2	11.04	ppb	1.10	1000.	
120 Sn	55.15	11.03	ppb	1.23	#VALUE!	
121 Sb	2.473	0.4946	ppb	1.70	#VALUE!	
123 Sb	2.5465	0.5093	ppb	4.26	1000.	
135 Ba	3,195.5	639.1	ppb	1.72	2000.	
137 Ba	3,169.	633.8	ppb	1.53	#VALUE!	
182 W	0.961	0.1922	ppb	13.76	1000.	
203 Tl	4.7415	0.9483	ppb	0.83	1000.	
205 Tl	4.591	0.9182	ppb	2.05	#VALUE!	
208 Pb	177.	35.4	ppb	1.08	2000.	
232 Th	131.2	26.24	ppb	1.08	1000.	
238 U	14.56	2.912	ppb	1.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3568063.30	2.03	3258324.00	109.5	69.5 - 120	
45 Sc	3284052.00	0.93	2896530.80	113.4	69.5 - 120	
89 Y	4519758.50	1.39	3408096.80	132.6	69.5 - 120	IS Fai
159 Tb	4120422.50	1.17	3559216.30	115.8	69.5 - 120	
209 Bi	2132628.30	1.39	2013556.00	105.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000285

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\049SMPL.D\049SMPL.D#
Date Acquired: Mar 21 2018 04:51 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-009
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.25	1.325	ppb	1.27	100.	
11 B	161.6	16.16	ppb	2.41	1000.	
23 Na	10,830.	1,083.	ppb	1.72	200000.	
25 Mg	123,900.	12,390.	ppb	0.53	200000.	
27 Al	282,600.	28,260.	ppb	0.61	200000.	
28 Si	4,476.	447.6	ppb	6.91	#VALUE!	
29 Si	3,414.	341.4	ppb	1.23	10000.	
39 K	60,270.	6,027.	ppb	0.71	200000.	
43 Ca	132,000.	13,200.	ppb	1.35	#VALUE!	
44 Ca	130,200.	13,020.	ppb	1.12	200000.	
51 V	485.	48.5	ppb	1.29	1000.	
52 Cr	270.5	27.05	ppb	0.89	2000.	
53 Cr	291.4	29.14	ppb	1.01	#VALUE!	
55 Mn	4,437.	443.7	ppb	0.61	2000.	
56 Fe	223,800.	22,380.	ppb	0.65	#VALUE!	
57 Fe	218,400.	21,840.	ppb	0.39	100000.	
59 Co	163.4	16.34	ppb	1.00	1000.	
60 Ni	230.3	23.03	ppb	0.89	1000.	
63 Cu	197.	19.7	ppb	1.00	#VALUE!	
65 Cu	198.	19.8	ppb	1.69	2000.	
66 Zn	737.9	73.79	ppb	1.46	2000.	
68 Zn	833.5	83.35	ppb	1.83	#VALUE!	
75 As	30.07	3.007	ppb	4.99	1000.	
82 Se	7.959	0.7959	ppb	43.22	1000.	
88 Sr	787.3	78.73	ppb	0.81	2000.	
98 Mo	17.64	1.764	ppb	5.47	1000.	
107 Ag	1.394	0.1394	ppb	4.56	100.	
109 Ag	1.152	0.1152	ppb	7.13	#VALUE!	
111 Cd	3.981	0.3981	ppb	8.72	#VALUE!	
114 Cd	2.021	0.2021	ppb	8.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.07	5.807	ppb	2.94	1000.	
120 Sn	58.37	5.837	ppb	0.56	#VALUE!	
121 Sb	2.899	0.2899	ppb	3.73	#VALUE!	
123 Sb	3.082	0.3082	ppb	10.86	1000.	
135 Ba	3,369.	336.9	ppb	1.29	2000.	
137 Ba	3,344.	334.4	ppb	1.16	#VALUE!	
182 W	1.044	0.1044	ppb	18.11	1000.	
203 Tl	4.919	0.4919	ppb	6.22	1000.	
205 Tl	4.925	0.4925	ppb	4.17	#VALUE!	
208 Pb	184.2	18.42	ppb	1.24	2000.	
232 Th	134.2	13.42	ppb	1.16	1000.	
238 U	15.54	1.554	ppb	2.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3599120.30	1.14	3258324.00	110.5	69.5 - 120	
45 Sc	3250900.00	0.08	2896530.80	112.2	69.5 - 120	
89 Y	4195294.00	0.16	3408096.80	123.1	69.5 - 120	IS Fai
159 Tb	4074321.50	0.62	3559216.30	114.5	69.5 - 120	
209 Bi	2163082.00	0.77	2013556.00	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000286

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\050SMPL.D\050SMPL.D#
Date Acquired: Mar 21 2018 04:55 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-010
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.23	2.646	ppb	1.16	100.	
11 B	137.85	27.57	ppb	2.24	1000.	
23 Na	16,420.	3,284.	ppb	0.22	200000.	
25 Mg	109,650.	21,930.	ppb	0.22	200000.	
27 Al	253,450.	50,690.	ppb	1.35	200000.	
28 Si	5,010.	1,002.	ppb	3.09	#VALUE!	
29 Si	4,773.	954.6	ppb	9.76	10000.	
39 K	58,750.	11,750.	ppb	0.59	200000.	
43 Ca	123,650.	24,730.	ppb	0.68	#VALUE!	
44 Ca	120,400.	24,080.	ppb	0.40	200000.	
51 V	459.15	91.83	ppb	1.14	1000.	
52 Cr	220.4	44.08	ppb	0.89	2000.	
53 Cr	241.55	48.31	ppb	0.75	#VALUE!	
55 Mn	6,240.	1,248.	ppb	0.55	2000.	
56 Fe	236,450.	47,290.	ppb	0.91	#VALUE!	
57 Fe	231,750.	46,350.	ppb	0.52	100000.	
59 Co	121.5	24.3	ppb	0.44	1000.	
60 Ni	246.8	49.36	ppb	0.87	1000.	
63 Cu	173.7	34.74	ppb	1.36	#VALUE!	
65 Cu	174.9	34.98	ppb	1.68	2000.	
66 Zn	621.5	124.3	ppb	0.90	2000.	
68 Zn	710.	142.	ppb	1.34	#VALUE!	
75 As	74.9	14.98	ppb	1.42	1000.	
82 Se	5.945	1.189	ppb	17.75	1000.	
88 Sr	691.5	138.3	ppb	1.21	2000.	
98 Mo	12.7	2.54	ppb	0.98	1000.	
107 Ag	1.0635	0.2127	ppb	7.69	100.	
109 Ag	0.855	0.171	ppb	5.85	#VALUE!	
111 Cd	3.9095	0.7819	ppb	4.47	#VALUE!	
114 Cd	0.8105	0.1621	ppb	16.06	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.6	10.92	ppb	1.19	1000.	
120 Sn	53.65	10.73	ppb	1.65	#VALUE!	
121 Sb	3.7455	0.7491	ppb	2.24	#VALUE!	
123 Sb	3.8375	0.7675	ppb	4.94	1000.	
135 Ba	3,198.	639.6	ppb	1.14	2000.	
137 Ba	3,178.5	635.7	ppb	1.66	#VALUE!	
182 W	1.0825	0.2165	ppb	5.77	1000.	
203 Tl	4.9465	0.9893	ppb	4.34	1000.	
205 Tl	4.9985	0.9997	ppb	1.87	#VALUE!	
208 Pb	236.85	47.37	ppb	0.69	2000.	
232 Th	125.25	25.05	ppb	0.66	1000.	
238 U	13.775	2.755	ppb	1.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3540136.50	1.61	3258324.00	108.6	69.5 - 120	
45 Sc	3255484.00	0.50	2896530.80	112.4	69.5 - 120	
89 Y	4363529.00	0.57	3408096.80	128.0	69.5 - 120	IS Fai
159 Tb	4029801.50	0.84	3559216.30	113.2	69.5 - 120	
209 Bi	2111726.00	0.41	2013556.00	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000287

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\051SMPL.D\051SMPL.D#
Date Acquired: Mar 21 2018 04:59 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-011
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.185	2.037	ppb	2.52	100.	
11 B	85.4	17.08	ppb	2.80	1000.	
23 Na	8,745.	1,749.	ppb	0.33	200000.	
25 Mg	98,150.	19,630.	ppb	0.67	200000.	
27 Al	194,550.	38,910.	ppb	1.19	200000.	
28 Si	3,373.5	674.7	ppb	17.89	#VALUE!	
29 Si	2,327.5	465.5	ppb	1.55	10000.	
39 K	43,525.	8,705.	ppb	1.28	200000.	
43 Ca	140,900.	28,180.	ppb	1.32	#VALUE!	
44 Ca	137,300.	27,460.	ppb	0.93	200000.	
51 V	327.55	65.51	ppb	1.41	1000.	
52 Cr	173.85	34.77	ppb	2.14	2000.	
53 Cr	188.3	37.66	ppb	2.52	#VALUE!	
55 Mn	4,375.5	875.1	ppb	1.96	2000.	
56 Fe	186,850.	37,370.	ppb	1.66	#VALUE!	
57 Fe	184,250.	36,850.	ppb	2.56	100000.	
59 Co	118.1	23.62	ppb	2.57	1000.	
60 Ni	220.2	44.04	ppb	2.99	1000.	
63 Cu	145.6	29.12	ppb	2.62	#VALUE!	
65 Cu	146.65	29.33	ppb	2.50	2000.	
66 Zn	495.6	99.12	ppb	3.23	2000.	
68 Zn	605.	121.	ppb	2.97	#VALUE!	
75 As	23.415	4.683	ppb	1.44	1000.	
82 Se	5.875	1.175	ppb	20.71	1000.	
88 Sr	610.	122.	ppb	1.92	2000.	
98 Mo	6.79	1.358	ppb	4.71	1000.	
107 Ag	0.8725	0.1745	ppb	8.40	100.	
109 Ag	0.6905	0.1381	ppb	6.95	#VALUE!	
111 Cd	4.2165	0.8433	ppb	3.31	#VALUE!	
114 Cd	2.0365	0.4073	ppb	3.02	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.4	10.08	ppb	1.05	1000.	
120 Sn	50.7	10.14	ppb	1.17	#VALUE!	
121 Sb	2.262	0.4524	ppb	3.74	#VALUE!	
123 Sb	2.2465	0.4493	ppb	3.76	1000.	
135 Ba	3,554.	710.8	ppb	0.92	2000.	
137 Ba	3,519.	703.8	ppb	0.71	#VALUE!	
182 W	0.7705	0.1541	ppb	4.57	1000.	
203 Tl	3.869	0.7738	ppb	5.68	1000.	
205 Tl	3.9795	0.7959	ppb	2.64	#VALUE!	
208 Pb	174.25	34.85	ppb	0.88	2000.	
232 Th	100.9	20.18	ppb	1.39	1000.	
238 U	10.68	2.136	ppb	0.83	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3556875.80	2.03	3258324.00	109.2	69.5 - 120	
45 Sc	3273666.80	1.69	2896530.80	113.0	69.5 - 120	
89 Y	4374056.50	2.68	3408096.80	128.3	69.5 - 120	IS Fai
159 Tb	4083653.30	1.44	3559216.30	114.7	69.5 - 120	
209 Bi	2153243.50	1.62	2013556.00	106.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000288

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\052SMPL.D\052SMPL.D#
Date Acquired: Mar 21 2018 05:03 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-012
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	16.945	3.389	ppb	2.29	100.	
11 B	203.45	40.69	ppb	3.24	1000.	
23 Na	3,154.5	630.9	ppb	0.31	200000.	
25 Mg	124,400.	24,880.	ppb	0.67	200000.	
27 Al	354,750.	70,950.	ppb	0.54	200000.	
28 Si	4,480.	896.	ppb	8.77	#VALUE!	
29 Si	4,088.5	817.7	ppb	1.98	10000.	
39 K	84,900.	16,980.	ppb	0.56	200000.	
43 Ca	327,400.	65,480.	ppb	0.76	#VALUE!	
44 Ca	311,600.	62,320.	ppb	0.51	200000.	
51 V	577.	115.4	ppb	1.52	1000.	
52 Cr	301.9	60.38	ppb	2.11	2000.	
53 Cr	320.8	64.16	ppb	2.33	#VALUE!	
55 Mn	4,266.5	853.3	ppb	1.41	2000.	
56 Fe	282,900.	56,580.	ppb	2.23	#VALUE!	
57 Fe	276,550.	55,310.	ppb	1.74	100000.	
59 Co	116.05	23.21	ppb	1.68	1000.	
60 Ni	339.95	67.99	ppb	2.41	1000.	
63 Cu	200.65	40.13	ppb	2.46	#VALUE!	
65 Cu	202.3	40.46	ppb	2.84	2000.	
66 Zn	803.5	160.7	ppb	2.13	2000.	
68 Zn	880.5	176.1	ppb	2.52	#VALUE!	
75 As	52.5	10.5	ppb	1.19	1000.	
82 Se	6.805	1.361	ppb	14.39	1000.	
88 Sr	1,443.	288.6	ppb	1.03	2000.	
98 Mo	6.21	1.242	ppb	0.16	1000.	
107 Ag	1.349	0.2698	ppb	4.56	100.	
109 Ag	1.0535	0.2107	ppb	3.84	#VALUE!	
111 Cd	3.923	0.7846	ppb	6.47	#VALUE!	
114 Cd	0.3012	0.0602	ppb	42.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	58.4	11.68	ppb	1.56	1000.	
120 Sn	57.65	11.53	ppb	1.72	#VALUE!	
121 Sb	3.9895	0.7979	ppb	4.88	#VALUE!	
123 Sb	4.007	0.8014	ppb	7.20	1000.	
135 Ba	3,219.	643.8	ppb	0.86	2000.	
137 Ba	3,183.5	636.7	ppb	0.56	#VALUE!	
182 W	1.01	0.202	ppb	8.78	1000.	
203 Tl	5.96	1.192	ppb	1.59	1000.	
205 Tl	6.075	1.215	ppb	1.70	#VALUE!	
208 Pb	209.35	41.87	ppb	0.44	2000.	
232 Th	163.2	32.64	ppb	0.55	1000.	
238 U	18.99	3.798	ppb	1.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3571408.80	1.87	3258324.00	109.6	69.5 - 120	
45 Sc	3325814.80	1.50	2896530.80	114.8	69.5 - 120	
89 Y	4556349.50	1.07	3408096.80	133.7	69.5 - 120	IS Fai
159 Tb	4038767.00	0.54	3559216.30	113.5	69.5 - 120	
209 Bi	2086363.90	0.20	2013556.00	103.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000289

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\053SMPL.D\053SMPL.D#
Date Acquired: Mar 21 2018 05:07 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	397.79	100.	
11 B	0.9657	0.9657	ppb	13.26	1000.	
23 Na	-0.3948	-0.3948	ppb	67.07	200000.	
25 Mg	1.193	1.193	ppb	27.91	200000.	
27 Al	1.404	1.404	ppb	32.02	200000.	
28 Si	-41.38	-41.38	ppb	71.77	#VALUE!	
29 Si	-130.6	-130.6	ppb	18.91	10000.	LOW
39 K	-10.4	-10.4	ppb	4.19	200000.	
43 Ca	3.927	3.927	ppb	21.93	#VALUE!	
44 Ca	-0.5436	-0.5436	ppb	396.98	200000.	
51 V	-0.0522	-0.0522	ppb	173.82	1000.	
52 Cr	-0.0473	-0.0473	ppb	12.19	2000.	
53 Cr	0.0941	0.0941	ppb	202.70	#VALUE!	
55 Mn	0.014	0.014	ppb	103.44	2000.	
56 Fe	-7.754	-7.754	ppb	21.09	#VALUE!	
57 Fe	-8.275	-8.275	ppb	18.84	100000.	
59 Co	-0.01	-0.01	ppb	47.05	1000.	
60 Ni	-0.0009	-0.0009	ppb	748.64	1000.	
63 Cu	-0.0017	-0.0017	ppb	140.42	#VALUE!	
65 Cu	0.0129	0.0129	ppb	33.71	2000.	
66 Zn	0.0508	0.0508	ppb	91.65	2000.	
68 Zn	-0.2107	-0.2107	ppb	61.79	#VALUE!	
75 As	-0.0142	-0.0142	ppb	697.53	1000.	
82 Se	0.1319	0.1319	ppb	249.51	1000.	
88 Sr	0.0053	0.0053	ppb	77.07	2000.	
98 Mo	0.003	0.003	ppb	33.53	1000.	
107 Ag	0.0005	0.0005	ppb	265.25	100.	
109 Ag	0.0003	0.0003	ppb	212.22	#VALUE!	
111 Cd	-0.1103	-0.1103	ppb	33.73	#VALUE!	
114 Cd	0.0012	0.0012	ppb	529.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0003	0.0003	ppb	2963.00	1000.	
120 Sn	-0.0161	-0.0161	ppb	61.96	#VALUE!	
121 Sb	-0.0038	-0.0038	ppb	28.62	#VALUE!	
123 Sb	-0.0025	-0.0025	ppb	55.83	1000.	
135 Ba	0.0226	0.0226	ppb	79.98	2000.	
137 Ba	0.0263	0.0263	ppb	55.71	#VALUE!	
182 W	-0.0076	-0.0076	ppb	49.79	1000.	
203 Tl	0.0035	0.0035	ppb	137.01	1000.	
205 Tl	0.0019	0.0019	ppb	76.31	#VALUE!	
208 Pb	0.0112	0.0112	ppb	24.94	2000.	
232 Th	0.0052	0.0052	ppb	31.06	1000.	
238 U	-0.0002	-0.0002	ppb	161.27	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3310079.00	1.20	3258324.00	101.6	69.5 - 120	
45 Sc	2906017.80	0.54	2896530.80	100.3	69.5 - 120	
89 Y	3529924.00	0.51	3408096.80	103.6	69.5 - 120	
159 Tb	3669283.30	0.36	3559216.30	103.1	69.5 - 120	
209 Bi	2030238.90	0.39	2013556.00	100.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000290

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\054_CCV.D\054_CCV.D#
Date Acquired: Mar 21 2018 05:11 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.88	ppb	1.25	25	99.52	
11 B	25.06	ppb	1.29	25	100.24	
23 Na	4,840.	ppb	3.13	5,000	96.8	
25 Mg	4,935.	ppb	1.67	5,000	98.7	
27 Al	502.8	ppb	1.26	500	100.56	
28 Si	460.3	ppb	3.80	500	92.06	
29 Si	360.	ppb	6.61	500	72	Fail
39 K	5,032.	ppb	1.94	5,000	100.64	
43 Ca	5,014.	ppb	3.31	5,000	100.28	
44 Ca	5,148.	ppb	1.99	5,000	102.96	
51 V	24.56	ppb	1.43	25	98.24	
52 Cr	24.68	ppb	2.21	25	98.72	
53 Cr	24.62	ppb	3.91	25	98.48	
55 Mn	24.9	ppb	1.09	25	99.6	
56 Fe	4,922.	ppb	1.88	5,000	98.44	
57 Fe	5,095.	ppb	2.83	5,000	101.9	
59 Co	24.67	ppb	1.91	25	98.68	
60 Ni	24.66	ppb	1.03	25	98.64	
63 Cu	24.83	ppb	2.50	25	99.32	
65 Cu	24.72	ppb	2.57	25	98.88	
66 Zn	24.73	ppb	2.55	25	98.92	
68 Zn	24.55	ppb	3.83	25	98.2	
75 As	24.28	ppb	2.18	25	97.12	
82 Se	25.2	ppb	3.71	25	100.8	
88 Sr	25.33	ppb	3.20	25	101.32	
98 Mo	24.97	ppb	1.97	25	99.88	
107 Ag	25.55	ppb	2.85	25	102.2	
109 Ag	25.67	ppb	2.98	25	102.68	
111 Cd	25.5	ppb	2.34	25	102	
114 Cd	25.71	ppb	1.89	25	102.84	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.69	ppb	0.49	25	102.76	
120 Sn	25.95	ppb	2.00	25	103.8	
121 Sb	25.98	ppb	1.79	25	103.92	
123 Sb	25.78	ppb	2.80	25	103.12	
135 Ba	26.04	ppb	1.46	25	104.16	
137 Ba	25.83	ppb	1.67	25	103.32	
182 W	25.1	ppb	2.25	25	100.4	
203 Tl	25.26	ppb	1.88	25	101.04	
205 Tl	25.44	ppb	2.67	25	101.76	
208 Pb	25.39	ppb	1.76	25	101.56	
232 Th	24.86	ppb	0.87	25	99.44	
238 U	24.66	ppb	1.66	25	98.64	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3467204.30	0.62	3258324.00	106.4	80 - 120.4	
45 Sc	3103633.50	1.40	2896530.80	107.2	80 - 120.4	
89 Y	3775505.80	1.30	3408096.80	110.8	80 - 120.4	
159 Tb	3892835.00	0.82	3559216.30	109.4	80 - 120.4	
209 Bi	2150264.80	0.72	2013556.00	106.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000291

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\055_CCB.D\055_CCB.D#
Date Acquired: Mar 21 2018 05:15 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0005	ppb	627.70	1.00	
11 B	0.8987	ppb	1.77	1.00	
23 Na	-0.7971	ppb	15.68	1.00	
25 Mg	0.2165	ppb	33.59	1.00	
27 Al	0.4789	ppb	16.50	1.00	
28 Si	-0.0967	ppb	54211.00	1.00	
29 Si	-77.4	ppb	45.27	1.00	
39 K	-5.951	ppb	26.08	1.00	
43 Ca	0.4047	ppb	566.10	1.00	
44 Ca	-3.063	ppb	40.71	1.00	
51 V	-0.0602	ppb	77.37	1.00	
52 Cr	-0.0474	ppb	51.83	1.00	
53 Cr	0.1845	ppb	58.43	1.00	
55 Mn	0.0116	ppb	12.74	1.00	
56 Fe	-8.632	ppb	15.14	1.00	
57 Fe	-3.997	ppb	40.23	1.00	
59 Co	-0.008	ppb	19.21	1.00	
60 Ni	-0.0027	ppb	70.27	1.00	
63 Cu	-0.004	ppb	108.69	1.00	
65 Cu	0.0055	ppb	117.36	1.00	
66 Zn	-0.0173	ppb	70.80	1.00	
68 Zn	-0.342	ppb	48.89	1.00	
75 As	-0.0556	ppb	182.05	1.00	
82 Se	-0.0618	ppb	88.35	1.00	
88 Sr	-0.0028	ppb	101.22	1.00	
98 Mo	0.0122	ppb	29.81	1.00	
107 Ag	0.0007	ppb	271.21	1.00	
109 Ag	-0.0006	ppb	359.95	1.00	
111 Cd	-0.1256	ppb	25.63	1.00	
114 Cd	-0.0002	ppb	1570.50	1.00	
115 In	--------	---	--------	---	
118 Sn	0.029	ppb	43.66	1.00	
120 Sn	0.0203	ppb	32.95	1.00	
121 Sb	-0.0014	ppb	246.02	1.00	
123 Sb	-0.0016	ppb	328.21	1.00	
135 Ba	0.0216	ppb	23.01	1.00	
137 Ba	0.0175	ppb	16.90	1.00	
182 W	0.011	ppb	47.21	1.00	
203 Tl	0.0035	ppb	138.18	1.00	
205 Tl	0.0041	ppb	50.92	1.00	
208 Pb	0.0073	ppb	30.63	1.00	
232 Th	0.014	ppb	20.74	1.00	
238 U	0.0024	ppb	69.88	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3250075.30	0.79	3258324.00	99.7	79.5 - 120	
45 Sc	2864311.30	1.07	2896530.80	98.9	79.5 - 120	
89 Y	3507527.00	1.09	3408096.80	102.9	79.5 - 120	
159 Tb	3651883.80	0.88	3559216.30	102.6	79.5 - 120	
209 Bi	2032598.50	0.57	2013556.00	100.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000292

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\056SMPL.D\056SMPL.D#
Date Acquired: Mar 21 2018 05:19 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-012
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	20.27	2.027	ppb	0.70	100.	
11 B	245.1	24.51	ppb	1.87	1000.	
23 Na	3,814.	381.4	ppb	1.46	200000.	
25 Mg	151,600.	15,160.	ppb	2.43	200000.	
27 Al	431,800.	43,180.	ppb	0.50	200000.	
28 Si	4,896.	489.6	ppb	12.84	#VALUE!	
29 Si	3,802.	380.2	ppb	3.45	10000.	
39 K	102,200.	10,220.	ppb	1.09	200000.	
43 Ca	383,600.	38,360.	ppb	0.52	#VALUE!	
44 Ca	373,400.	37,340.	ppb	0.87	200000.	
51 V	727.5	72.75	ppb	0.87	1000.	
52 Cr	378.3	37.83	ppb	1.28	2000.	
53 Cr	399.4	39.94	ppb	1.96	#VALUE!	
55 Mn	5,410.	541.	ppb	0.57	2000.	
56 Fe	357,500.	35,750.	ppb	0.70	#VALUE!	
57 Fe	347,800.	34,780.	ppb	0.89	100000.	
59 Co	147.	14.7	ppb	0.75	1000.	
60 Ni	430.8	43.08	ppb	0.80	1000.	
63 Cu	254.6	25.46	ppb	1.91	#VALUE!	
65 Cu	258.4	25.84	ppb	1.04	2000.	
66 Zn	1,034.	103.4	ppb	1.72	2000.	
68 Zn	1,128.	112.8	ppb	1.10	#VALUE!	
75 As	67.69	6.769	ppb	1.23	1000.	
82 Se	11.47	1.147	ppb	12.43	1000.	
88 Sr	1,826.	182.6	ppb	0.38	2000.	
98 Mo	7.521	0.7521	ppb	1.93	1000.	
107 Ag	1.614	0.1614	ppb	8.44	100.	
109 Ag	1.317	0.1317	ppb	10.95	#VALUE!	
111 Cd	4.834	0.4834	ppb	8.04	#VALUE!	
114 Cd	0.3444	0.0344	ppb	114.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	67.46	6.746	ppb	0.54	1000.	
120 Sn	67.71	6.771	ppb	0.70	#VALUE!	
121 Sb	4.711	0.4711	ppb	5.65	#VALUE!	
123 Sb	5.142	0.5142	ppb	2.27	1000.	
135 Ba	3,785.	378.5	ppb	0.48	2000.	
137 Ba	3,793.	379.3	ppb	0.84	#VALUE!	
182 W	1.227	0.1227	ppb	19.28	1000.	
203 Tl	6.815	0.6815	ppb	4.10	1000.	
205 Tl	7.039	0.7039	ppb	1.42	#VALUE!	
208 Pb	242.8	24.28	ppb	1.28	2000.	
232 Th	186.2	18.62	ppb	1.22	1000.	
238 U	21.73	2.173	ppb	1.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3572658.30	0.94	3258324.00	109.6	69.5 - 120	
45 Sc	3268968.50	0.31	2896530.80	112.9	69.5 - 120	
89 Y	4314532.00	0.26	3408096.80	126.6	69.5 - 120	IS Fai
159 Tb	4047768.80	0.42	3559216.30	113.7	69.5 - 120	
209 Bi	2130430.50	0.53	2013556.00	105.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000293

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\057SMPL.D\057SMPL.D#
Date Acquired: Mar 21 2018 05:23 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-013
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.125	2.025	ppb	2.30	100.	
11 B	116.85	23.37	ppb	3.63	1000.	
23 Na	1,956.	391.2	ppb	2.59	200000.	
25 Mg	93,000.	18,600.	ppb	1.58	200000.	
27 Al	213,850.	42,770.	ppb	0.76	200000.	
28 Si	4,641.5	928.3	ppb	7.55	#VALUE!	
29 Si	4,224.	844.8	ppb	1.37	10000.	
39 K	47,220.	9,444.	ppb	0.80	200000.	
43 Ca	216,900.	43,380.	ppb	2.18	#VALUE!	
44 Ca	205,250.	41,050.	ppb	1.33	200000.	
51 V	359.25	71.85	ppb	3.15	1000.	
52 Cr	192.3	38.46	ppb	2.86	2000.	
53 Cr	215.3	43.06	ppb	1.22	#VALUE!	
55 Mn	1,745.	349.	ppb	2.27	2000.	
56 Fe	175,650.	35,130.	ppb	2.90	#VALUE!	
57 Fe	172,750.	34,550.	ppb	2.47	100000.	
59 Co	48.33	9.666	ppb	3.45	1000.	
60 Ni	125.4	25.08	ppb	2.74	1000.	
63 Cu	139.9	27.98	ppb	3.41	#VALUE!	
65 Cu	141.75	28.35	ppb	3.04	2000.	
66 Zn	509.5	101.9	ppb	3.40	2000.	
68 Zn	601.5	120.3	ppb	4.18	#VALUE!	
75 As	25.47	5.094	ppb	3.85	1000.	
82 Se	2.603	0.5206	ppb	18.44	1000.	
88 Sr	657.	131.4	ppb	1.71	2000.	
98 Mo	2.371	0.4742	ppb	6.13	1000.	
107 Ag	1.0095	0.2019	ppb	7.94	100.	
109 Ag	0.8035	0.1607	ppb	6.47	#VALUE!	
111 Cd	2.635	0.527	ppb	1.98	#VALUE!	
114 Cd	0.1285	0.0257	ppb	34.16	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.65	10.53	ppb	1.02	1000.	
120 Sn	53.25	10.65	ppb	0.99	#VALUE!	
121 Sb	2.155	0.431	ppb	6.45	#VALUE!	
123 Sb	2.1735	0.4347	ppb	3.66	1000.	
135 Ba	3,236.5	647.3	ppb	1.10	2000.	
137 Ba	3,226.	645.2	ppb	1.49	#VALUE!	
182 W	0.652	0.1304	ppb	5.64	1000.	
203 Tl	3.683	0.7366	ppb	5.17	1000.	
205 Tl	3.63	0.726	ppb	2.19	#VALUE!	
208 Pb	144.5	28.9	ppb	0.78	2000.	
232 Th	101.7	20.34	ppb	1.12	1000.	
238 U	10.985	2.197	ppb	1.10	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3595874.00	1.14	3258324.00	110.4	69.5 - 120	
45 Sc	3264368.50	0.50	2896530.80	112.7	69.5 - 120	
89 Y	4385531.00	2.03	3408096.80	128.7	69.5 - 120	IS Fai
159 Tb	4067158.80	0.90	3559216.30	114.3	69.5 - 120	
209 Bi	2121949.00	0.50	2013556.00	105.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000294

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\058SMPL.D\058SMPL.D#
Date Acquired: Mar 21 2018 05:27 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-013
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.61	1.061	ppb	2.47	100.	
11 B	118.3	11.83	ppb	3.16	1000.	
23 Na	1,999.	199.9	ppb	1.44	200000.	
25 Mg	93,310.	9,331.	ppb	1.04	200000.	
27 Al	215,300.	21,530.	ppb	0.89	200000.	
28 Si	4,693.	469.3	ppb	10.86	#VALUE!	
29 Si	2,982.	298.2	ppb	10.14	10000.	
39 K	47,940.	4,794.	ppb	0.49	200000.	
43 Ca	210,000.	21,000.	ppb	1.03	#VALUE!	
44 Ca	203,600.	20,360.	ppb	0.54	200000.	
51 V	370.2	37.02	ppb	0.96	1000.	
52 Cr	203.4	20.34	ppb	1.40	2000.	
53 Cr	225.8	22.58	ppb	3.74	#VALUE!	
55 Mn	1,864.	186.4	ppb	0.75	2000.	
56 Fe	184,700.	18,470.	ppb	1.78	#VALUE!	
57 Fe	183,100.	18,310.	ppb	1.55	100000.	
59 Co	51.14	5.114	ppb	0.68	1000.	
60 Ni	133.1	13.31	ppb	1.52	1000.	
63 Cu	149.9	14.99	ppb	1.02	#VALUE!	
65 Cu	152.1	15.21	ppb	1.15	2000.	
66 Zn	553.7	55.37	ppb	0.95	2000.	
68 Zn	646.9	64.69	ppb	2.10	#VALUE!	
75 As	26.02	2.602	ppb	8.94	1000.	
82 Se	3.609	0.3609	ppb	27.79	1000.	
88 Sr	693.1	69.31	ppb	1.27	2000.	
98 Mo	2.506	0.2506	ppb	6.88	1000.	
107 Ag	1.113	0.1113	ppb	8.51	100.	
109 Ag	0.8743	0.0874	ppb	4.13	#VALUE!	
111 Cd	2.015	0.2015	ppb	15.16	#VALUE!	
114 Cd	0.1744	0.0174	ppb	91.40	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.97	5.197	ppb	1.58	1000.	
120 Sn	51.4	5.14	ppb	1.57	#VALUE!	
121 Sb	1.949	0.1949	ppb	2.56	#VALUE!	
123 Sb	2.088	0.2088	ppb	4.23	1000.	
135 Ba	3,166.	316.6	ppb	1.05	2000.	
137 Ba	3,140.	314.	ppb	1.35	#VALUE!	
182 W	0.5188	0.0519	ppb	7.22	1000.	
203 Tl	3.604	0.3604	ppb	6.87	1000.	
205 Tl	3.49	0.349	ppb	2.76	#VALUE!	
208 Pb	140.6	14.06	ppb	1.07	2000.	
232 Th	96.62	9.662	ppb	0.73	1000.	
238 U	10.42	1.042	ppb	0.95	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3555592.80	0.45	3258324.00	109.1	69.5 - 120	
45 Sc	3232845.30	0.66	2896530.80	111.6	69.5 - 120	
89 Y	4154403.30	1.59	3408096.80	121.9	69.5 - 120	IS Fai
159 Tb	4092614.00	1.12	3559216.30	115.0	69.5 - 120	
209 Bi	2184957.30	0.25	2013556.00	108.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000295

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\059SMPL.D\059SMPL.D#
Date Acquired: Mar 21 2018 05:31 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-014
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.54	1.508	ppb	2.01	100.	
11 B	79.95	15.99	ppb	4.25	1000.	
23 Na	979.	195.8	ppb	0.36	200000.	
25 Mg	39,525.	7,905.	ppb	1.29	200000.	
27 Al	165,450.	33,090.	ppb	0.57	200000.	
28 Si	3,543.	708.6	ppb	7.59	#VALUE!	
29 Si	3,159.	631.8	ppb	2.52	10000.	
39 K	39,815.	7,963.	ppb	1.10	200000.	
43 Ca	29,850.	5,970.	ppb	1.84	#VALUE!	
44 Ca	29,785.	5,957.	ppb	1.15	200000.	
51 V	248.7	49.74	ppb	0.87	1000.	
52 Cr	128.	25.6	ppb	0.91	2000.	
53 Cr	148.2	29.64	ppb	1.57	#VALUE!	
55 Mn	2,235.5	447.1	ppb	1.19	2000.	
56 Fe	129,150.	25,830.	ppb	1.62	#VALUE!	
57 Fe	126,600.	25,320.	ppb	1.02	100000.	
59 Co	49.295	9.859	ppb	1.66	1000.	
60 Ni	103.9	20.78	ppb	0.16	1000.	
63 Cu	87.75	17.55	ppb	0.75	#VALUE!	
65 Cu	89.6	17.92	ppb	0.82	2000.	
66 Zn	356.95	71.39	ppb	0.29	2000.	
68 Zn	403.6	80.72	ppb	0.51	#VALUE!	
75 As	31.06	6.212	ppb	3.42	1000.	
82 Se	4.9035	0.9807	ppb	24.33	1000.	
88 Sr	322.2	64.44	ppb	1.39	2000.	
98 Mo	4.136	0.8272	ppb	5.22	1000.	
107 Ag	0.6885	0.1377	ppb	3.02	100.	
109 Ag	0.57	0.114	ppb	12.75	#VALUE!	
111 Cd	2.45	0.49	ppb	10.97	#VALUE!	
114 Cd	0.7925	0.1585	ppb	2.62	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	49.18	9.836	ppb	0.33	1000.	
120 Sn	49.84	9.968	ppb	0.52	#VALUE!	
121 Sb	1.8985	0.3797	ppb	3.11	#VALUE!	
123 Sb	1.8515	0.3703	ppb	5.55	1000.	
135 Ba	1,724.5	344.9	ppb	0.64	2000.	
137 Ba	1,713.	342.6	ppb	0.41	#VALUE!	
182 W	0.797	0.1594	ppb	17.23	1000.	
203 Tl	2.5655	0.5131	ppb	6.43	1000.	
205 Tl	2.513	0.5026	ppb	6.61	#VALUE!	
208 Pb	109.9	21.98	ppb	0.78	2000.	
232 Th	74.95	14.99	ppb	0.47	1000.	
238 U	9.825	1.965	ppb	1.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3560179.00	1.84	3258324.00	109.3	69.5 - 120	
45 Sc	3243993.50	1.08	2896530.80	112.0	69.5 - 120	
89 Y	4198454.00	0.80	3408096.80	123.2	69.5 - 120	IS Fai
159 Tb	4056287.50	0.51	3559216.30	114.0	69.5 - 120	
209 Bi	2161839.80	0.37	2013556.00	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000296

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\060SMPL.D\060SMPL.D#
Date Acquired: Mar 21 2018 05:36 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-015
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.195	1.439	ppb	2.37	100.	
11 B	92.35	18.47	ppb	4.19	1000.	
23 Na	1,020.5	204.1	ppb	0.42	200000.	
25 Mg	40,885.	8,177.	ppb	0.94	200000.	
27 Al	147,700.	29,540.	ppb	0.63	200000.	
28 Si	3,316.5	663.3	ppb	10.83	#VALUE!	
29 Si	2,748.	549.6	ppb	3.12	10000.	
39 K	48,455.	9,691.	ppb	1.11	200000.	
43 Ca	45,370.	9,074.	ppb	0.98	#VALUE!	
44 Ca	44,960.	8,992.	ppb	1.56	200000.	
51 V	225.35	45.07	ppb	2.06	1000.	
52 Cr	140.25	28.05	ppb	1.60	2000.	
53 Cr	158.1	31.62	ppb	0.34	#VALUE!	
55 Mn	2,457.5	491.5	ppb	1.95	2000.	
56 Fe	124,150.	24,830.	ppb	1.65	#VALUE!	
57 Fe	122,350.	24,470.	ppb	1.63	100000.	
59 Co	53.	10.6	ppb	1.95	1000.	
60 Ni	114.25	22.85	ppb	1.37	1000.	
63 Cu	255.55	51.11	ppb	1.85	#VALUE!	
65 Cu	259.6	51.92	ppb	2.06	2000.	
66 Zn	638.	127.6	ppb	1.72	2000.	
68 Zn	690.	138.	ppb	2.62	#VALUE!	
75 As	28.275	5.655	ppb	3.74	1000.	
82 Se	5.45	1.09	ppb	15.29	1000.	
88 Sr	428.7	85.74	ppb	1.51	2000.	
98 Mo	4.21	0.842	ppb	2.26	1000.	
107 Ag	2.556	0.5112	ppb	2.81	100.	
109 Ag	2.525	0.505	ppb	3.43	#VALUE!	
111 Cd	35.73	7.146	ppb	0.60	#VALUE!	
114 Cd	34.095	6.819	ppb	0.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	60.95	12.19	ppb	0.77	1000.	
120 Sn	60.	12.	ppb	0.16	#VALUE!	
121 Sb	2.7035	0.5407	ppb	2.66	#VALUE!	
123 Sb	2.774	0.5548	ppb	3.13	1000.	
135 Ba	1,907.	381.4	ppb	0.79	2000.	
137 Ba	1,908.5	381.7	ppb	0.83	#VALUE!	
182 W	1.0915	0.2183	ppb	7.02	1000.	
203 Tl	2.584	0.5168	ppb	4.22	1000.	
205 Tl	2.601	0.5202	ppb	2.45	#VALUE!	
208 Pb	244.25	48.85	ppb	0.99	2000.	
232 Th	76.85	15.37	ppb	1.29	1000.	
238 U	13.805	2.761	ppb	2.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3598605.80	1.31	3258324.00	110.4	69.5 - 120	
45 Sc	3245921.00	0.71	2896530.80	112.1	69.5 - 120	
89 Y	4205381.00	1.37	3408096.80	123.4	69.5 - 120	IS Fai
159 Tb	4077879.50	0.09	3559216.30	114.6	69.5 - 120	
209 Bi	2169198.00	1.08	2013556.00	107.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000297

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\061SMPL.D\061SMPL.D#
Date Acquired: Mar 21 2018 05:40 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-016
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.34	1.668	ppb	1.12	100.	
11 B	139.2	27.84	ppb	3.90	1000.	
23 Na	2,227.	445.4	ppb	5.05	200000.	
25 Mg	54,000.	10,800.	ppb	0.73	200000.	
27 Al	180,750.	36,150.	ppb	0.94	200000.	
28 Si	3,115.5	623.1	ppb	6.02	#VALUE!	
29 Si	2,736.	547.2	ppb	4.37	10000.	
39 K	64,050.	12,810.	ppb	0.70	200000.	
43 Ca	35,455.	7,091.	ppb	0.82	#VALUE!	
44 Ca	35,345.	7,069.	ppb	0.48	200000.	
51 V	262.8	52.56	ppb	2.15	1000.	
52 Cr	193.8	38.76	ppb	1.85	2000.	
53 Cr	212.4	42.48	ppb	1.19	#VALUE!	
55 Mn	2,893.5	578.7	ppb	1.00	2000.	
56 Fe	139,650.	27,930.	ppb	0.51	#VALUE!	
57 Fe	136,350.	27,270.	ppb	0.32	100000.	
59 Co	69.1	13.82	ppb	0.17	1000.	
60 Ni	144.	28.8	ppb	1.52	1000.	
63 Cu	355.	71.	ppb	1.83	#VALUE!	
65 Cu	357.2	71.44	ppb	1.33	2000.	
66 Zn	931.5	186.3	ppb	1.35	2000.	
68 Zn	975.	195.	ppb	1.07	#VALUE!	
75 As	30.615	6.123	ppb	3.19	1000.	
82 Se	5.67	1.134	ppb	6.47	1000.	
88 Sr	466.45	93.29	ppb	1.00	2000.	
98 Mo	5.75	1.15	ppb	10.21	1000.	
107 Ag	4.9205	0.9841	ppb	3.81	100.	
109 Ag	4.7745	0.9549	ppb	2.65	#VALUE!	
111 Cd	105.8	21.16	ppb	1.25	#VALUE!	
114 Cd	103.85	20.77	ppb	1.67	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	66.75	13.35	ppb	1.62	1000.	
120 Sn	67.35	13.47	ppb	1.40	#VALUE!	
121 Sb	5.405	1.081	ppb	4.52	#VALUE!	
123 Sb	5.61	1.122	ppb	0.93	1000.	
135 Ba	2,173.	434.6	ppb	1.58	2000.	
137 Ba	2,162.	432.4	ppb	1.18	#VALUE!	
182 W	2.0395	0.4079	ppb	4.82	1000.	
203 Tl	3.105	0.621	ppb	5.23	1000.	
205 Tl	3.0755	0.6151	ppb	5.60	#VALUE!	
208 Pb	568.5	113.7	ppb	1.04	2000.	
232 Th	85.45	17.09	ppb	0.72	1000.	
238 U	13.75	2.75	ppb	3.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3550158.80	1.51	3258324.00	109.0	69.5 - 120	
45 Sc	3224126.30	0.41	2896530.80	111.3	69.5 - 120	
89 Y	4271513.00	0.74	3408096.80	125.3	69.5 - 120	IS Fai
159 Tb	4041452.80	0.72	3559216.30	113.5	69.5 - 120	
209 Bi	2135951.30	0.70	2013556.00	106.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000298

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\062SMPL.D\062SMPL.D#
Date Acquired: Mar 21 2018 05:44 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-017
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.61	1.122	ppb	3.25	100.	
11 B	87.95	17.59	ppb	3.08	1000.	
23 Na	1,104.	220.8	ppb	2.69	200000.	
25 Mg	35,150.	7,030.	ppb	0.98	200000.	
27 Al	123,050.	24,610.	ppb	1.12	200000.	
28 Si	4,900.5	980.1	ppb	11.62	#VALUE!	
29 Si	3,982.	796.4	ppb	2.90	10000.	
39 K	43,445.	8,689.	ppb	1.25	200000.	
43 Ca	23,645.	4,729.	ppb	2.17	#VALUE!	
44 Ca	23,545.	4,709.	ppb	0.82	200000.	
51 V	199.35	39.87	ppb	2.17	1000.	
52 Cr	107.4	21.48	ppb	2.39	2000.	
53 Cr	127.85	25.57	ppb	2.33	#VALUE!	
55 Mn	2,003.	400.6	ppb	1.47	2000.	
56 Fe	96,100.	19,220.	ppb	1.52	#VALUE!	
57 Fe	94,250.	18,850.	ppb	1.99	100000.	
59 Co	44.44	8.888	ppb	1.38	1000.	
60 Ni	84.	16.8	ppb	1.80	1000.	
63 Cu	159.3	31.86	ppb	1.97	#VALUE!	
65 Cu	160.6	32.12	ppb	3.07	2000.	
66 Zn	379.85	75.97	ppb	1.82	2000.	
68 Zn	412.55	82.51	ppb	2.88	#VALUE!	
75 As	20.38	4.076	ppb	3.02	1000.	
82 Se	4.58	0.916	ppb	1.84	1000.	
88 Sr	329.1	65.82	ppb	1.04	2000.	
98 Mo	7.025	1.405	ppb	4.26	1000.	
107 Ag	2.3405	0.4681	ppb	4.68	100.	
109 Ag	2.193	0.4386	ppb	2.15	#VALUE!	
111 Cd	4.978	0.9956	ppb	8.33	#VALUE!	
114 Cd	3.734	0.7468	ppb	1.30	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.25	10.45	ppb	1.36	1000.	
120 Sn	51.3	10.26	ppb	0.45	#VALUE!	
121 Sb	1.8805	0.3761	ppb	1.78	#VALUE!	
123 Sb	1.8735	0.3747	ppb	3.88	1000.	
135 Ba	1,344.5	268.9	ppb	0.38	2000.	
137 Ba	1,340.	268.	ppb	1.26	#VALUE!	
182 W	0.7915	0.1583	ppb	2.89	1000.	
203 Tl	2.1685	0.4337	ppb	4.76	1000.	
205 Tl	2.2375	0.4475	ppb	0.47	#VALUE!	
208 Pb	132.6	26.52	ppb	1.33	2000.	
232 Th	71.45	14.29	ppb	1.48	1000.	
238 U	10.7	2.14	ppb	1.79	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3507587.50	2.91	3258324.00	107.7	69.5 - 120	
45 Sc	3138119.00	0.67	2896530.80	108.3	69.5 - 120	
89 Y	4120462.50	1.23	3408096.80	120.9	69.5 - 120	IS Fai
159 Tb	3991743.80	0.31	3559216.30	112.2	69.5 - 120	
209 Bi	2146754.30	1.04	2013556.00	106.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000299

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\063SMPL.D\063SMPL.D#
Date Acquired: Mar 21 2018 05:48 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-018
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.89	1.378	ppb	1.57	100.	
11 B	115.9	23.18	ppb	3.20	1000.	
23 Na	2,006.5	401.3	ppb	1.50	200000.	
25 Mg	43,840.	8,768.	ppb	1.74	200000.	
27 Al	146,550.	29,310.	ppb	1.21	200000.	
28 Si	4,056.5	811.3	ppb	6.77	#VALUE!	
29 Si	3,517.5	703.5	ppb	5.51	10000.	
39 K	52,350.	10,470.	ppb	0.86	200000.	
43 Ca	26,505.	5,301.	ppb	2.21	#VALUE!	
44 Ca	26,255.	5,251.	ppb	1.44	200000.	
51 V	230.1	46.02	ppb	1.13	1000.	
52 Cr	124.95	24.99	ppb	1.97	2000.	
53 Cr	144.75	28.95	ppb	2.50	#VALUE!	
55 Mn	2,508.5	501.7	ppb	3.24	2000.	
56 Fe	116,950.	23,390.	ppb	2.03	#VALUE!	
57 Fe	114,900.	22,980.	ppb	2.57	100000.	
59 Co	53.	10.6	ppb	2.16	1000.	
60 Ni	102.65	20.53	ppb	1.73	1000.	
63 Cu	102.85	20.57	ppb	3.10	#VALUE!	
65 Cu	103.7	20.74	ppb	2.70	2000.	
66 Zn	378.25	75.65	ppb	1.77	2000.	
68 Zn	418.1	83.62	ppb	2.23	#VALUE!	
75 As	26.32	5.264	ppb	0.69	1000.	
82 Se	6.085	1.217	ppb	16.74	1000.	
88 Sr	400.45	80.09	ppb	1.29	2000.	
98 Mo	7.175	1.435	ppb	1.36	1000.	
107 Ag	1.7605	0.3521	ppb	5.50	100.	
109 Ag	1.7745	0.3549	ppb	0.34	#VALUE!	
111 Cd	3.8725	0.7745	ppb	12.15	#VALUE!	
114 Cd	1.727	0.3454	ppb	4.79	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.75	10.15	ppb	1.13	1000.	
120 Sn	51.	10.2	ppb	1.30	#VALUE!	
121 Sb	2.0235	0.4047	ppb	7.63	#VALUE!	
123 Sb	2.047	0.4094	ppb	10.27	1000.	
135 Ba	1,607.	321.4	ppb	1.47	2000.	
137 Ba	1,599.5	319.9	ppb	1.64	#VALUE!	
182 W	0.8825	0.1765	ppb	9.97	1000.	
203 Tl	2.6605	0.5321	ppb	3.83	1000.	
205 Tl	2.606	0.5212	ppb	0.54	#VALUE!	
208 Pb	138.35	27.67	ppb	1.28	2000.	
232 Th	86.5	17.3	ppb	0.71	1000.	
238 U	13.82	2.764	ppb	0.56	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3626777.80	3.12	3258324.00	111.3	69.5 - 120	
45 Sc	3233561.00	1.78	2896530.80	111.6	69.5 - 120	
89 Y	4230871.50	1.01	3408096.80	124.1	69.5 - 120	IS Fai
159 Tb	4027123.80	0.56	3559216.30	113.1	69.5 - 120	
209 Bi	2144791.50	1.15	2013556.00	106.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000300

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\064SMPL.D\064SMPL.D#
Date Acquired: Mar 21 2018 05:52 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.68	1.736	ppb	0.61	100.	
11 B	104.35	20.87	ppb	4.00	1000.	
23 Na	1,138.5	227.7	ppb	4.78	200000.	
25 Mg	49,575.	9,915.	ppb	1.84	200000.	
27 Al	177,600.	35,520.	ppb	0.44	200000.	
28 Si	2,847.	569.4	ppb	6.57	#VALUE!	
29 Si	2,275.5	455.1	ppb	3.54	10000.	
39 K	60,350.	12,070.	ppb	0.62	200000.	
43 Ca	59,700.	11,940.	ppb	0.68	#VALUE!	
44 Ca	58,300.	11,660.	ppb	0.45	200000.	
51 V	254.4	50.88	ppb	1.09	1000.	
52 Cr	165.15	33.03	ppb	1.45	2000.	
53 Cr	183.45	36.69	ppb	1.50	#VALUE!	
55 Mn	2,782.5	556.5	ppb	1.83	2000.	
56 Fe	148,200.	29,640.	ppb	1.38	#VALUE!	
57 Fe	145,550.	29,110.	ppb	0.78	100000.	
59 Co	64.	12.8	ppb	1.67	1000.	
60 Ni	136.9	27.38	ppb	0.33	1000.	
63 Cu	578.	115.6	ppb	2.10	#VALUE!	
65 Cu	585.5	117.1	ppb	1.26	2000.	
66 Zn	1,099.5	219.9	ppb	1.48	2000.	
68 Zn	1,148.	229.6	ppb	1.74	#VALUE!	
75 As	30.165	6.033	ppb	1.77	1000.	
82 Se	5.945	1.189	ppb	18.40	1000.	
88 Sr	554.5	110.9	ppb	1.30	2000.	
98 Mo	5.145	1.029	ppb	5.61	1000.	
107 Ag	3.062	0.6124	ppb	2.93	100.	
109 Ag	2.9505	0.5901	ppb	2.08	#VALUE!	
111 Cd	32.875	6.575	ppb	2.82	#VALUE!	
114 Cd	30.97	6.194	ppb	2.12	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	82.15	16.43	ppb	0.71	1000.	
120 Sn	82.6	16.52	ppb	1.08	#VALUE!	
121 Sb	3.3575	0.6715	ppb	4.24	#VALUE!	
123 Sb	3.513	0.7026	ppb	4.20	1000.	
135 Ba	2,525.	505.	ppb	0.47	2000.	
137 Ba	2,507.5	501.5	ppb	0.75	#VALUE!	
182 W	1.2625	0.2525	ppb	11.55	1000.	
203 Tl	3.043	0.6086	ppb	2.09	1000.	
205 Tl	3.108	0.6216	ppb	3.75	#VALUE!	
208 Pb	362.6	72.52	ppb	0.75	2000.	
232 Th	87.3	17.46	ppb	1.49	1000.	
238 U	22.51	4.502	ppb	0.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3618680.80	0.76	3258324.00	111.1	69.5 - 120	
45 Sc	3261435.30	0.69	2896530.80	112.6	69.5 - 120	
89 Y	4298871.00	1.13	3408096.80	126.1	69.5 - 120	IS Fai
159 Tb	4051602.00	0.43	3559216.30	113.8	69.5 - 120	
209 Bi	2158585.50	0.84	2013556.00	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000301

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\065SMPL.D\065SMPL.D#
Date Acquired: Mar 21 2018 05:56 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	34.51	100.	
11 B	0.7875	0.7875	ppb	6.31	1000.	
23 Na	-1.84	-1.84	ppb	7.20	200000.	
25 Mg	0.4347	0.4347	ppb	27.65	200000.	
27 Al	1.655	1.655	ppb	21.84	200000.	
28 Si	-31.41	-31.41	ppb	68.20	#VALUE!	
29 Si	-86.1	-86.1	ppb	18.40	10000.	
39 K	-5.836	-5.836	ppb	13.59	200000.	
43 Ca	1.793	1.793	ppb	165.87	#VALUE!	
44 Ca	0.4823	0.4823	ppb	85.45	200000.	
51 V	-0.0076	-0.0076	ppb	280.07	1000.	
52 Cr	-0.0257	-0.0257	ppb	76.26	2000.	
53 Cr	0.052	0.052	ppb	272.36	#VALUE!	
55 Mn	0.0247	0.0247	ppb	40.67	2000.	
56 Fe	-9.492	-9.492	ppb	18.02	#VALUE!	
57 Fe	-5.013	-5.013	ppb	46.44	100000.	
59 Co	-0.005	-0.005	ppb	33.51	1000.	
60 Ni	-0.0054	-0.0054	ppb	53.73	1000.	
63 Cu	0.0002	0.0002	ppb	735.29	#VALUE!	
65 Cu	0.0143	0.0143	ppb	61.20	2000.	
66 Zn	-0.0309	-0.0309	ppb	75.92	2000.	
68 Zn	-0.3584	-0.3584	ppb	34.68	#VALUE!	
75 As	-0.0181	-0.0181	ppb	726.47	1000.	
82 Se	0.0078	0.0078	ppb	7074.20	1000.	
88 Sr	-0.0025	-0.0025	ppb	361.86	2000.	
98 Mo	0.0007	0.0007	ppb	474.02	1000.	
107 Ag	0.0009	0.0009	ppb	103.54	100.	
109 Ag	0.0012	0.0012	ppb	298.94	#VALUE!	
111 Cd	-0.099	-0.099	ppb	12.07	#VALUE!	
114 Cd	0.	0.	ppb	3914.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0022	0.0022	ppb	354.11	1000.	
120 Sn	-0.004	-0.004	ppb	282.49	#VALUE!	
121 Sb	-0.0061	-0.0061	ppb	27.24	#VALUE!	
123 Sb	0.0005	0.0005	ppb	1003.80	1000.	
135 Ba	0.0232	0.0232	ppb	33.88	2000.	
137 Ba	0.0117	0.0117	ppb	76.45	#VALUE!	
182 W	-0.0114	-0.0114	ppb	15.48	1000.	
203 Tl	0.0003	0.0003	ppb	954.87	1000.	
205 Tl	0.0029	0.0029	ppb	125.27	#VALUE!	
208 Pb	0.0076	0.0076	ppb	7.13	2000.	
232 Th	0.0073	0.0073	ppb	28.36	1000.	
238 U	-0.0001	-0.0001	ppb	826.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3306252.30	0.94	3258324.00	101.5	69.5 - 120	
45 Sc	2886329.30	0.41	2896530.80	99.6	69.5 - 120	
89 Y	3505132.50	1.29	3408096.80	102.8	69.5 - 120	
159 Tb	3623615.30	0.92	3559216.30	101.8	69.5 - 120	
209 Bi	2027492.30	1.06	2013556.00	100.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000302

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\066_CCV.D\066_CCV.D#
Date Acquired: Mar 21 2018 06:00 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.45	ppb	2.25	25	97.8	
11 B	24.34	ppb	4.57	25	97.36	
23 Na	4,872.	ppb	0.48	5,000	97.44	
25 Mg	5,018.	ppb	0.11	5,000	100.36	
27 Al	516.4	ppb	7.71	500	103.28	
28 Si	412.9	ppb	9.53	500	82.58	
29 Si	341.2	ppb	6.27	500	68.24	Fail
39 K	4,985.	ppb	0.65	5,000	99.7	
43 Ca	5,053.	ppb	1.00	5,000	101.06	
44 Ca	5,113.	ppb	1.04	5,000	102.26	
51 V	24.6	ppb	0.29	25	98.4	
52 Cr	24.8	ppb	0.78	25	99.2	
53 Cr	25.49	ppb	0.95	25	101.96	
55 Mn	25.33	ppb	1.07	25	101.32	
56 Fe	5,020.	ppb	0.95	5,000	100.4	
57 Fe	5,130.	ppb	1.31	5,000	102.6	
59 Co	25.	ppb	0.42	25	100	
60 Ni	24.99	ppb	0.75	25	99.96	
63 Cu	25.09	ppb	1.36	25	100.36	
65 Cu	24.75	ppb	0.60	25	99	
66 Zn	24.9	ppb	0.59	25	99.6	
68 Zn	24.33	ppb	2.42	25	97.32	
75 As	24.87	ppb	0.35	25	99.48	
82 Se	24.77	ppb	0.74	25	99.08	
88 Sr	25.13	ppb	0.50	25	100.52	
98 Mo	24.95	ppb	0.75	25	99.8	
107 Ag	25.6	ppb	0.23	25	102.4	
109 Ag	25.28	ppb	0.87	25	101.12	
111 Cd	25.38	ppb	1.02	25	101.52	
114 Cd	25.55	ppb	0.37	25	102.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.59	ppb	1.21	25	102.36	
120 Sn	25.55	ppb	0.70	25	102.2	
121 Sb	25.56	ppb	1.08	25	102.24	
123 Sb	25.69	ppb	1.04	25	102.76	
135 Ba	25.57	ppb	2.68	25	102.28	
137 Ba	25.95	ppb	1.94	25	103.8	
182 W	24.68	ppb	0.44	25	98.72	
203 Tl	25.24	ppb	0.62	25	100.96	
205 Tl	25.12	ppb	0.07	25	100.48	
208 Pb	25.23	ppb	0.65	25	100.92	
232 Th	24.44	ppb	0.63	25	97.76	
238 U	23.77	ppb	0.50	25	95.08	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3585603.80	1.62	3258324.00	110.0	80 - 120.4	
45 Sc	3174254.80	0.88	2896530.80	109.6	80 - 120.4	
89 Y	3773659.00	0.83	3408096.80	110.7	80 - 120.4	
159 Tb	3917724.00	0.11	3559216.30	110.1	80 - 120.4	
209 Bi	2136929.30	0.75	2013556.00	106.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000303

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\067_CCB.D\067_CCB.D#
Date Acquired: Mar 21 2018 06:04 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0027	ppb	159.15	1.00	
11 B	0.6707	ppb	13.76	1.00	
23 Na	5.128	ppb	234.01	1.00	
25 Mg	8.29	ppb	168.52	1.00	
27 Al	14.67	ppb	165.92	1.00	
28 Si	-27.56	ppb	159.14	1.00	
29 Si	-96.09	ppb	57.44	1.00	
39 K	-1.429	ppb	963.61	1.00	
43 Ca	21.42	ppb	143.65	1.00	
44 Ca	9.193	ppb	272.16	1.00	
51 V	0.0015	ppb	1671.70	1.00	
52 Cr	-0.0187	ppb	424.64	1.00	
53 Cr	0.5936	ppb	43.77	1.00	
55 Mn	0.1684	ppb	158.85	1.00	
56 Fe	2.791	ppb	852.02	1.00	
57 Fe	6.456	ppb	338.75	1.00	
59 Co	0.0014	ppb	1319.40	1.00	
60 Ni	0.0158	ppb	249.14	1.00	
63 Cu	0.0213	ppb	183.20	1.00	
65 Cu	0.0266	ppb	162.35	1.00	
66 Zn	0.0078	ppb	887.44	1.00	
68 Zn	-0.2667	ppb	76.04	1.00	
75 As	-0.1284	ppb	154.91	1.00	
82 Se	0.2487	ppb	65.38	1.00	
88 Sr	0.0648	ppb	174.75	1.00	
98 Mo	0.0577	ppb	126.43	1.00	
107 Ag	0.0048	ppb	134.93	1.00	
109 Ag	0.0028	ppb	17.16	1.00	
111 Cd	-0.033	ppb	113.55	1.00	
114 Cd	0.0103	ppb	142.34	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0335	ppb	72.11	1.00	
120 Sn	0.0321	ppb	79.51	1.00	
121 Sb	0.0083	ppb	257.09	1.00	
123 Sb	0.0126	ppb	213.38	1.00	
135 Ba	0.1785	ppb	150.31	1.00	
137 Ba	0.1538	ppb	172.63	1.00	
182 W	0.0276	ppb	73.52	1.00	
203 Tl	0.016	ppb	77.27	1.00	
205 Tl	0.0099	ppb	147.74	1.00	
208 Pb	0.0361	ppb	163.01	1.00	
232 Th	0.0263	ppb	70.63	1.00	
238 U	0.0124	ppb	132.90	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3359725.00	1.88	3258324.00	103.1	79.5 - 120	
45 Sc	2935229.30	2.87	2896530.80	101.3	79.5 - 120	
89 Y	3518649.00	1.93	3408096.80	103.2	79.5 - 120	
159 Tb	3647787.00	1.66	3559216.30	102.5	79.5 - 120	
209 Bi	2031096.00	1.42	2013556.00	100.9	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000304

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\068SMPL.D\068SMPL.D#
Date Acquired: Mar 21 2018 06:08 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019L
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.845	0.3538	ppb	1.90	100.	
11 B	114.375	4.575	ppb	3.62	1000.	
23 Na	1,083.25	43.33	ppb	1.68	200000.	
25 Mg	55,125.	2,205.	ppb	0.22	200000.	
27 Al	187,225.	7,489.	ppb	1.20	200000.	
28 Si	363.25	14.53	ppb	196.15	#VALUE!	
29 Si	-1,290.5	-51.62	ppb	45.02	10000.	
39 K	62,425.	2,497.	ppb	0.83	200000.	
43 Ca	61,925.	2,477.	ppb	1.60	#VALUE!	
44 Ca	61,800.	2,472.	ppb	1.45	200000.	
51 V	286.75	11.47	ppb	1.17	1000.	
52 Cr	186.575	7.463	ppb	1.63	2000.	
53 Cr	210.7	8.428	ppb	3.67	#VALUE!	
55 Mn	3,237.5	129.5	ppb	0.95	2000.	
56 Fe	168,550.	6,742.	ppb	1.52	#VALUE!	
57 Fe	169,900.	6,796.	ppb	1.79	100000.	
59 Co	72.325	2.893	ppb	2.60	1000.	
60 Ni	156.475	6.259	ppb	1.32	1000.	
63 Cu	673.25	26.93	ppb	0.30	#VALUE!	
65 Cu	678.5	27.14	ppb	1.27	2000.	
66 Zn	1,286.25	51.45	ppb	1.71	2000.	
68 Zn	1,335.75	53.43	ppb	1.39	#VALUE!	
75 As	32.6	1.304	ppb	1.58	1000.	
82 Se	3.1175	0.1247	ppb	176.82	1000.	
88 Sr	625.	25.	ppb	1.04	2000.	
98 Mo	5.2825	0.2113	ppb	5.09	1000.	
107 Ag	3.305	0.1322	ppb	4.54	100.	
109 Ag	3.2875	0.1315	ppb	9.14	#VALUE!	
111 Cd	35.1	1.404	ppb	3.88	#VALUE!	
114 Cd	36.075	1.443	ppb	1.09	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	84.675	3.387	ppb	1.54	1000.	
120 Sn	85.275	3.411	ppb	1.03	#VALUE!	
121 Sb	3.4075	0.1363	ppb	5.71	#VALUE!	
123 Sb	3.7425	0.1497	ppb	1.59	1000.	
135 Ba	2,642.5	105.7	ppb	1.23	2000.	
137 Ba	2,617.5	104.7	ppb	1.13	#VALUE!	
182 W	1.2923	0.0517	ppb	24.24	1000.	
203 Tl	3.29	0.1316	ppb	24.96	1000.	
205 Tl	2.95	0.118	ppb	5.12	#VALUE!	
208 Pb	369.25	14.77	ppb	1.37	2000.	
232 Th	86.975	3.479	ppb	1.22	1000.	
238 U	22.545	0.9018	ppb	2.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3633883.80	0.72	3258324.00	111.5	69.5 - 120	
45 Sc	3143399.50	0.36	2896530.80	108.5	69.5 - 120	
89 Y	3866877.80	1.30	3408096.80	113.5	69.5 - 120	
159 Tb	3926080.00	0.66	3559216.30	110.3	69.5 - 120	
209 Bi	2164108.80	1.41	2013556.00	107.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000305

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\069SMPL.D\069SMPL.D#
Date Acquired: Mar 21 2018 06:12 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019A
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	20.325	4.065	ppb	2.61	100.	
11 B	331.3	66.26	ppb	1.99	1000.	
23 Na	12,725.	2,545.	ppb	1.14	200000.	
25 Mg	51,150.	10,230.	ppb	0.86	200000.	
27 Al	177,950.	35,590.	ppb	1.63	200000.	
28 Si	9,430.	1,886.	ppb	2.47	#VALUE!	
29 Si	9,280.	1,856.	ppb	2.05	10000.	
39 K	71,450.	14,290.	ppb	0.98	200000.	
43 Ca	60,400.	12,080.	ppb	0.46	#VALUE!	
44 Ca	59,350.	11,870.	ppb	1.16	200000.	
51 V	321.95	64.39	ppb	0.28	1000.	
52 Cr	216.9	43.38	ppb	0.51	2000.	
53 Cr	241.15	48.23	ppb	0.70	#VALUE!	
55 Mn	2,860.5	572.1	ppb	0.37	2000.	
56 Fe	151,950.	30,390.	ppb	0.69	#VALUE!	
57 Fe	149,500.	29,900.	ppb	0.82	100000.	
59 Co	75.65	15.13	ppb	1.76	1000.	
60 Ni	159.9	31.98	ppb	0.88	1000.	
63 Cu	621.	124.2	ppb	1.11	#VALUE!	
65 Cu	620.	124.	ppb	1.48	2000.	
66 Zn	1,208.	241.6	ppb	0.95	2000.	
68 Zn	1,269.	253.8	ppb	1.03	#VALUE!	
75 As	83.55	16.71	ppb	1.34	1000.	
82 Se	57.65	11.53	ppb	1.26	1000.	
88 Sr	604.	120.8	ppb	0.30	2000.	
98 Mo	58.8	11.76	ppb	0.13	1000.	
107 Ag	14.085	2.817	ppb	0.89	100.	
109 Ag	13.89	2.778	ppb	1.28	#VALUE!	
111 Cd	43.255	8.651	ppb	0.88	#VALUE!	
114 Cd	41.375	8.275	ppb	0.81	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	140.9	28.18	ppb	0.92	1000.	
120 Sn	142.6	28.52	ppb	1.86	#VALUE!	
121 Sb	14.27	2.854	ppb	1.56	#VALUE!	
123 Sb	14.545	2.909	ppb	0.56	1000.	
135 Ba	2,556.	511.2	ppb	1.85	2000.	
137 Ba	2,577.	515.4	ppb	1.16	#VALUE!	
182 W	59.8	11.96	ppb	1.02	1000.	
203 Tl	14.38	2.876	ppb	1.24	1000.	
205 Tl	14.53	2.906	ppb	1.46	#VALUE!	
208 Pb	375.65	75.13	ppb	0.36	2000.	
232 Th	100.55	20.11	ppb	0.63	1000.	
238 U	34.205	6.841	ppb	2.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3686337.80	1.53	3258324.00	113.1	69.5 - 120	
45 Sc	3236509.30	2.19	2896530.80	111.7	69.5 - 120	
89 Y	4217656.00	0.61	3408096.80	123.8	69.5 - 120	IS Fai
159 Tb	3999186.50	1.77	3559216.30	112.4	69.5 - 120	
209 Bi	2118045.50	0.77	2013556.00	105.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000306

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\070SMPL.D\070SMPL.D#
Date Acquired: Mar 21 2018 06:16 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019S
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	54.4	10.88	ppb	2.19	100.	
11 B	558.5	111.7	ppb	3.49	1000.	
23 Na	8,270.	1,654.	ppb	2.05	200000.	
25 Mg	56,050.	11,210.	ppb	1.89	200000.	
27 Al	209,650.	41,930.	ppb	2.01	200000.	
28 Si	4,011.	802.2	ppb	10.38	#VALUE!	
29 Si	4,183.5	836.7	ppb	26.66	10000.	
39 K	72,800.	14,560.	ppb	1.07	200000.	
43 Ca	54,100.	10,820.	ppb	2.91	#VALUE!	
44 Ca	53,150.	10,630.	ppb	1.19	200000.	
51 V	737.5	147.5	ppb	1.82	1000.	
52 Cr	360.15	72.03	ppb	1.88	2000.	
53 Cr	373.65	74.73	ppb	1.75	#VALUE!	
55 Mn	3,172.	634.4	ppb	1.69	2000.	
56 Fe	152,200.	30,440.	ppb	2.10	#VALUE!	
57 Fe	149,800.	29,960.	ppb	1.99	100000.	
59 Co	490.45	98.09	ppb	1.41	1000.	
60 Ni	544.5	108.9	ppb	2.06	1000.	
63 Cu	770.	154.	ppb	1.77	#VALUE!	
65 Cu	777.5	155.5	ppb	2.37	2000.	
66 Zn	1,455.	291.	ppb	2.08	2000.	
68 Zn	1,569.5	313.9	ppb	1.55	#VALUE!	
75 As	111.5	22.3	ppb	1.16	1000.	
82 Se	86.55	17.31	ppb	0.57	1000.	
88 Sr	957.	191.4	ppb	1.67	2000.	
98 Mo	85.5	17.1	ppb	0.90	1000.	
107 Ag	45.96	9.192	ppb	2.40	100.	
109 Ag	45.25	9.05	ppb	1.66	#VALUE!	
111 Cd	244.35	48.87	ppb	1.52	#VALUE!	
114 Cd	244.3	48.86	ppb	1.95	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	549.5	109.9	ppb	0.99	1000.	
120 Sn	554.5	110.9	ppb	1.41	#VALUE!	
121 Sb	37.905	7.581	ppb	1.44	#VALUE!	
123 Sb	37.885	7.577	ppb	2.37	1000.	
135 Ba	4,522.5	904.5	ppb	1.48	2000.	
137 Ba	4,432.	886.4	ppb	0.84	#VALUE!	
182 W	53.1	10.62	ppb	0.91	1000.	
203 Tl	100.45	20.09	ppb	0.68	1000.	
205 Tl	100.3	20.06	ppb	0.75	#VALUE!	
208 Pb	434.4	86.88	ppb	0.31	2000.	
232 Th	181.95	36.39	ppb	0.32	1000.	
238 U	116.7	23.34	ppb	0.69	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3713993.80	1.13	3258324.00	114.0	69.5 - 120	
45 Sc	3261068.50	1.40	2896530.80	112.6	69.5 - 120	
89 Y	4211797.50	1.86	3408096.80	123.6	69.5 - 120	IS Fai
159 Tb	3996886.30	1.24	3559216.30	112.3	69.5 - 120	
209 Bi	2107794.30	0.18	2013556.00	104.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000307

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\071SMPL.D\071SMPL.D#
Date Acquired: Mar 21 2018 06:20 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-019P
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	55.	11.	ppb	0.76	100.	
11 B	563.	112.6	ppb	4.49	1000.	
23 Na	8,220.	1,644.	ppb	0.95	200000.	
25 Mg	58,250.	11,650.	ppb	0.79	200000.	
27 Al	214,400.	42,880.	ppb	0.48	200000.	
28 Si	3,324.	664.8	ppb	2.29	#VALUE!	
29 Si	2,918.5	583.7	ppb	1.64	10000.	
39 K	75,800.	15,160.	ppb	0.64	200000.	
43 Ca	62,750.	12,550.	ppb	1.58	#VALUE!	
44 Ca	61,550.	12,310.	ppb	0.69	200000.	
51 V	750.	150.	ppb	2.15	1000.	
52 Cr	373.65	74.73	ppb	1.89	2000.	
53 Cr	376.5	75.3	ppb	2.13	#VALUE!	
55 Mn	3,315.	663.	ppb	1.62	2000.	
56 Fe	161,450.	32,290.	ppb	1.71	#VALUE!	
57 Fe	158,900.	31,780.	ppb	1.62	100000.	
59 Co	494.75	98.95	ppb	1.83	1000.	
60 Ni	555.	111.	ppb	2.52	1000.	
63 Cu	821.5	164.3	ppb	2.50	#VALUE!	
65 Cu	831.5	166.3	ppb	2.50	2000.	
66 Zn	1,514.	302.8	ppb	2.22	2000.	
68 Zn	1,636.	327.2	ppb	1.83	#VALUE!	
75 As	111.25	22.25	ppb	3.13	1000.	
82 Se	84.45	16.89	ppb	1.25	1000.	
88 Sr	993.	198.6	ppb	0.62	2000.	
98 Mo	84.65	16.93	ppb	1.71	1000.	
107 Ag	45.815	9.163	ppb	2.27	100.	
109 Ag	45.88	9.176	ppb	1.57	#VALUE!	
111 Cd	245.7	49.14	ppb	1.96	#VALUE!	
114 Cd	244.45	48.89	ppb	2.10	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	553.	110.6	ppb	1.84	1000.	
120 Sn	560.5	112.1	ppb	1.64	#VALUE!	
121 Sb	37.52	7.504	ppb	1.76	#VALUE!	
123 Sb	37.91	7.582	ppb	2.93	1000.	
135 Ba	4,624.5	924.9	ppb	1.74	2000.	
137 Ba	4,574.5	914.9	ppb	1.10	#VALUE!	
182 W	51.7	10.34	ppb	1.88	1000.	
203 Tl	100.75	20.15	ppb	1.19	1000.	
205 Tl	101.	20.2	ppb	1.86	#VALUE!	
208 Pb	460.6	92.12	ppb	0.80	2000.	
232 Th	181.	36.2	ppb	1.50	1000.	
238 U	118.1	23.62	ppb	0.93	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3655048.80	0.46	3258324.00	112.2	69.5 - 120	
45 Sc	3243954.00	0.02	2896530.80	112.0	69.5 - 120	
89 Y	4182063.80	1.39	3408096.80	122.7	69.5 - 120	IS Fai
159 Tb	3949645.30	1.79	3559216.30	111.0	69.5 - 120	
209 Bi	2082699.10	0.96	2013556.00	103.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000308

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\072SMPL.D\072SMPL.D#
Date Acquired: Mar 21 2018 06:25 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-021
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.55	1.31	ppb	3.93	100.	
11 B	95.4	19.08	ppb	1.22	1000.	
23 Na	952.5	190.5	ppb	0.47	200000.	
25 Mg	35,350.	7,070.	ppb	0.65	200000.	
27 Al	135,850.	27,170.	ppb	1.71	200000.	
28 Si	3,263.	652.6	ppb	6.83	#VALUE!	
29 Si	2,760.5	552.1	ppb	2.97	10000.	
39 K	42,120.	8,424.	ppb	0.79	200000.	
43 Ca	32,315.	6,463.	ppb	0.48	#VALUE!	
44 Ca	32,475.	6,495.	ppb	1.08	200000.	
51 V	216.8	43.36	ppb	1.81	1000.	
52 Cr	130.6	26.12	ppb	0.75	2000.	
53 Cr	147.	29.4	ppb	0.90	#VALUE!	
55 Mn	2,417.5	483.5	ppb	1.39	2000.	
56 Fe	110,750.	22,150.	ppb	1.83	#VALUE!	
57 Fe	109,200.	21,840.	ppb	1.59	100000.	
59 Co	52.1	10.42	ppb	1.96	1000.	
60 Ni	98.15	19.63	ppb	1.62	1000.	
63 Cu	204.05	40.81	ppb	2.24	#VALUE!	
65 Cu	205.25	41.05	ppb	2.39	2000.	
66 Zn	513.5	102.7	ppb	2.00	2000.	
68 Zn	552.5	110.5	ppb	0.48	#VALUE!	
75 As	26.855	5.371	ppb	1.14	1000.	
82 Se	5.21	1.042	ppb	38.23	1000.	
88 Sr	333.1	66.62	ppb	2.31	2000.	
98 Mo	4.207	0.8414	ppb	5.49	1000.	
107 Ag	2.0305	0.4061	ppb	7.75	100.	
109 Ag	1.8195	0.3639	ppb	4.32	#VALUE!	
111 Cd	27.19	5.438	ppb	1.22	#VALUE!	
114 Cd	26.145	5.229	ppb	0.97	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	55.5	11.1	ppb	0.83	1000.	
120 Sn	56.3	11.26	ppb	0.91	#VALUE!	
121 Sb	2.31	0.462	ppb	3.67	#VALUE!	
123 Sb	2.4415	0.4883	ppb	6.14	1000.	
135 Ba	1,676.	335.2	ppb	1.20	2000.	
137 Ba	1,666.	333.2	ppb	0.82	#VALUE!	
182 W	1.334	0.2668	ppb	4.39	1000.	
203 Tl	2.7695	0.5539	ppb	3.30	1000.	
205 Tl	2.885	0.577	ppb	1.68	#VALUE!	
208 Pb	230.95	46.19	ppb	1.22	2000.	
232 Th	70.7	14.14	ppb	1.57	1000.	
238 U	11.525	2.305	ppb	1.28	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3515989.00	2.06	3258324.00	107.9	69.5 - 120	
45 Sc	3153685.00	1.00	2896530.80	108.9	69.5 - 120	
89 Y	4088127.00	1.12	3408096.80	120.0	69.5 - 120	
159 Tb	3927821.30	0.19	3559216.30	110.4	69.5 - 120	
209 Bi	2100855.50	0.91	2013556.00	104.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000309

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\073SMPL.D\073SMPL.D#
Date Acquired: Mar 21 2018 06:29 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: SL2133-022
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.295	1.459	ppb	1.27	100.	
11 B	106.6	21.32	ppb	0.92	1000.	
23 Na	1,216.5	243.3	ppb	2.05	200000.	
25 Mg	45,105.	9,021.	ppb	0.39	200000.	
27 Al	150,700.	30,140.	ppb	1.14	200000.	
28 Si	3,010.	602.	ppb	8.09	#VALUE!	
29 Si	2,761.5	552.3	ppb	15.09	10000.	
39 K	54,100.	10,820.	ppb	0.80	200000.	
43 Ca	28,790.	5,758.	ppb	0.30	#VALUE!	
44 Ca	28,960.	5,792.	ppb	1.13	200000.	
51 V	232.2	46.44	ppb	1.75	1000.	
52 Cr	131.95	26.39	ppb	1.56	2000.	
53 Cr	148.75	29.75	ppb	2.42	#VALUE!	
55 Mn	2,754.	550.8	ppb	2.02	2000.	
56 Fe	120,550.	24,110.	ppb	2.17	#VALUE!	
57 Fe	117,950.	23,590.	ppb	2.77	100000.	
59 Co	57.25	11.45	ppb	2.64	1000.	
60 Ni	107.8	21.56	ppb	3.45	1000.	
63 Cu	201.6	40.32	ppb	2.40	#VALUE!	
65 Cu	203.6	40.72	ppb	2.15	2000.	
66 Zn	499.25	99.85	ppb	2.41	2000.	
68 Zn	541.	108.2	ppb	2.28	#VALUE!	
75 As	24.27	4.854	ppb	7.25	1000.	
82 Se	5.275	1.055	ppb	24.32	1000.	
88 Sr	414.3	82.86	ppb	0.44	2000.	
98 Mo	7.58	1.516	ppb	2.28	1000.	
107 Ag	2.761	0.5522	ppb	6.10	100.	
109 Ag	2.629	0.5258	ppb	1.17	#VALUE!	
111 Cd	6.94	1.388	ppb	8.56	#VALUE!	
114 Cd	5.335	1.067	ppb	6.19	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.75	10.15	ppb	1.73	1000.	
120 Sn	51.4	10.28	ppb	1.91	#VALUE!	
121 Sb	2.246	0.4492	ppb	1.39	#VALUE!	
123 Sb	2.238	0.4476	ppb	4.94	1000.	
135 Ba	1,707.5	341.5	ppb	0.52	2000.	
137 Ba	1,697.	339.4	ppb	0.72	#VALUE!	
182 W	0.8545	0.1709	ppb	4.18	1000.	
203 Tl	2.7815	0.5563	ppb	3.31	1000.	
205 Tl	2.738	0.5476	ppb	2.99	#VALUE!	
208 Pb	168.35	33.67	ppb	0.67	2000.	
232 Th	86.6	17.32	ppb	0.88	1000.	
238 U	12.655	2.531	ppb	0.37	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3576702.50	1.82	3258324.00	109.8	69.5 - 120	
45 Sc	3202893.00	1.35	2896530.80	110.6	69.5 - 120	
89 Y	4182207.50	1.22	3408096.80	122.7	69.5 - 120	IS Fai
159 Tb	3985332.80	0.12	3559216.30	112.0	69.5 - 120	
209 Bi	2111340.30	0.95	2013556.00	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000310

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\074SMPL.D\074SMPL.D#
Date Acquired: Mar 21 2018 06:33 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0042	0.0042	ppb	241.46	100.	
11 B	1.309	1.309	ppb	9.77	1000.	
23 Na	9.234	9.234	ppb	212.69	200000.	
25 Mg	15.17	15.17	ppb	170.53	200000.	
27 Al	27.51	27.51	ppb	166.96	200000.	
28 Si	-59.55	-59.55	ppb	75.16	#VALUE!	
29 Si	-86.34	-86.34	ppb	20.78	10000.	
39 K	6.004	6.004	ppb	330.11	200000.	
43 Ca	25.07	25.07	ppb	179.58	#VALUE!	
44 Ca	24.25	24.25	ppb	186.14	200000.	
51 V	0.0477	0.0477	ppb	243.14	1000.	
52 Cr	0.0147	0.0147	ppb	490.33	2000.	
53 Cr	0.1999	0.1999	ppb	94.95	#VALUE!	
55 Mn	0.3432	0.3432	ppb	161.22	2000.	
56 Fe	12.86	12.86	ppb	338.49	#VALUE!	
57 Fe	16.85	16.85	ppb	235.19	100000.	
59 Co	0.0322	0.0322	ppb	188.75	1000.	
60 Ni	0.0358	0.0358	ppb	156.95	1000.	
63 Cu	0.0447	0.0447	ppb	180.09	#VALUE!	
65 Cu	0.0592	0.0592	ppb	179.70	2000.	
66 Zn	0.0836	0.0836	ppb	153.89	2000.	
68 Zn	-0.1375	-0.1375	ppb	134.76	#VALUE!	
75 As	-0.1251	-0.1251	ppb	164.35	1000.	
82 Se	-0.0946	-0.0946	ppb	211.73	1000.	
88 Sr	0.1492	0.1492	ppb	169.77	2000.	
98 Mo	0.0867	0.0867	ppb	172.22	1000.	
107 Ag	0.007	0.007	ppb	143.67	100.	
109 Ag	0.0061	0.0061	ppb	182.52	#VALUE!	
111 Cd	-0.0516	-0.0516	ppb	65.18	#VALUE!	
114 Cd	0.0234	0.0234	ppb	154.73	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0227	0.0227	ppb	201.58	1000.	
120 Sn	0.0181	0.0181	ppb	182.68	#VALUE!	
121 Sb	0.0179	0.0179	ppb	258.68	#VALUE!	
123 Sb	0.0158	0.0158	ppb	169.06	1000.	
135 Ba	0.3559	0.3559	ppb	167.55	2000.	
137 Ba	0.3774	0.3774	ppb	164.18	#VALUE!	
182 W	0.0083	0.0083	ppb	344.54	1000.	
203 Tl	0.0129	0.0129	ppb	180.36	1000.	
205 Tl	0.0215	0.0215	ppb	152.09	#VALUE!	
208 Pb	0.0558	0.0558	ppb	159.72	2000.	
232 Th	0.0294	0.0294	ppb	131.03	1000.	
238 U	0.0178	0.0178	ppb	169.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3292312.30	0.57	3258324.00	101.0	69.5 - 120	
45 Sc	2894127.00	0.91	2896530.80	99.9	69.5 - 120	
89 Y	3457709.50	1.32	3408096.80	101.5	69.5 - 120	
159 Tb	3617395.30	0.97	3559216.30	101.6	69.5 - 120	
209 Bi	2003848.10	1.10	2013556.00	99.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000311

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\075SMPL.D\075SMPL.D#
Date Acquired: Mar 21 2018 06:37 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	257.62	100.	
11 B	0.8943	0.8943	ppb	6.38	1000.	
23 Na	-2.151	-2.151	ppb	8.54	200000.	
25 Mg	0.2365	0.2365	ppb	15.99	200000.	
27 Al	1.085	1.085	ppb	7.40	200000.	
28 Si	-61.16	-61.16	ppb	10.91	#VALUE!	
29 Si	-106.3	-106.3	ppb	25.05	10000.	LOW
39 K	-6.736	-6.736	ppb	26.87	200000.	
43 Ca	0.8352	0.8352	ppb	334.17	#VALUE!	
44 Ca	-1.565	-1.565	ppb	65.75	200000.	
51 V	-0.0261	-0.0261	ppb	301.65	1000.	
52 Cr	-0.0353	-0.0353	ppb	49.26	2000.	
53 Cr	0.1865	0.1865	ppb	92.39	#VALUE!	
55 Mn	0.0333	0.0333	ppb	29.99	2000.	
56 Fe	-12.27	-12.27	ppb	13.09	#VALUE!	
57 Fe	-6.163	-6.163	ppb	10.28	100000.	
59 Co	-0.007	-0.007	ppb	66.27	1000.	
60 Ni	-0.0051	-0.0051	ppb	18.69	1000.	
63 Cu	-0.0026	-0.0026	ppb	105.61	#VALUE!	
65 Cu	0.0024	0.0024	ppb	363.42	2000.	
66 Zn	-0.0202	-0.0202	ppb	176.56	2000.	
68 Zn	-0.1682	-0.1682	ppb	36.03	#VALUE!	
75 As	-0.139	-0.139	ppb	28.77	1000.	
82 Se	-0.1437	-0.1437	ppb	21.82	1000.	
88 Sr	0.0014	0.0014	ppb	288.97	2000.	
98 Mo	0.0003	0.0003	ppb	594.10	1000.	
107 Ag	0.001	0.001	ppb	100.62	100.	
109 Ag	-0.0005	-0.0005	ppb	260.99	#VALUE!	
111 Cd	-0.065	-0.065	ppb	3.28	#VALUE!	
114 Cd	0.0001	0.0001	ppb	2229.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	-0.0105	-0.0105	ppb	151.05	1000.	
120 Sn	-0.0107	-0.0107	ppb	65.01	#VALUE!	
121 Sb	-0.0052	-0.0052	ppb	80.31	#VALUE!	
123 Sb	-0.0068	-0.0068	ppb	36.49	1000.	
135 Ba	0.0138	0.0138	ppb	101.01	2000.	
137 Ba	0.0183	0.0183	ppb	37.59	#VALUE!	
182 W	-0.0086	-0.0086	ppb	53.85	1000.	
203 Tl	0.0024	0.0024	ppb	132.10	1000.	
205 Tl	0.0017	0.0017	ppb	62.21	#VALUE!	
208 Pb	0.0066	0.0066	ppb	57.61	2000.	
232 Th	0.0026	0.0026	ppb	52.49	1000.	
238 U	-0.0005	-0.0005	ppb	126.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3342504.50	3.18	3258324.00	102.6	69.5 - 120	
45 Sc	2926950.30	1.49	2896530.80	101.1	69.5 - 120	
89 Y	3482847.80	0.14	3408096.80	102.2	69.5 - 120	
159 Tb	3643704.50	0.31	3559216.30	102.4	69.5 - 120	
209 Bi	2012372.60	0.49	2013556.00	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000312

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\076SMPL.D\076SMPL.D#
Date Acquired: Mar 21 2018 06:41 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: PBWLC16IMW1
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0035	-0.0007	ppb	177.03	100.	
11 B	3.5345	0.7069	ppb	14.87	1000.	
23 Na	10.94	2.188	ppb	11.04	200000.	
25 Mg	5.375	1.075	ppb	13.99	200000.	
27 Al	9.035	1.807	ppb	5.95	200000.	
28 Si	-298.35	-59.67	ppb	50.24	#VALUE!	
29 Si	-403.9	-80.78	ppb	39.54	10000.	
39 K	-28.04	-5.608	ppb	16.01	200000.	
43 Ca	26.555	5.311	ppb	28.66	#VALUE!	
44 Ca	-5.455	-1.091	ppb	89.34	200000.	
51 V	0.1752	0.035	ppb	129.11	1000.	
52 Cr	0.609	0.1218	ppb	14.18	2000.	
53 Cr	31.43	6.286	ppb	2.53	#VALUE!	
55 Mn	0.3482	0.0696	ppb	9.07	2000.	
56 Fe	-45.87	-9.174	ppb	29.53	#VALUE!	
57 Fe	-21.055	-4.211	ppb	5.13	100000.	
59 Co	-0.0228	-0.0046	ppb	26.19	1000.	
60 Ni	0.0257	0.0051	ppb	52.69	1000.	
63 Cu	0.2731	0.0546	ppb	3.18	#VALUE!	
65 Cu	0.3421	0.0684	ppb	17.21	2000.	
66 Zn	0.3834	0.0767	ppb	65.07	2000.	
68 Zn	-0.8605	-0.1721	ppb	7.09	#VALUE!	
75 As	0.1158	0.0232	ppb	1017.30	1000.	
82 Se	0.5175	0.1035	ppb	120.19	1000.	
88 Sr	0.0289	0.0058	ppb	94.24	2000.	
98 Mo	0.0398	0.008	ppb	121.94	1000.	
107 Ag	0.011	0.0022	ppb	31.96	100.	
109 Ag	-0.0028	-0.0006	ppb	71.73	#VALUE!	
111 Cd	-0.3454	-0.0691	ppb	30.06	#VALUE!	
114 Cd	-0.0018	-0.0004	ppb	1037.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.179	0.2358	ppb	10.74	1000.	
120 Sn	1.1935	0.2387	ppb	8.41	#VALUE!	
121 Sb	0.0741	0.0148	ppb	28.20	#VALUE!	
123 Sb	0.1066	0.0213	ppb	36.09	1000.	
135 Ba	0.1803	0.0361	ppb	16.42	2000.	
137 Ba	0.1943	0.0389	ppb	62.51	#VALUE!	
182 W	0.0174	0.0035	ppb	204.47	1000.	
203 Tl	0.0187	0.0037	ppb	118.64	1000.	
205 Tl	0.0003	0.0001	ppb	2064.30	#VALUE!	
208 Pb	0.0372	0.0074	ppb	32.12	2000.	
232 Th	0.0422	0.0084	ppb	24.08	1000.	
238 U	-0.0054	-0.0011	ppb	17.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3337187.00	2.14	3258324.00	102.4	69.5 - 120	
45 Sc	2884112.00	1.20	2896530.80	99.6	69.5 - 120	
89 Y	3506281.50	0.74	3408096.80	102.9	69.5 - 120	
159 Tb	3643863.30	0.60	3559216.30	102.4	69.5 - 120	
209 Bi	2000322.90	0.44	2013556.00	99.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000313

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\077SMPL.D\077SMPL.D#
Date Acquired: Mar 21 2018 06:45 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: LCSWLC16IMW1
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.285	9.857	ppb	0.53	100.	
11 B	504.5	100.9	ppb	4.74	1000.	
23 Na	7,655.	1,531.	ppb	2.03	200000.	
25 Mg	5,385.	1,077.	ppb	0.86	200000.	
27 Al	2,126.5	425.3	ppb	0.95	200000.	
28 Si	495.2	99.04	ppb	35.42	#VALUE!	
29 Si	344.5	68.9	ppb	56.65	10000.	
39 K	10,245.	2,049.	ppb	1.32	200000.	
43 Ca	3,141.	628.2	ppb	3.76	#VALUE!	
44 Ca	2,705.5	541.1	ppb	1.72	200000.	
51 V	523.5	104.7	ppb	0.55	1000.	
52 Cr	205.35	41.07	ppb	0.65	2000.	
53 Cr	238.1	47.62	ppb	0.43	#VALUE!	
55 Mn	520.	104.	ppb	1.68	2000.	
56 Fe	969.5	193.9	ppb	2.01	#VALUE!	
57 Fe	1,021.	204.2	ppb	2.28	100000.	
59 Co	535.	107.	ppb	0.50	1000.	
60 Ni	525.5	105.1	ppb	0.64	1000.	
63 Cu	258.1	51.62	ppb	0.49	#VALUE!	
65 Cu	260.85	52.17	ppb	0.68	2000.	
66 Zn	515.5	103.1	ppb	0.67	2000.	
68 Zn	586.	117.2	ppb	0.76	#VALUE!	
75 As	101.55	20.31	ppb	1.35	1000.	
82 Se	98.05	19.61	ppb	1.49	1000.	
88 Sr	523.	104.6	ppb	1.89	2000.	
98 Mo	102.65	20.53	ppb	0.44	1000.	
107 Ag	52.65	10.53	ppb	0.73	100.	
109 Ag	52.95	10.59	ppb	1.17	#VALUE!	
111 Cd	263.3	52.66	ppb	0.54	#VALUE!	
114 Cd	265.5	53.1	ppb	0.47	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	520.5	104.1	ppb	1.40	1000.	
120 Sn	520.5	104.1	ppb	2.25	#VALUE!	
121 Sb	106.35	21.27	ppb	1.98	#VALUE!	
123 Sb	106.55	21.31	ppb	1.38	1000.	
135 Ba	2,124.5	424.9	ppb	1.95	2000.	
137 Ba	2,109.5	421.9	ppb	1.76	#VALUE!	
182 W	102.5	20.5	ppb	2.15	1000.	
203 Tl	103.55	20.71	ppb	1.59	1000.	
205 Tl	103.6	20.72	ppb	1.28	#VALUE!	
208 Pb	105.05	21.01	ppb	1.21	2000.	
232 Th	100.35	20.07	ppb	1.47	1000.	
238 U	96.8	19.36	ppb	2.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3655357.00	1.10	3258324.00	112.2	69.5 - 120	
45 Sc	3035024.00	1.57	2896530.80	104.8	69.5 - 120	
89 Y	3661544.50	0.62	3408096.80	107.4	69.5 - 120	
159 Tb	3830684.50	1.73	3559216.30	107.6	69.5 - 120	
209 Bi	2095199.50	0.92	2013556.00	104.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000314

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\078_CCV.D\078_CCV.D#
Date Acquired: Mar 21 2018 06:49 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.77	ppb	0.42	25	99.08	
11 B	25.79	ppb	2.27	25	103.16	
23 Na	4,915.	ppb	0.95	5,000	98.3	
25 Mg	4,973.	ppb	0.56	5,000	99.46	
27 Al	498.	ppb	0.99	500	99.6	
28 Si	428.5	ppb	4.13	500	85.7	
29 Si	376.8	ppb	2.00	500	75.36	Fail
39 K	4,973.	ppb	0.45	5,000	99.46	
43 Ca	5,080.	ppb	3.12	5,000	101.6	
44 Ca	5,149.	ppb	1.58	5,000	102.98	
51 V	24.74	ppb	1.43	25	98.96	
52 Cr	24.7	ppb	0.43	25	98.8	
53 Cr	25.15	ppb	0.47	25	100.6	
55 Mn	24.84	ppb	0.76	25	99.36	
56 Fe	4,933.	ppb	0.16	5,000	98.66	
57 Fe	5,091.	ppb	0.84	5,000	101.82	
59 Co	24.74	ppb	0.21	25	98.96	
60 Ni	24.93	ppb	2.24	25	99.72	
63 Cu	24.93	ppb	0.95	25	99.72	
65 Cu	24.75	ppb	1.00	25	99	
66 Zn	24.98	ppb	1.29	25	99.92	
68 Zn	24.38	ppb	1.79	25	97.52	
75 As	24.7	ppb	1.29	25	98.8	
82 Se	25.44	ppb	0.93	25	101.76	
88 Sr	24.77	ppb	0.89	25	99.08	
98 Mo	24.79	ppb	0.61	25	99.16	
107 Ag	25.21	ppb	0.17	25	100.84	
109 Ag	25.44	ppb	0.86	25	101.76	
111 Cd	25.25	ppb	1.21	25	101	
114 Cd	25.44	ppb	0.88	25	101.76	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.59	ppb	1.33	25	102.36	
120 Sn	25.53	ppb	0.90	25	102.12	
121 Sb	25.38	ppb	1.44	25	101.52	
123 Sb	25.35	ppb	1.78	25	101.4	
135 Ba	25.06	ppb	1.99	25	100.24	
137 Ba	25.31	ppb	1.37	25	101.24	
182 W	24.62	ppb	1.44	25	98.48	
203 Tl	25.01	ppb	0.94	25	100.04	
205 Tl	24.95	ppb	0.44	25	99.8	
208 Pb	24.96	ppb	0.64	25	99.84	
232 Th	24.05	ppb	0.64	25	96.2	
238 U	23.11	ppb	0.45	25	92.44	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3513232.80	0.85	3258324.00	107.8	80 - 120.4	
45 Sc	3116569.80	1.19	2896530.80	107.6	80 - 120.4	
89 Y	3733907.80	0.41	3408096.80	109.6	80 - 120.4	
159 Tb	3863022.50	0.56	3559216.30	108.5	80 - 120.4	
209 Bi	2125968.80	0.77	2013556.00	105.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000315

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC21A.B\079_CCB.D\079_CCB.D#
Date Acquired: Mar 21 2018 06:53 pm
Acq. Method: 1PTCAL16.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCAL16.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCAL16.C
Last Cal. Update: Mar 21 2018 02:55 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0002	ppb	449.57	1.00	
11 B	1.187	ppb	8.36	1.00	
23 Na	-1.713	ppb	33.44	1.00	
25 Mg	0.5275	ppb	155.81	1.00	
27 Al	1.364	ppb	114.66	1.00	
28 Si	-17.35	ppb	183.52	1.00	
29 Si	-65.01	ppb	65.47	1.00	
39 K	-4.383	ppb	49.05	1.00	
43 Ca	2.081	ppb	181.36	1.00	
44 Ca	-2.259	ppb	48.74	1.00	
51 V	-0.0398	ppb	208.60	1.00	
52 Cr	-0.0355	ppb	6.64	1.00	
53 Cr	0.609	ppb	35.78	1.00	
55 Mn	0.0377	ppb	46.29	1.00	
56 Fe	-6.262	ppb	56.80	1.00	
57 Fe	-2.971	ppb	38.34	1.00	
59 Co	-0.0011	ppb	463.56	1.00	
60 Ni	-0.0014	ppb	1113.10	1.00	
63 Cu	-0.0098	ppb	94.60	1.00	
65 Cu	0.0021	ppb	295.64	1.00	
66 Zn	-0.0193	ppb	346.43	1.00	
68 Zn	-0.24	ppb	11.77	1.00	
75 As	0.1325	ppb	67.67	1.00	
82 Se	0.2923	ppb	86.59	1.00	
88 Sr	0.003	ppb	318.85	1.00	
98 Mo	0.0143	ppb	101.19	1.00	
107 Ag	0.0036	ppb	111.16	1.00	
109 Ag	-0.001	ppb	182.06	1.00	
111 Cd	-0.0599	ppb	71.32	1.00	
114 Cd	0.0023	ppb	168.93	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0268	ppb	36.62	1.00	
120 Sn	0.0199	ppb	52.31	1.00	
121 Sb	-0.0001	ppb	4562.40	1.00	
123 Sb	-0.0005	ppb	1117.50	1.00	
135 Ba	0.0116	ppb	231.99	1.00	
137 Ba	0.0159	ppb	142.63	1.00	
182 W	0.01	ppb	118.78	1.00	
203 Tl	0.0051	ppb	120.12	1.00	
205 Tl	0.0041	ppb	71.13	1.00	
208 Pb	0.0045	ppb	93.24	1.00	
232 Th	0.0169	ppb	14.76	1.00	
238 U	0.0027	ppb	24.43	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3236196.00	0.41	3258324.00	99.3	79.5 - 120	
45 Sc	2869199.30	2.26	2896530.80	99.1	79.5 - 120	
89 Y	3427975.30	1.67	3408096.80	100.6	79.5 - 120	
159 Tb	3576650.80	1.61	3559216.30	100.5	79.5 - 120	
209 Bi	1982604.80	0.12	2013556.00	98.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC21A.B\017CALB.D\017CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000316

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500)

ANALYST: MD

ANALYSIS DATE: 03/22/2018

REVIEWED

FILE NAME: JLC22E

METHOD: ICP-MS

- ☐ 200.8
- ☑ 6020
- ☑ DOD

JSS-23-18

KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
_____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17623	03/21/2018	03/21/2019	0 ug/L
Standard 1	MW17625	03/21/2018	04/26/2018	Varies by Element
ICV	MW17628	03/21/2018	06/21/2018	Varies by Element
PQL	MW17629	03/21/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17570	02/16/2018	05/14/2018	Varies by Element
ICSA	MW17630	03/21/2018	03/27/2018	Varies by Element
ICSAB	MW17631	03/21/2018	03/27/2018	Varies by Element
CCV	MW17626	03/21/2018	04/26/2018	Varies by Element
Internal Standard	MW17585	02/22/2018	05/22/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

-Ge was used for internal std. due to internal standard instabilities while analyzing with V

JSS 23 18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17623(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL ofMW17623(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

ME-019 – Revision 1 – 01/20/2016

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC22E	3/22/2018	5:09:00 13:55	MD
200.8 TUNE	1	JLC22E	3/22/2018	5:09:00 13:57	MD
Cal Blank	1	JLC22E	3/22/2018	5:09:00 17:09	MD
Cal Std 6	1	JLC22E	3/22/2018	5:13:00 17:13	MD
ICV	1	JLC22E	3/22/2018	5:17:00 17:17	MD
ICB	1	JLC22E	3/22/2018	5:21:00 17:21	MD
PQL	1	JLC22E	3/22/2018	5:25:00 17:25	MD
RINSE	1	JLC22E	3/22/2018	5:29:00 17:29	MD
ICSA	1	JLC22E	3/22/2018	5:33:00 17:33	MD
ICSAB	1	JLC22E	3/22/2018	5:37:00 17:37	MD
RINSE	1	JLC22E	3/22/2018	5:41:00 17:41	MD
LRS1	1	JLC22E	3/22/2018	5:45:00 17:45	MD
LRS2	1	JLC22E	3/22/2018	5:49:00 17:49	MD
RINSE	1	JLC22E	3/22/2018	5:53:00 17:53	MD
RINSE	1	JLC22E	3/22/2018	5:57:00 17:57	MD
CCV	1	JLC22E	3/22/2018	6:01:00 18:01	MD
CCB	1	JLC22E	3/22/2018	6:05:00 18:05	MD
SL2079-001	5	JLC22E	3/22/2018	6:09:00 18:09	MD
SL2079-002	5	JLC22E	3/22/2018	6:13:00 18:13	MD
SL2133-001	5	JLC22E	3/22/2018	6:18:00 18:18	MD
SL2133-005	5	JLC22E	3/22/2018	6:22:00 18:22	MD
SL2133-008	5	JLC22E	3/22/2018	6:26:00 18:26	MD
SL2133-009	5	JLC22E	3/22/2018	6:30:00 18:30	MD
SL2133-012	5	JLC22E	3/22/2018	6:34:00 18:34	MD
SL2133-013	5	JLC22E	3/22/2018	6:38:00 18:38	MD
RINSE	1	JLC22E	3/22/2018	6:42:00 18:42	MD
RINSE	1	JLC22E	3/22/2018	6:46:00 18:46	MD
CCV	1	JLC22E	3/22/2018	6:50:00 18:50	MD
CCB	1	JLC22E	3/22/2018	6:54:00 18:54	MD
PBSLC21IMS1	5	JLC22E	3/22/2018	6:58:00 18:58	MD
LCSOLC21IMS1	5	JLC22E	3/22/2018	7:03:00 19:03	MD
SL2004-007	5	JLC22E	3/22/2018	7:06:00 19:06	MD
SL2005-005	5	JLC22E	3/22/2018	7:11:00 19:11	MD
SL2006-005	5	JLC22E	3/22/2018	7:15:00 19:15	MD
SL2006-006	5	JLC22E	3/22/2018	7:19:00 19:19	MD
RINSE	1	JLC22E	3/22/2018	7:24:00 19:24	MD
RINSE	1	JLC22E	3/22/2018	7:28:00 19:28	MD
PBSLC22IMS1	5	JLC22E	3/22/2018	7:32:00 19:32	MD
LCSOLC22IMS1	5	JLC22E	3/22/2018	7:36:00 19:36	MD
CCV	1	JLC22E	3/22/2018	7:40:00 19:40	MD
CCB	1	JLC22E	3/22/2018	7:44:00 19:44	MD
SL2329-001	5	JLC22E	3/22/2018	7:48:00 19:48	MD
SL2329-002	5	JLC22E	3/22/2018	7:53:00 19:53	MD
SL2329-003	5	JLC22E	3/22/2018	7:57:00 19:57	MD

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2329-004	5	JLC22E	3/22/2018	8:01:00 20:01	MD
SL2329-005	5	JLC22E	3/22/2018	8:05:00 20:05	MD
SL2329-006	5	JLC22E	3/22/2018	8:10:00 20:10	MD
SL2329-007	5	JLC22E	3/22/2018	8:14:00 20:14	MD
SL2329-008	5	JLC22E	3/22/2018	8:18:00 20:18	MD
SL2329-008L	25	JLC22E	3/22/2018	8:23:00 20:23	MD
RINSE	1	JLC22E	3/22/2018	8:27:00 20:27	MD
CCV	1	JLC22E	3/22/2018	8:31:00 20:31	MD
CCB	1	JLC22E	3/22/2018	8:35:00 20:35	MD
SL2329-008A	5	JLC22E	3/22/2018	8:39:00 20:39	MD
SL2329-008S	5	JLC22E	3/22/2018	8:44:00 20:44	MD
SL2329-008P	5	JLC22E	3/22/2018	8:48:00 20:48	MD
SL2329-009	5	JLC22E	3/22/2018	8:52:00 20:52	MD
SL2329-010	5	JLC22E	3/22/2018	8:57:00 20:57	MD
SL2329-011	5	JLC22E	3/22/2018	9:01:00 21:01	MD
SL2329-012	5	JLC22E	3/22/2018	9:05:00 21:05	MD
SL2329-013	5	JLC22E	3/22/2018	9:10:00 21:10	MD
SL2329-014	5	JLC22E	3/22/2018	9:14:00 21:14	MD
RINSE	1	JLC22E	3/22/2018	9:18:00 21:18	MD
CCV	1	JLC22E	3/22/2018	9:22:00 21:22	MD
CCB	1	JLC22E	3/22/2018	9:27:00 21:27	MD
SL2329-017	5	JLC22E	3/22/2018	9:31:00 21:31	MD
SL2329-018	5	JLC22E	3/22/2018	9:35:00 21:35	MD
RINSE	1	JLC22E	3/22/2018	9:39:00 21:39	MD
PBWLC19IMW2	5	JLC22E	3/22/2018	9:43:00 21:43	MD
LCSWLC19IMW2	5	JLC22E	3/22/2018	9:48:00 21:48	MD
SL2138-011	5	JLC22E	3/22/2018	9:52:00 21:52	MD
SL2138-012	5	JLC22E	3/22/2018	9:56:00 21:56	MD
SL2133-020	5	JLC22E	3/22/2018	10:00:0 22:00	MD
RINSE	1	JLC22E	3/22/2018	10:04:0 22:04	MD
RINSE	1	JLC22E	3/22/2018	10:08:0 22:08	MD
CCV	1	JLC22E	3/22/2018	10:13:0 22:13	MD
CCB	1	JLC22E	3/22/2018	10:17:0 22:17	MD
SL2138-001	5	JLC22E	3/22/2018	10:21:0 22:21	MD
SL2138-002	5	JLC22E	3/22/2018	10:25:0 22:25	MD
SL2138-003	5	JLC22E	3/22/2018	10:29:0 22:29	MD
RINSE	1	JLC22E	3/22/2018	10:34:0 22:34	MD
RINSE	1	JLC22E	3/22/2018	10:38:0 22:38	MD
SL2138-004	5	JLC22E	3/22/2018	10:42:0 22:42	MD
SL2138-005	5	JLC22E	3/22/2018	10:46:0 22:46	MD
SL2138-006	5	JLC22E	3/22/2018	10:50:0 22:50	MD
RINSE	1	JLC22E	3/22/2018	10:55:0 22:55	MD
RINSE	1	JLC22E	3/22/2018	10:59:0 22:59	MD
CCV	1	JLC22E	3/22/2018	11:03:0 23:03	MD
CCB	1	JLC22E	3/22/2018	11:07:0 23:07	MD
SL2138-007	5	JLC22E	3/22/2018	11:11:0 23:11	MD
SL2138-008	5	JLC22E	3/22/2018	11:16:0 23:16	MD

MD 3/23/18

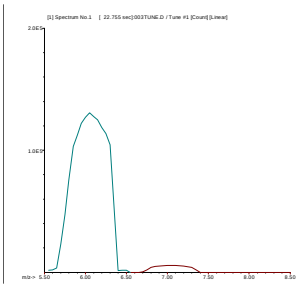
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SL2138-009	5	JLC22E	3/22/2018	11:20:0 23:20	MD
SL2138-010	5	JLC22E	3/22/2018	11:24:0 23:24	MD
RINSE	1	JLC22E	3/22/2018	11:28:0 23:28	MD
RINSE	1	JLC22E	3/22/2018	11:33:0 23:33	MD
RINSE	1	JLC22E	3/22/2018	11:37:0 23:37	MD
CCV	1	JLC22E	3/22/2018	11:41:0 23:41	MD
CCB	1	JLC22E	3/22/2018	11:45:0 23:45	MD
PQL	1	JLC22E	3/22/2018	11:49:0 23:49	MD
CCV	1	JLC22E	3/22/2018	11:53:0 23:53	MD
CCB	1	JLC22E	3/22/2018	11:58:0 23:58	MD

6020 QC Tune Report

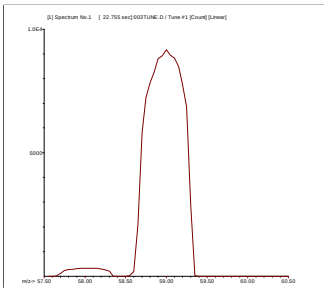
Data File: C:\ICPCHEM\1\DATA\JLC22A.B\003TUNE.D
Date Acquired: Mar 22 2018 01:55 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

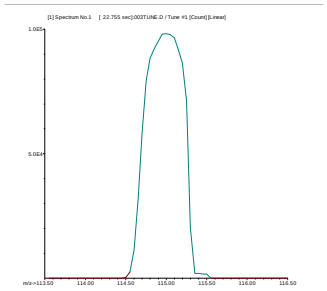
Element	Actual	Required	Flag
7 Li	2.10	5.00	
59 Co	1.96	5.00	
115 In	0.44	5.00	
205 Tl	1.58	5.00	



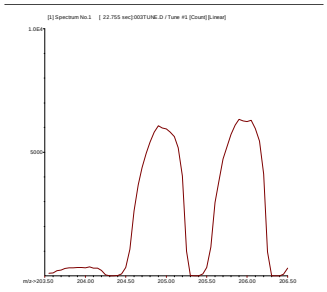
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



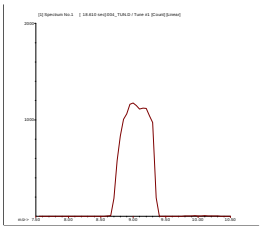
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:

200.8 QC Tune Report

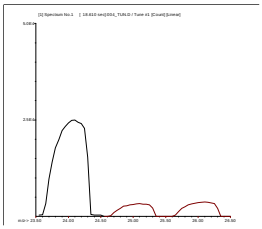
Data File: C:\ICPCHEM\1\DATA\JLC22A.B\004_TUN.D
Date Acquired: Mar 22 2018 01:57 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

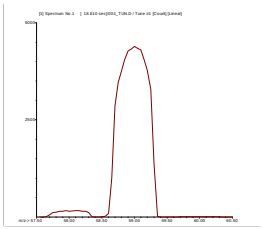
Element	Actual	Required	Flag
9 Be	2.24	5.00	
24 Mg	3.27	5.00	
59 Co	1.58	5.00	
115 In	2.11	5.00	
208 Pb	2.76	5.00	



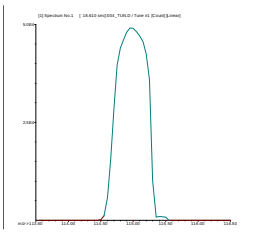
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



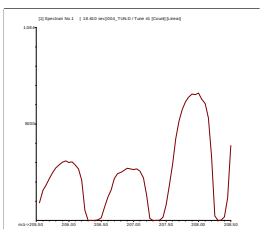
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000322

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.I
Date Acquired: Mar 22 2018 05:09 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 22 2018 05:12 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	3343964.00	A	11290.00	0.34
9	Be	21.48	P	7.14	33.26
11	B	303.35	P	43.34	14.29
23	Na	59544.51	P	2130.00	3.58
25	Mg	297.80	P	39.07	13.12
27	Al	2023.03	P	236.60	11.70
28	Si	3525347.00	A	114000.00	3.23
29	Si	259855.00	P	4423.00	1.70
39	K	1194475.00	A	7113.00	0.60
43	Ca	170.39	P	78.84	46.27
44	Ca	8543.38	P	127.80	1.50
45	Sc	2753983.00	A	10060.00	0.37
51	V	1875.92	P	447.40	23.85
52	Cr	6921.81	P	308.70	4.46
53	Cr	5943.57	P	130.30	2.19
55	Mn	1645.70	P	76.92	4.67
56	Fe	1554777.00	A	18250.00	1.17
57	Fe	15189.31	P	209.20	1.38
59	Co	117.79	P	10.18	8.64
60	Ni	70.23	P	13.46	19.17
63	Cu	231.12	P	21.43	9.27
65	Cu	116.67	P	26.03	22.31
66	Zn	725.60	P	50.48	6.96
68	Zn	2293.59	P	134.50	5.86
72	Ge	501751.50	P	5744.00	1.14
75	As	56.66	P	166.80	294.37
82	Se	-14.92	P	14.35	96.15
88	Sr	107.42	P	39.02	36.33
89	Y	3000635.00	A	1328.00	0.04
98	Mo	22.52	P	10.24	45.47
107	Ag	40.00	P	17.32	43.30
109	Ag	17.78	P	3.85	21.65
111	Cd	945.90	P	44.94	4.75
114	Cd	-9.51	P	6.75	70.98
115	In	2820373.00	A	12450.00	0.44
118	Sn	448.91	P	23.41	5.21
120	Sn	596.70	P	20.82	3.49
121	Sb	36.67	P	11.55	31.50
123	Sb	18.89	P	3.85	20.38
135	Ba	23.33	P	14.53	62.27
137	Ba	16.67	P	3.33	20.00
159	Tb	3226356.00	A	29270.00	0.91
182	W	45.56	P	25.02	54.92
203	Tl	37.78	P	13.47	35.66
205	Tl	88.89	P	5.09	5.73
208	Pb	231.12	P	26.94	11.66
209	Bi	1827413.00	A	14250.00	0.78
232	Th	33.33	P	14.53	43.59
238	U	13.33	P	8.82	66.14

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\016CALI.D\016CALI.D#
Date Acquired: Mar 22 2018 05:13 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 22 2018 05:12 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	3696983.00	A	37910.00	1.03
9 Be	131053.20	P	727.50	0.56
11 B	76085.74	P	1756.00	2.31
23 Na	85933432.00	A	707800.00	0.82
25 Mg	7093216.00	A	94740.00	1.34
27 Al	6598884.00	A	51480.00	0.78
28 Si	7248570.00	A	31390.00	0.43
29 Si	459634.00	P	1540.00	0.34
39 K	90612528.00	A	675700.00	0.75
43 Ca	162138.80	P	2919.00	1.80
44 Ca	2591622.00	A	18890.00	0.73
45 Sc	3005153.00	A	33970.00	1.13
51 V	543246.00	P	2144.00	0.39
52 Cr	465949.59	P	1966.00	0.42
53 Cr	60282.88	P	834.50	1.38
55 Mn	576591.13	P	6397.00	1.11
56 Fe	93214080.00	A	538600.00	0.58
57 Fe	2279453.00	A	3440.00	0.15
59 Co	492809.19	P	5277.00	1.07
60 Ni	109546.50	P	862.00	0.79
63 Cu	254444.80	P	2644.00	1.04
65 Cu	118491.40	P	2181.00	1.84
66 Zn	59216.20	P	316.60	0.53
68 Zn	44593.81	P	500.90	1.12
72 Ge	537136.81	P	3841.00	0.72
75 As	57556.13	P	736.10	1.28
82 Se	3880.94	P	64.34	1.66
88 Sr	523427.31	P	3532.00	0.67
89 Y	3314535.00	A	37180.00	1.12
98 Mo	167034.91	P	597.40	0.36
107 Ag	257930.59	P	2711.00	1.05
109 Ag	246008.70	P	1207.00	0.49
111 Cd	50515.75	P	333.60	0.66
114 Cd	108165.00	P	610.70	0.56
115 In	3073080.00	A	10700.00	0.35
118 Sn	148623.41	P	1639.00	1.10
120 Sn	203272.91	P	1549.00	0.76
121 Sb	187095.30	P	1496.00	0.80
123 Sb	140808.09	P	732.30	0.52
135 Ba	42578.64	P	330.60	0.78
137 Ba	72826.83	P	759.40	1.04
159 Tb	3528498.00	A	32790.00	0.93
182 W	155508.41	P	868.80	0.56
203 Tl	138400.91	P	340.90	0.25
205 Tl	333008.00	P	3297.00	0.99
208 Pb	459385.00	P	4556.00	0.99
209 Bi	1959591.00	A	7949.00	0.41
232 Th	527771.19	P	4468.00	0.85
238 U	503773.31	P	3716.00	0.74

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3696982.80	1.03	3343964.50	110.6	79.5 - 120.4	
45 Sc	3005153.00	1.13	2753983.00	109.1	79.5 - 120.4	
72 Ge	537136.81	0.72	501751.53	107.1	79.5 - 120.4	
159 Tb	3528498.30	0.93	3226356.00	109.4	79.5 - 120.4	
209 Bi	1959590.60	0.41	1827412.60	107.2	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000324

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\017_ICV.D\017_ICV.D#
Date Acquired: Mar 22 2018 05:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.45	ppb	0.57	20	97.25	
11 B	20.22	ppb	3.64	20	101.1	
23 Na	3,813.	ppb	2.42	4,000	95.325	
25 Mg	3,890.	ppb	1.54	4,000	97.25	
27 Al	397.8	ppb	0.96	400	99.45	
28 Si	347.1	ppb	9.61	400	86.775	
29 Si	317.1	ppb	3.26	400	79.275	Fail
39 K	3,845.	ppb	0.60	4,000	96.125	
43 Ca	3,874.	ppb	0.61	4,000	96.85	
44 Ca	4,012.	ppb	0.78	4,000	100.3	
51 V	19.51	ppb	0.90	20	97.55	
52 Cr	19.33	ppb	1.19	20	96.65	
53 Cr	18.5	ppb	1.47	20	92.5	
55 Mn	19.49	ppb	0.46	20	97.45	
56 Fe	3,910.	ppb	1.29	4,000	97.75	
57 Fe	4,018.	ppb	1.14	4,000	100.45	
59 Co	19.42	ppb	0.94	20	97.1	
60 Ni	19.62	ppb	0.81	20	98.1	
63 Cu	19.6	ppb	1.51	20	98	
65 Cu	19.63	ppb	0.57	20	98.15	
66 Zn	20.06	ppb	0.62	20	100.3	
68 Zn	19.71	ppb	0.59	20	98.55	
75 As	19.34	ppb	0.93	20	96.7	
82 Se	19.9	ppb	2.51	20	99.5	
88 Sr	19.47	ppb	0.46	20	97.35	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.27	ppb	0.33	40	95.675	
107 Ag	19.82	ppb	0.23	20	99.1	
109 Ag	19.62	ppb	1.18	20	98.1	
111 Cd	19.94	ppb	0.44	20	99.7	
114 Cd	19.99	ppb	1.03	20	99.95	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.28	ppb	1.14	20	96.4	
120 Sn	19.57	ppb	0.86	20	97.85	
121 Sb	19.29	ppb	0.50	20	96.45	
123 Sb	19.38	ppb	1.13	20	96.9	
135 Ba	19.59	ppb	1.36	20	97.95	
137 Ba	19.76	ppb	3.42	20	98.8	
182 W	19.61	ppb	1.41	20	98.05	
203 Tl	20.34	ppb	2.29	20	101.7	
205 Tl	20.08	ppb	2.09	20	100.4	
208 Pb	19.61	ppb	1.16	20	98.05	
232 Th	19.3	ppb	1.97	20	96.5	
238 U	19.4	ppb	1.48	20	97	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3614712.00	1.15	3343964.50	108.1	80 - 120.4	
45 Sc	2973738.80	0.26	2753983.00	108.0	80 - 120.4	
72 Ge	530672.25	1.29	501751.53	105.8	80 - 120.4	
159 Tb	3461652.50	0.41	3226356.00	107.3	80 - 120.4	
209 Bi	1938019.10	0.52	1827412.60	106.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000325

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\018_ICB.D\018_ICB.D#
Date Acquired: Mar 22 2018 05:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.003	ppb	89.61	1.00	
11 B	0.7744	ppb	10.55	1.00	
23 Na	-0.0382	ppb	348.94	1.00	
25 Mg	0.0324	ppb	150.06	1.00	
27 Al	0.0572	ppb	99.27	1.00	
28 Si	40.9	ppb	87.41	1.00	
29 Si	25.82	ppb	116.89	1.00	
39 K	-1.4	ppb	40.46	1.00	
43 Ca	2.372	ppb	126.60	1.00	
44 Ca	2.455	ppb	40.77	1.00	
51 V	-0.003	ppb	740.72	1.00	
52 Cr	-0.0226	ppb	93.90	1.00	
53 Cr	-0.3367	ppb	16.18	1.00	
55 Mn	-0.0034	ppb	521.40	1.00	
56 Fe	2.398	ppb	47.21	1.00	
57 Fe	2.342	ppb	75.32	1.00	
59 Co	0.0003	ppb	845.26	1.00	
60 Ni	0.0034	ppb	181.80	1.00	
63 Cu	-0.0074	ppb	74.82	1.00	
65 Cu	-0.0113	ppb	26.28	1.00	
66 Zn	0.0061	ppb	661.03	1.00	
68 Zn	0.1276	ppb	81.98	1.00	
75 As	-0.0052	ppb	1249.50	1.00	
82 Se	0.172	ppb	122.27	1.00	
88 Sr	-0.001	ppb	546.58	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0195	ppb	37.72	1.00	
107 Ag	-0.0027	ppb	68.31	1.00	
109 Ag	-0.0002	ppb	1061.80	1.00	
111 Cd	-0.0488	ppb	74.76	1.00	
114 Cd	0.0017	ppb	267.06	1.00	
115 In	--------	---	--------	---	
118 Sn	-0.0013	ppb	1680.60	1.00	
120 Sn	0.0046	ppb	306.80	1.00	
121 Sb	-0.0032	ppb	124.11	1.00	
123 Sb	0.0023	ppb	146.87	1.00	
135 Ba	-0.0068	ppb	190.53	1.00	
137 Ba	0.0078	ppb	59.02	1.00	
182 W	0.023	ppb	26.39	1.00	
203 Tl	0.0118	ppb	16.77	1.00	
205 Tl	-0.0001	ppb	1337.90	1.00	
208 Pb	-0.0012	ppb	122.83	1.00	
232 Th	0.0071	ppb	16.89	1.00	
238 U	0.0035	ppb	48.65	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3299046.00	0.66	3343964.50	98.7	79.5 - 120	
45 Sc	2725303.30	0.54	2753983.00	99.0	79.5 - 120	
72 Ge	497936.06	1.10	501751.53	99.2	79.5 - 120	
159 Tb	3192071.50	1.20	3226356.00	98.9	79.5 - 120	
209 Bi	1811892.30	0.03	1827412.60	99.2	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000326

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\019_PQL.D\019_PQL.D#
Date Acquired: Mar 22 2018 05:25 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1925	ppb	4.56	0.20	96.25	
11 B	4.644	ppb	1.52	4.00	116.1	
23 Na	198.3	ppb	0.49	200.00	99.15	
25 Mg	19.83	ppb	2.33	20.00	99.15	
27 Al	20.04	ppb	2.99	20.00	100.2	
28 Si	130.	ppb	13.73	100.00	130	
29 Si	123.2	ppb	23.26	100.00	123.2	Fail-DoD
39 K	192.6	ppb	1.33	200.00	96.3	
43 Ca	19.74	ppb	57.19	20.00	98.7	
44 Ca	21.81	ppb	7.74	20.00	109.05	
51 V	0.9771	ppb	8.35	1.00	97.71	
52 Cr	0.9448	ppb	1.72	1.00	94.48	
53 Cr	0.5785	ppb	30.22	---	#VALUE!	
55 Mn	0.3826	ppb	1.93	0.40	95.65	
56 Fe	16.98	ppb	23.22	20.00	84.9	
57 Fe	22.97	ppb	11.15	20.00	114.85	
59 Co	0.21	ppb	5.04	0.20	105	
60 Ni	0.4293	ppb	1.43	0.40	107.325	
63 Cu	0.6098	ppb	4.45	0.60	101.633	
65 Cu	0.6093	ppb	11.11	0.60	101.55	
66 Zn	2.087	ppb	5.28	2.00	104.35	
68 Zn	2.01	ppb	5.98	2.00	100.5	
75 As	1.146	ppb	12.95	1.00	114.6	
82 Se	1.196	ppb	32.78	1.00	119.6	
88 Sr	0.9708	ppb	1.52	1.00	97.08	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9791	ppb	2.46	1.00	97.91	
107 Ag	0.2024	ppb	1.99	0.20	101.2	
109 Ag	0.1968	ppb	6.49	0.20	98.4	
111 Cd	0.1566	ppb	3.29	0.20	78.3	
114 Cd	0.1968	ppb	8.45	0.20	98.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	0.986	ppb	1.03	1.00	98.6	
120 Sn	1.015	ppb	1.07	1.00	101.5	
121 Sb	0.1871	ppb	6.21	0.20	93.55	
123 Sb	0.1823	ppb	9.76	0.20	91.15	
135 Ba	0.3949	ppb	7.53	0.40	98.725	
137 Ba	0.4394	ppb	5.02	0.40	109.85	
182 W	1.027	ppb	3.00	1.00	102.7	
203 Tl	0.1794	ppb	6.37	0.20	89.7	
205 Tl	0.1898	ppb	0.82	0.20	94.9	
208 Pb	0.187	ppb	4.43	0.20	93.5	
232 Th	0.194	ppb	1.48	0.20	97	
238 U	0.1996	ppb	2.58	0.20	99.8	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3348871.80	2.51	3343964.50	100.1	80 - 120.4	
45 Sc	2777059.80	0.53	2753983.00	100.8	80 - 120.4	
72 Ge	501387.75	1.36	501751.53	99.9	80 - 120.4	
159 Tb	3253222.80	0.00	3226356.00	100.8	80 - 120.4	
209 Bi	1837408.30	0.77	1827412.60	100.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000327

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\020SMPL.D\020SMPL.D#
Date Acquired: Mar 22 2018 05:29 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0005	-0.0005	ppb	510.07	100.	
11 B	0.4147	0.4147	ppb	9.19	1000.	
23 Na	0.1427	0.1427	ppb	299.02	200000.	
25 Mg	-0.0403	-0.0403	ppb	178.95	200000.	
27 Al	-0.0294	-0.0294	ppb	327.58	200000.	
28 Si	58.29	58.29	ppb	53.54	#VALUE!	
29 Si	56.11	56.11	ppb	24.31	10000.	
39 K	1.307	1.307	ppb	16.88	200000.	
43 Ca	2.24	2.24	ppb	90.40	#VALUE!	
44 Ca	2.13	2.13	ppb	93.47	200000.	
51 V	0.0027	0.0027	ppb	959.85	1000.	
52 Cr	-0.0432	-0.0432	ppb	28.16	2000.	
53 Cr	-0.3924	-0.3924	ppb	46.08	#VALUE!	
55 Mn	0.0055	0.0055	ppb	24.58	2000.	
56 Fe	2.997	2.997	ppb	89.09	#VALUE!	
57 Fe	3.277	3.277	ppb	11.95	100000.	
59 Co	-0.0015	-0.0015	ppb	212.77	1000.	
60 Ni	0.0056	0.0056	ppb	89.83	1000.	
63 Cu	-0.006	-0.006	ppb	72.71	#VALUE!	
65 Cu	-0.016	-0.016	ppb	34.26	2000.	
66 Zn	0.0275	0.0275	ppb	116.06	2000.	
68 Zn	0.0373	0.0373	ppb	452.06	#VALUE!	
75 As	0.0019	0.0019	ppb	3659.70	1000.	
82 Se	0.0284	0.0284	ppb	686.16	1000.	
88 Sr	-0.0025	-0.0025	ppb	196.06	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0079	0.0079	ppb	62.69	1000.	
107 Ag	-0.0034	-0.0034	ppb	41.91	100.	
109 Ag	-0.0002	-0.0002	ppb	868.95	#VALUE!	
111 Cd	-0.0511	-0.0511	ppb	44.04	#VALUE!	
114 Cd	0.0053	0.0053	ppb	147.27	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	-0.0167	-0.0167	ppb	103.77	1000.	
120 Sn	0.0133	0.0133	ppb	104.97	#VALUE!	
121 Sb	-0.0024	-0.0024	ppb	135.33	#VALUE!	
123 Sb	0.0055	0.0055	ppb	93.53	1000.	
135 Ba	-0.0008	-0.0008	ppb	1684.20	2000.	
137 Ba	0.0122	0.0122	ppb	53.66	#VALUE!	
182 W	0.0102	0.0102	ppb	30.99	1000.	
203 Tl	0.0005	0.0005	ppb	1078.60	1000.	
205 Tl	-0.0014	-0.0014	ppb	101.17	#VALUE!	
208 Pb	-0.0018	-0.0018	ppb	145.62	2000.	
232 Th	0.0014	0.0014	ppb	42.12	1000.	
238 U	0.001	0.001	ppb	85.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3232751.50	1.86	3343964.50	96.7	69.5 - 120	
45 Sc	2703221.80	0.06	2753983.00	98.2	69.5 - 120	
72 Ge	491900.63	0.26	501751.53	98.0	69.5 - 120	
159 Tb	3164505.30	0.68	3226356.00	98.1	69.5 - 120	
209 Bi	1818023.10	0.44	1827412.60	99.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000328

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\021ICSA.D\021ICSA.D#
Date Acquired: Mar 22 2018 05:33 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0014	ppb	31.34		
11 B	0.5758	ppb	5.83		
23 Na	95,480.	ppb	0.19		
25 Mg	94,160.	ppb	0.83		
27 Al	95,920.	ppb	0.39		
28 Si	-47.31	ppb	136.21		
29 Si	-127.7	ppb	17.15		
39 K	97,790.	ppb	1.45		
43 Ca	99,940.	ppb	0.29		
44 Ca	97,010.	ppb	1.02		
51 V	0.1873	ppb	10.76		
52 Cr	0.848	ppb	4.76		
53 Cr	-0.2135	ppb	39.46		
55 Mn	0.3289	ppb	4.84		
56 Fe	93,560.	ppb	0.81		
57 Fe	90,580.	ppb	1.47		
59 Co	0.0998	ppb	11.69		
60 Ni	-0.0689	ppb	37.78		
63 Cu	2.995	ppb	2.83		
65 Cu	0.9936	ppb	6.81		
66 Zn	2.384	ppb	3.66		
68 Zn	0.4524	ppb	17.85		
75 As	0.3338	ppb	28.04		
82 Se	0.3445	ppb	64.33		
88 Sr	0.9124	ppb	1.51		
89 Y	--------	---	--------		
98 Mo	1,841.	ppb	1.00		
107 Ag	0.0189	ppb	5.98		
109 Ag	0.0264	ppb	10.61		
111 Cd	0.0253	ppb	217.74		
114 Cd	0.0946	ppb	21.87		
115 In	--------	---	--------		
118 Sn	0.0519	ppb	38.11		
120 Sn	0.1001	ppb	48.68		
121 Sb	0.0545	ppb	15.27		
123 Sb	0.0636	ppb	5.21		
135 Ba	0.072	ppb	19.97		
137 Ba	0.0808	ppb	27.80		
182 W	0.2478	ppb	7.16		
203 Tl	-0.0006	ppb	1438.90		
205 Tl	-0.0009	ppb	440.24		
208 Pb	0.094	ppb	9.74		
232 Th	0.011	ppb	47.25		
238 U	0.0019	ppb	36.18		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3472781.80	1.93	3343964.50	103.9	69.5 - 120.4	
45 Sc	3000725.00	0.67	2753983.00	109.0	69.5 - 120.4	
72 Ge	548765.06	0.66	501751.53	109.4	69.5 - 120.4	
159 Tb	3436331.50	0.85	3226356.00	106.5	69.5 - 120.4	
209 Bi	1786188.50	1.23	1827412.60	97.7	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000329

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\022ICSB.D\022ICSB.D#
Date Acquired: Mar 22 2018 05:37 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	20.91	ppb	0.91	20.00	79.5 - 120	
11 B	20.49	ppb	1.13	20.00	79.5 - 120	
23 Na	94,740.	ppb	1.96	#########	79.5 - 120	
25 Mg	93,700.	ppb	1.52	#########	79.5 - 120	
27 Al	95,880.	ppb	0.70	#########	79.5 - 120	
28 Si	472.2	ppb	4.19	---	##### - #####	
29 Si	385.5	ppb	6.80	---	##### - #####	
39 K	97,430.	ppb	0.33	#########	79.5 - 120	
43 Ca	99,930.	ppb	0.52	#########	79.5 - 120	
44 Ca	97,010.	ppb	0.51	#########	79.5 - 120	
51 V	20.28	ppb	0.45	20.00	79.5 - 120	
52 Cr	20.45	ppb	0.56	20.00	79.5 - 120	
53 Cr	20.4	ppb	1.73	---	##### - #####	
55 Mn	19.91	ppb	0.28	20.00	79.5 - 120	
56 Fe	94,480.	ppb	0.65	#########	79.5 - 120	
57 Fe	91,780.	ppb	0.92	#########	79.5 - 120	
59 Co	19.4	ppb	0.54	20.00	79.5 - 120	
60 Ni	18.72	ppb	1.81	20.00	79.5 - 120	
63 Cu	21.62	ppb	0.43	20.00	79.5 - 120	
65 Cu	19.57	ppb	1.08	20.00	79.5 - 120	
66 Zn	20.67	ppb	0.44	20.00	79.5 - 120	
68 Zn	18.44	ppb	1.63	20.00	79.5 - 120	
75 As	20.07	ppb	2.20	20.00	79.5 - 120	
82 Se	19.53	ppb	1.33	20.00	79.5 - 120	
88 Sr	20.88	ppb	0.96	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,880.	ppb	1.05	2000.00	79.5 - 120	
107 Ag	18.51	ppb	0.27	20.00	79.5 - 120	
109 Ag	18.39	ppb	0.43	20.00	79.5 - 120	
111 Cd	18.48	ppb	0.79	20.00	79.5 - 120	
114 Cd	18.83	ppb	0.70	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	19.95	ppb	0.80	20.00	79.5 - 120	
120 Sn	19.89	ppb	1.05	20.00	79.5 - 120	
121 Sb	19.92	ppb	1.21	20.00	79.5 - 120	
123 Sb	20.	ppb	0.64	20.00	79.5 - 120	
135 Ba	20.27	ppb	2.21	20.00	79.5 - 120	
137 Ba	20.59	ppb	1.35	20.00	79.5 - 120	
182 W	20.52	ppb	0.37	20.00	79.5 - 120	
203 Tl	21.53	ppb	0.70	20.00	79.5 - 120	
205 Tl	21.32	ppb	0.83	20.00	79.5 - 120	
208 Pb	21.3	ppb	0.30	20.00	79.5 - 120	
232 Th	22.39	ppb	0.74	20.00	79.5 - 120	
238 U	21.97	ppb	0.86	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3428765.30	2.47	3343964.50	102.5	69.5 - 120	
45 Sc	3076682.80	1.40	2753983.00	111.7	69.5 - 120	
72 Ge	556081.56	0.72	501751.53	110.8	69.5 - 120	
159 Tb	3546494.50	0.10	3226356.00	109.9	69.5 - 120	
209 Bi	1805196.90	0.75	1827412.60	98.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000330

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\023SMPL.D\023SMPL.D#
Date Acquired: Mar 22 2018 05:41 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0004	0.0004	ppb	359.05	100.	
11 B	0.3956	0.3956	ppb	17.85	1000.	
23 Na	3.691	3.691	ppb	24.76	200000.	
25 Mg	1.787	1.787	ppb	10.77	200000.	
27 Al	1.99	1.99	ppb	15.67	200000.	
28 Si	-70.36	-70.36	ppb	23.11	#VALUE!	
29 Si	-159.4	-159.4	ppb	15.07	10000.	LOW
39 K	-10.75	-10.75	ppb	2.81	200000.	
43 Ca	8.209	8.209	ppb	73.65	#VALUE!	
44 Ca	4.838	4.838	ppb	26.44	200000.	
51 V	0.0095	0.0095	ppb	270.48	1000.	
52 Cr	-0.0621	-0.0621	ppb	14.36	2000.	
53 Cr	-0.1476	-0.1476	ppb	51.77	#VALUE!	
55 Mn	-0.0217	-0.0217	ppb	46.49	2000.	
56 Fe	-4.918	-4.918	ppb	38.98	#VALUE!	
57 Fe	-4.134	-4.134	ppb	66.30	100000.	
59 Co	0.0016	0.0016	ppb	118.64	1000.	
60 Ni	0.0023	0.0023	ppb	343.85	1000.	
63 Cu	0.0466	0.0466	ppb	30.58	#VALUE!	
65 Cu	0.0492	0.0492	ppb	16.08	2000.	
66 Zn	0.0971	0.0971	ppb	29.84	2000.	
68 Zn	-0.1566	-0.1566	ppb	33.54	#VALUE!	
75 As	-0.0861	-0.0861	ppb	124.07	1000.	
82 Se	0.0541	0.0541	ppb	390.76	1000.	
88 Sr	0.0001	0.0001	ppb	4970.20	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3361	0.3361	ppb	15.55	1000.	
107 Ag	-0.0018	-0.0018	ppb	19.12	100.	
109 Ag	-0.0006	-0.0006	ppb	433.29	#VALUE!	
111 Cd	-0.1606	-0.1606	ppb	15.83	#VALUE!	
114 Cd	0.0008	0.0008	ppb	649.96	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	-0.0112	-0.0112	ppb	84.88	1000.	
120 Sn	0.0081	0.0081	ppb	149.94	#VALUE!	
121 Sb	0.0032	0.0032	ppb	148.20	#VALUE!	
123 Sb	0.0065	0.0065	ppb	32.17	1000.	
135 Ba	0.013	0.013	ppb	184.98	2000.	
137 Ba	0.0142	0.0142	ppb	33.22	#VALUE!	
182 W	-0.0009	-0.0009	ppb	560.16	1000.	
203 Tl	0.0031	0.0031	ppb	109.83	1000.	
205 Tl	-0.0011	-0.0011	ppb	326.02	#VALUE!	
208 Pb	0.0004	0.0004	ppb	63.67	2000.	
232 Th	0.0036	0.0036	ppb	36.24	1000.	
238 U	0.0018	0.0018	ppb	60.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3249148.30	1.37	3343964.50	97.2	69.5 - 120	
45 Sc	2785728.00	1.32	2753983.00	101.2	69.5 - 120	
72 Ge	513943.38	0.79	501751.53	102.4	69.5 - 120	
159 Tb	3323760.00	0.85	3226356.00	103.0	69.5 - 120	
209 Bi	1858471.30	0.45	1827412.60	101.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000331

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\024SMPL.D\024SMPL.D#
Date Acquired: Mar 22 2018 05:45 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	98.86	98.86	ppb	4.26	100.	
11 B	547.6	547.6	ppb	1.47	1000.	
23 Na	1.256	1.256	ppb	14.17	200000.	
25 Mg	1.157	1.157	ppb	4.49	200000.	
27 Al	1.467	1.467	ppb	3.86	200000.	
28 Si	-110.8	-110.8	ppb	24.33	#VALUE!	
29 Si	-216.4	-216.4	ppb	7.78	10000.	LOW
39 K	-16.31	-16.31	ppb	9.71	200000.	
43 Ca	1,519.	1,519.	ppb	4.57	#VALUE!	
44 Ca	280.4	280.4	ppb	5.66	200000.	
51 V	982.6	982.6	ppb	1.22	1000.	
52 Cr	1,943.	1,943.	ppb	1.10	2000.	
53 Cr	1,980.	1,980.	ppb	0.52	#VALUE!	
55 Mn	1,939.	1,939.	ppb	0.65	2000.	
56 Fe	-9.871	-9.871	ppb	1.99	#VALUE!	
57 Fe	-9.558	-9.558	ppb	31.25	100000.	
59 Co	968.9	968.9	ppb	1.39	1000.	
60 Ni	982.5	982.5	ppb	1.79	1000.	
63 Cu	1,933.	1,933.	ppb	0.92	#VALUE!	
65 Cu	1,941.	1,941.	ppb	0.41	2000.	
66 Zn	1,967.	1,967.	ppb	0.31	2000.	
68 Zn	1,983.	1,983.	ppb	0.64	#VALUE!	
75 As	995.	995.	ppb	1.02	1000.	
82 Se	1,014.	1,014.	ppb	1.06	1000.	>LDR
88 Sr	1,948.	1,948.	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	978.	978.	ppb	0.15	1000.	
107 Ag	102.9	102.9	ppb	0.90	100.	>LDR
109 Ag	102.8	102.8	ppb	0.68	#VALUE!	
111 Cd	1,024.	1,024.	ppb	1.03	#VALUE!	
114 Cd	1,014.	1,014.	ppb	1.46	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	971.8	971.8	ppb	1.05	1000.	
120 Sn	965.1	965.1	ppb	0.64	#VALUE!	
121 Sb	958.2	958.2	ppb	1.09	#VALUE!	
123 Sb	973.5	973.5	ppb	1.01	1000.	
135 Ba	2,012.	2,012.	ppb	0.75	2000.	>LDR
137 Ba	2,002.	2,002.	ppb	0.97	#VALUE!	
182 W	956.2	956.2	ppb	1.58	1000.	
203 Tl	963.3	963.3	ppb	0.88	1000.	
205 Tl	939.8	939.8	ppb	1.00	#VALUE!	
208 Pb	1,907.	1,907.	ppb	1.05	2000.	
232 Th	926.2	926.2	ppb	1.94	1000.	
238 U	917.2	917.2	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3402513.00	2.91	3343964.50	101.8	69.5 - 120	
45 Sc	2903268.50	0.46	2753983.00	105.4	69.5 - 120	
72 Ge	520641.06	0.26	501751.53	103.8	69.5 - 120	
159 Tb	3472384.80	0.70	3226356.00	107.6	69.5 - 120	
209 Bi	1958996.40	0.83	1827412.60	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000332

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 22 2018 05:49 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0084	0.0084	ppb	48.64	100.	
11 B	5.981	5.981	ppb	13.88	1000.	
23 Na	187,800.	187,800.	ppb	0.97	200000.	
25 Mg	184,800.	184,800.	ppb	1.81	200000.	
27 Al	190,800.	190,800.	ppb	1.31	200000.	
28 Si	10,810.	10,810.	ppb	1.84	#VALUE!	
29 Si	11,530.	11,530.	ppb	1.20	10000.	>LDR
39 K	192,300.	192,300.	ppb	0.46	200000.	
43 Ca	191,000.	191,000.	ppb	1.08	#VALUE!	
44 Ca	189,900.	189,900.	ppb	0.18	200000.	
51 V	0.1642	0.1642	ppb	37.35	1000.	
52 Cr	2.951	2.951	ppb	0.97	2000.	
53 Cr	1.029	1.029	ppb	14.04	#VALUE!	
55 Mn	7.886	7.886	ppb	1.31	2000.	
56 Fe	93,660.	93,660.	ppb	0.92	#VALUE!	
57 Fe	90,900.	90,900.	ppb	0.73	100000.	
59 Co	2.688	2.688	ppb	2.21	1000.	
60 Ni	3.486	3.486	ppb	1.87	1000.	
63 Cu	7.932	7.932	ppb	0.45	#VALUE!	
65 Cu	2.772	2.772	ppb	1.50	2000.	
66 Zn	6.083	6.083	ppb	1.46	2000.	
68 Zn	3.939	3.939	ppb	3.71	#VALUE!	
75 As	0.4809	0.4809	ppb	32.52	1000.	
82 Se	0.3711	0.3711	ppb	56.21	1000.	
88 Sr	6.541	6.541	ppb	0.17	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5455	0.5455	ppb	14.61	1000.	
107 Ag	0.33	0.33	ppb	5.12	100.	
109 Ag	0.3372	0.3372	ppb	1.24	#VALUE!	
111 Cd	-0.0998	-0.0998	ppb	15.74	#VALUE!	
114 Cd	0.0171	0.0171	ppb	19.66	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2013	0.2013	ppb	15.65	1000.	
120 Sn	0.2102	0.2102	ppb	3.24	#VALUE!	
121 Sb	0.1343	0.1343	ppb	9.64	#VALUE!	
123 Sb	0.1212	0.1212	ppb	11.91	1000.	
135 Ba	0.2673	0.2673	ppb	15.63	2000.	
137 Ba	0.2881	0.2881	ppb	11.81	#VALUE!	
182 W	0.3998	0.3998	ppb	4.76	1000.	
203 Tl	0.0517	0.0517	ppb	5.55	1000.	
205 Tl	0.0434	0.0434	ppb	15.77	#VALUE!	
208 Pb	0.6545	0.6545	ppb	2.97	2000.	
232 Th	0.2064	0.2064	ppb	24.49	1000.	
238 U	0.1264	0.1264	ppb	11.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3334861.30	2.28	3343964.50	99.7	69.5 - 120	
45 Sc	3021230.50	0.58	2753983.00	109.7	69.5 - 120	
72 Ge	529557.69	0.94	501751.53	105.5	69.5 - 120	
159 Tb	3302341.80	0.97	3226356.00	102.4	69.5 - 120	
209 Bi	1648745.40	0.18	1827412.60	90.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000333

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 22 2018 05:53 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0006	-0.0006	ppb	453.44	100.	
11 B	2.934	2.934	ppb	10.06	1000.	
23 Na	10.22	10.22	ppb	19.95	200000.	
25 Mg	2.841	2.841	ppb	20.87	200000.	
27 Al	2.371	2.371	ppb	19.19	200000.	
28 Si	-3.317	-3.317	ppb	983.42	#VALUE!	
29 Si	-115.3	-115.3	ppb	10.87	10000.	LOW
39 K	-5.693	-5.693	ppb	42.95	200000.	
43 Ca	6.273	6.273	ppb	61.55	#VALUE!	
44 Ca	5.707	5.707	ppb	30.82	200000.	
51 V	0.0034	0.0034	ppb	1868.60	1000.	
52 Cr	0.037	0.037	ppb	78.32	2000.	
53 Cr	1.763	1.763	ppb	6.32	#VALUE!	
55 Mn	-0.0087	-0.0087	ppb	204.49	2000.	
56 Fe	-0.6697	-0.6697	ppb	505.15	#VALUE!	
57 Fe	-2.736	-2.736	ppb	5.18	100000.	
59 Co	0.0026	0.0026	ppb	190.54	1000.	
60 Ni	0.0253	0.0253	ppb	31.30	1000.	
63 Cu	0.0755	0.0755	ppb	21.00	#VALUE!	
65 Cu	0.0493	0.0493	ppb	20.84	2000.	
66 Zn	0.0812	0.0812	ppb	31.02	2000.	
68 Zn	0.1249	0.1249	ppb	112.81	#VALUE!	
75 As	0.0779	0.0779	ppb	52.32	1000.	
82 Se	0.0946	0.0946	ppb	364.12	1000.	
88 Sr	0.0047	0.0047	ppb	27.13	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0786	0.0786	ppb	11.10	1000.	
107 Ag	-0.0021	-0.0021	ppb	36.60	100.	
109 Ag	0.0013	0.0013	ppb	140.33	#VALUE!	
111 Cd	-0.1625	-0.1625	ppb	12.33	#VALUE!	
114 Cd	0.0034	0.0034	ppb	103.46	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0263	0.0263	ppb	37.91	1000.	
120 Sn	0.0408	0.0408	ppb	14.75	#VALUE!	
121 Sb	0.0134	0.0134	ppb	41.59	#VALUE!	
123 Sb	0.0154	0.0154	ppb	13.92	1000.	
135 Ba	0.0147	0.0147	ppb	19.63	2000.	
137 Ba	0.0184	0.0184	ppb	20.60	#VALUE!	
182 W	0.0914	0.0914	ppb	20.48	1000.	
203 Tl	0.01	0.01	ppb	51.19	1000.	
205 Tl	0.0014	0.0014	ppb	127.46	#VALUE!	
208 Pb	0.0104	0.0104	ppb	6.86	2000.	
232 Th	0.0088	0.0088	ppb	15.20	1000.	
238 U	0.0099	0.0099	ppb	16.48	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3322981.50	0.19	3343964.50	99.4	69.5 - 120	
45 Sc	2827260.00	0.79	2753983.00	102.7	69.5 - 120	
72 Ge	520873.06	0.14	501751.53	103.8	69.5 - 120	
159 Tb	3307777.30	1.14	3226356.00	102.5	69.5 - 120	
209 Bi	1850604.80	0.49	1827412.60	101.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000334

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 22 2018 05:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0009	0.0009	ppb	108.37	100.	
11 B	2.095	2.095	ppb	7.26	1000.	
23 Na	4.216	4.216	ppb	17.21	200000.	
25 Mg	1.307	1.307	ppb	13.33	200000.	
27 Al	1.004	1.004	ppb	4.52	200000.	
28 Si	11.37	11.37	ppb	122.78	#VALUE!	
29 Si	-135.5	-135.5	ppb	0.48	10000.	LOW
39 K	-10.02	-10.02	ppb	19.55	200000.	
43 Ca	1.908	1.908	ppb	186.06	#VALUE!	
44 Ca	4.311	4.311	ppb	19.40	200000.	
51 V	0.0502	0.0502	ppb	91.39	1000.	
52 Cr	0.0133	0.0133	ppb	171.72	2000.	
53 Cr	1.738	1.738	ppb	11.59	#VALUE!	
55 Mn	-0.0127	-0.0127	ppb	42.78	2000.	
56 Fe	2.079	2.079	ppb	74.89	#VALUE!	
57 Fe	-1.385	-1.385	ppb	111.55	100000.	
59 Co	0.004	0.004	ppb	46.73	1000.	
60 Ni	0.0107	0.0107	ppb	50.49	1000.	
63 Cu	0.0561	0.0561	ppb	16.41	#VALUE!	
65 Cu	0.0538	0.0538	ppb	11.05	2000.	
66 Zn	0.1038	0.1038	ppb	24.15	2000.	
68 Zn	-0.0644	-0.0644	ppb	178.84	#VALUE!	
75 As	0.0609	0.0609	ppb	126.43	1000.	
82 Se	0.2686	0.2686	ppb	141.29	1000.	
88 Sr	0.0029	0.0029	ppb	177.80	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.052	0.052	ppb	15.42	1000.	
107 Ag	-0.001	-0.001	ppb	179.28	100.	
109 Ag	-0.0001	-0.0001	ppb	789.82	#VALUE!	
111 Cd	-0.1352	-0.1352	ppb	15.41	#VALUE!	
114 Cd	-0.0001	-0.0001	ppb	5292.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0224	0.0224	ppb	8.48	1000.	
120 Sn	0.0136	0.0136	ppb	165.22	#VALUE!	
121 Sb	0.0061	0.0061	ppb	51.68	#VALUE!	
123 Sb	0.0095	0.0095	ppb	6.53	1000.	
135 Ba	0.0007	0.0007	ppb	2803.80	2000.	
137 Ba	0.0289	0.0289	ppb	13.90	#VALUE!	
182 W	0.0463	0.0463	ppb	35.57	1000.	
203 Tl	0.0064	0.0064	ppb	27.07	1000.	
205 Tl	0.0021	0.0021	ppb	87.31	#VALUE!	
208 Pb	0.0114	0.0114	ppb	29.81	2000.	
232 Th	0.0051	0.0051	ppb	53.50	1000.	
238 U	0.0065	0.0065	ppb	2.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3298044.00	1.84	3343964.50	98.6	69.5 - 120	
45 Sc	2871301.50	1.45	2753983.00	104.3	69.5 - 120	
72 Ge	520191.66	0.06	501751.53	103.7	69.5 - 120	
159 Tb	3313383.80	0.69	3226356.00	102.7	69.5 - 120	
209 Bi	1868252.30	1.54	1827412.60	102.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000335

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\028_CCV.D\028_CCV.D#
Date Acquired: Mar 22 2018 06:01 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.86	ppb	1.45	25	103.44	
11 B	26.07	ppb	2.81	25	104.28	
23 Na	4,836.	ppb	2.09	5,000	96.72	
25 Mg	4,873.	ppb	2.57	5,000	97.46	
27 Al	493.4	ppb	1.42	500	98.68	
28 Si	432.4	ppb	9.94	500	86.48	
29 Si	302.6	ppb	4.92	500	60.52	Fail
39 K	4,939.	ppb	1.28	5,000	98.78	
43 Ca	5,032.	ppb	1.67	5,000	100.64	
44 Ca	5,013.	ppb	1.05	5,000	100.26	
51 V	24.81	ppb	0.44	25	99.24	
52 Cr	24.86	ppb	0.35	25	99.44	
53 Cr	25.45	ppb	1.21	25	101.8	
55 Mn	24.98	ppb	0.35	25	99.92	
56 Fe	4,951.	ppb	0.88	5,000	99.02	
57 Fe	5,019.	ppb	0.78	5,000	100.38	
59 Co	25.02	ppb	0.82	25	100.08	
60 Ni	24.92	ppb	1.07	25	99.68	
63 Cu	25.12	ppb	0.79	25	100.48	
65 Cu	25.2	ppb	1.05	25	100.8	
66 Zn	25.09	ppb	1.95	25	100.36	
68 Zn	24.2	ppb	0.80	25	96.8	
75 As	24.82	ppb	0.01	25	99.28	
82 Se	24.82	ppb	1.24	25	99.28	
88 Sr	25.01	ppb	1.85	25	100.04	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.6	ppb	1.07	25	98.4	
107 Ag	24.98	ppb	1.13	25	99.92	
109 Ag	25.18	ppb	0.67	25	100.72	
111 Cd	24.57	ppb	1.00	25	98.28	
114 Cd	25.02	ppb	0.49	25	100.08	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	24.89	ppb	0.22	25	99.56	
120 Sn	25.26	ppb	0.50	25	101.04	
121 Sb	25.02	ppb	0.33	25	100.08	
123 Sb	25.02	ppb	1.44	25	100.08	
135 Ba	25.14	ppb	0.95	25	100.56	
137 Ba	25.08	ppb	0.55	25	100.32	
182 W	24.62	ppb	1.15	25	98.48	
203 Tl	25.05	ppb	0.86	25	100.2	
205 Tl	24.86	ppb	2.27	25	99.44	
208 Pb	24.74	ppb	1.71	25	98.96	
232 Th	24.5	ppb	2.38	25	98	
238 U	24.26	ppb	1.56	25	97.04	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3606707.50	2.27	3343964.50	107.9	80 - 120.4	
45 Sc	3160003.50	0.79	2753983.00	114.7	80 - 120.4	
72 Ge	563842.88	1.66	501751.53	112.4	80 - 120.4	
159 Tb	3665964.50	0.65	3226356.00	113.6	80 - 120.4	
209 Bi	2039651.00	1.21	1827412.60	111.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000336

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\029_CCB.D\029_CCB.D#
Date Acquired: Mar 22 2018 06:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	439.80	1.00	
11 B	1.366	ppb	8.97	1.00	
23 Na	1.79	ppb	11.18	1.00	
25 Mg	0.5912	ppb	17.98	1.00	
27 Al	0.3196	ppb	11.40	1.00	
28 Si	-4.088	ppb	439.33	1.00	
29 Si	-117.7	ppb	3.97	1.00	
39 K	-10.59	ppb	7.03	1.00	
43 Ca	2.666	ppb	135.18	1.00	
44 Ca	3.051	ppb	34.22	1.00	
51 V	0.004	ppb	1253.00	1.00	
52 Cr	-0.018	ppb	70.99	1.00	
53 Cr	0.2072	ppb	40.72	1.00	
55 Mn	-0.0151	ppb	16.83	1.00	
56 Fe	-3.566	ppb	67.81	1.00	
57 Fe	-2.639	ppb	136.72	1.00	
59 Co	-0.001	ppb	75.48	1.00	
60 Ni	0.0094	ppb	49.80	1.00	
63 Cu	0.0082	ppb	33.97	1.00	
65 Cu	-0.0033	ppb	270.42	1.00	
66 Zn	0.0075	ppb	526.01	1.00	
68 Zn	-0.0705	ppb	170.33	1.00	
75 As	0.0946	ppb	131.92	1.00	
82 Se	0.2637	ppb	56.35	1.00	
88 Sr	0.0017	ppb	192.70	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0351	ppb	11.66	1.00	
107 Ag	-0.0021	ppb	34.68	1.00	
109 Ag	0.0001	ppb	587.88	1.00	
111 Cd	-0.1482	ppb	18.06	1.00	
114 Cd	0.0013	ppb	281.83	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0149	ppb	47.20	1.00	
120 Sn	0.0346	ppb	25.89	1.00	
121 Sb	0.0006	ppb	428.18	1.00	
123 Sb	0.0089	ppb	48.44	1.00	
135 Ba	-0.0037	ppb	165.64	1.00	
137 Ba	0.01	ppb	84.41	1.00	
182 W	0.0307	ppb	25.14	1.00	
203 Tl	0.0028	ppb	116.72	1.00	
205 Tl	0.005	ppb	65.23	1.00	
208 Pb	0.0056	ppb	59.18	1.00	
232 Th	0.0154	ppb	15.68	1.00	
238 U	0.0046	ppb	22.84	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3394242.30	0.96	3343964.50	101.5	79.5 - 120	
45 Sc	2863347.30	0.77	2753983.00	104.0	79.5 - 120	
72 Ge	524065.75	0.52	501751.53	104.4	79.5 - 120	
159 Tb	3342817.00	0.57	3226356.00	103.6	79.5 - 120	
209 Bi	1891146.00	0.96	1827412.60	103.5	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000337

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\030SMPL.D\030SMPL.D#
Date Acquired: Mar 22 2018 06:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-001
Misc Info: LC19IMS1
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.85	2.77	ppb	0.97	100.	
11 B	88.	17.6	ppb	4.66	1000.	
23 Na	34,660.	6,932.	ppb	1.72	200000.	
25 Mg	100,950.	20,190.	ppb	1.97	200000.	
27 Al	238,100.	47,620.	ppb	0.75	200000.	
28 Si	1,163.	232.6	ppb	19.33	#VALUE!	
29 Si	388.1	77.62	ppb	30.16	10000.	
39 K	62,400.	12,480.	ppb	1.45	200000.	
43 Ca	219,650.	43,930.	ppb	2.02	#VALUE!	
44 Ca	209,800.	41,960.	ppb	1.16	200000.	
51 V	415.15	83.03	ppb	0.31	1000.	
52 Cr	213.15	42.63	ppb	0.19	2000.	
53 Cr	246.3	49.26	ppb	0.43	#VALUE!	
55 Mn	1,734.5	346.9	ppb	0.61	2000.	
56 Fe	220,700.	44,140.	ppb	0.83	#VALUE!	
57 Fe	213,150.	42,630.	ppb	0.66	100000.	
59 Co	90.9	18.18	ppb	0.17	1000.	
60 Ni	239.55	47.91	ppb	0.76	1000.	
63 Cu	202.7	40.54	ppb	0.58	#VALUE!	
65 Cu	202.85	40.57	ppb	0.80	2000.	
66 Zn	704.	140.8	ppb	0.25	2000.	
68 Zn	797.5	159.5	ppb	0.57	#VALUE!	
75 As	110.95	22.19	ppb	0.99	1000.	
82 Se	5.155	1.031	ppb	7.76	1000.	
88 Sr	1,355.5	271.1	ppb	0.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.793	0.9586	ppb	3.37	1000.	
107 Ag	1.407	0.2814	ppb	2.86	100.	
109 Ag	1.2455	0.2491	ppb	4.11	#VALUE!	
111 Cd	2.583	0.5166	ppb	13.52	#VALUE!	
114 Cd	-0.1078	-0.0216	ppb	90.91	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.7	11.34	ppb	1.03	1000.	
120 Sn	56.55	11.31	ppb	1.22	#VALUE!	
121 Sb	2.0225	0.4045	ppb	2.79	#VALUE!	
123 Sb	2.133	0.4266	ppb	6.10	1000.	
135 Ba	3,190.	638.	ppb	1.43	2000.	
137 Ba	3,177.	635.4	ppb	0.91	#VALUE!	
182 W	0.75	0.15	ppb	9.94	1000.	
203 Tl	4.739	0.9478	ppb	4.22	1000.	
205 Tl	4.626	0.9252	ppb	2.02	#VALUE!	
208 Pb	187.	37.4	ppb	0.51	2000.	
232 Th	126.25	25.25	ppb	0.75	1000.	
238 U	21.74	4.348	ppb	1.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3859172.80	0.58	3343964.50	115.4	69.5 - 120	
45 Sc	3368690.00	2.03	2753983.00	122.3	69.5 - 120	IS Fai
72 Ge	597093.13	0.47	501751.53	119.0	69.5 - 120	
159 Tb	3756397.00	1.45	3226356.00	116.4	69.5 - 120	
209 Bi	1977862.90	0.59	1827412.60	108.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000338

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\031SMPL.D\031SMPL.D#
Date Acquired: Mar 22 2018 06:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	14.17	2.834	ppb	0.99	100.	
11 B	110.65	22.13	ppb	3.20	1000.	
23 Na	33,180.	6,636.	ppb	0.40	200000.	
25 Mg	87,950.	17,590.	ppb	1.07	200000.	
27 Al	240,400.	48,080.	ppb	0.32	200000.	
28 Si	2,002.5	400.5	ppb	8.83	#VALUE!	
29 Si	1,305.5	261.1	ppb	2.93	10000.	
39 K	68,200.	13,640.	ppb	0.56	200000.	
43 Ca	172,450.	34,490.	ppb	0.37	#VALUE!	
44 Ca	169,100.	33,820.	ppb	0.22	200000.	
51 V	545.	109.	ppb	2.25	1000.	
52 Cr	231.2	46.24	ppb	0.85	2000.	
53 Cr	272.55	54.51	ppb	0.65	#VALUE!	
55 Mn	1,860.	372.	ppb	0.99	2000.	
56 Fe	254,600.	50,920.	ppb	1.08	#VALUE!	
57 Fe	244,400.	48,880.	ppb	1.92	100000.	
59 Co	110.95	22.19	ppb	1.20	1000.	
60 Ni	284.2	56.84	ppb	0.59	1000.	
63 Cu	219.15	43.83	ppb	0.47	#VALUE!	
65 Cu	220.85	44.17	ppb	1.09	2000.	
66 Zn	746.	149.2	ppb	0.89	2000.	
68 Zn	793.	158.6	ppb	0.54	#VALUE!	
75 As	216.05	43.21	ppb	0.37	1000.	
82 Se	6.26	1.252	ppb	30.87	1000.	
88 Sr	953.5	190.7	ppb	1.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.73	1.946	ppb	0.75	1000.	
107 Ag	1.7915	0.3583	ppb	4.70	100.	
109 Ag	1.467	0.2934	ppb	1.27	#VALUE!	
111 Cd	2.6745	0.5349	ppb	11.70	#VALUE!	
114 Cd	-0.3541	-0.0708	ppb	48.34	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.65	10.73	ppb	0.91	1000.	
120 Sn	54.05	10.81	ppb	1.02	#VALUE!	
121 Sb	2.954	0.5908	ppb	1.09	#VALUE!	
123 Sb	2.9295	0.5859	ppb	1.85	1000.	
135 Ba	2,134.5	426.9	ppb	0.61	2000.	
137 Ba	2,163.	432.6	ppb	0.85	#VALUE!	
182 W	1.0555	0.2111	ppb	0.63	1000.	
203 Tl	4.4575	0.8915	ppb	5.76	1000.	
205 Tl	4.388	0.8776	ppb	1.10	#VALUE!	
208 Pb	206.5	41.3	ppb	1.24	2000.	
232 Th	124.9	24.98	ppb	1.27	1000.	
238 U	26.77	5.354	ppb	0.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3971664.00	0.41	3343964.50	118.8	69.5 - 120	
45 Sc	3451400.80	0.44	2753983.00	125.3	69.5 - 120	IS Fai
72 Ge	605932.44	0.71	501751.53	120.8	69.5 - 120	IS Fai
159 Tb	3791224.50	0.87	3226356.00	117.5	69.5 - 120	
209 Bi	1983659.80	1.06	1827412.60	108.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000339

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 22 2018 06:18 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.195	2.239	ppb	2.75	100.	
11 B	94.3	18.86	ppb	0.40	1000.	
23 Na	5,685.	1,137.	ppb	0.78	200000.	
25 Mg	81,450.	16,290.	ppb	1.50	200000.	
27 Al	203,300.	40,660.	ppb	0.34	200000.	
28 Si	2,537.	507.4	ppb	12.60	#VALUE!	
29 Si	1,817.5	363.5	ppb	12.54	10000.	
39 K	43,055.	8,611.	ppb	0.76	200000.	
43 Ca	108,450.	21,690.	ppb	2.20	#VALUE!	
44 Ca	104,850.	20,970.	ppb	0.79	200000.	
51 V	412.05	82.41	ppb	1.39	1000.	
52 Cr	232.2	46.44	ppb	0.73	2000.	
53 Cr	272.3	54.46	ppb	0.89	#VALUE!	
55 Mn	4,432.5	886.5	ppb	1.37	2000.	
56 Fe	244,700.	48,940.	ppb	1.27	#VALUE!	
57 Fe	237,050.	47,410.	ppb	1.10	100000.	
59 Co	64.75	12.95	ppb	1.86	1000.	
60 Ni	200.8	40.16	ppb	0.77	1000.	
63 Cu	189.3	37.86	ppb	1.19	#VALUE!	
65 Cu	192.95	38.59	ppb	1.44	2000.	
66 Zn	680.5	136.1	ppb	1.03	2000.	
68 Zn	797.5	159.5	ppb	0.67	#VALUE!	
75 As	78.35	15.67	ppb	1.29	1000.	
82 Se	6.29	1.258	ppb	19.48	1000.	
88 Sr	685.	137.	ppb	0.96	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.111	0.6222	ppb	1.76	1000.	
107 Ag	1.0235	0.2047	ppb	0.78	100.	
109 Ag	0.8305	0.1661	ppb	11.07	#VALUE!	
111 Cd	5.315	1.063	ppb	3.86	#VALUE!	
114 Cd	2.139	0.4278	ppb	4.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.5	10.3	ppb	2.64	1000.	
120 Sn	51.2	10.24	ppb	1.15	#VALUE!	
121 Sb	1.526	0.3052	ppb	5.62	#VALUE!	
123 Sb	1.6875	0.3375	ppb	5.98	1000.	
135 Ba	3,786.	757.2	ppb	1.35	2000.	
137 Ba	3,798.	759.6	ppb	2.15	#VALUE!	
182 W	0.747	0.1494	ppb	7.91	1000.	
203 Tl	3.8945	0.7789	ppb	3.37	1000.	
205 Tl	3.6675	0.7335	ppb	1.96	#VALUE!	
208 Pb	172.05	34.41	ppb	1.53	2000.	
232 Th	111.1	22.22	ppb	0.98	1000.	
238 U	11.905	2.381	ppb	0.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3989060.00	1.31	3343964.50	119.3	69.5 - 120	
45 Sc	3424989.30	0.67	2753983.00	124.4	69.5 - 120	IS Fai
72 Ge	614887.25	0.92	501751.53	122.5	69.5 - 120	IS Fai
159 Tb	3830615.00	1.14	3226356.00	118.7	69.5 - 120	
209 Bi	2017911.90	1.17	1827412.60	110.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000340

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 22 2018 06:22 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-005
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.62	2.724	ppb	0.70	100.	
11 B	113.7	22.74	ppb	1.27	1000.	
23 Na	1,954.5	390.9	ppb	1.01	200000.	
25 Mg	89,150.	17,830.	ppb	0.51	200000.	
27 Al	191,550.	38,310.	ppb	0.80	200000.	
28 Si	2,960.	592.	ppb	8.47	#VALUE!	
29 Si	2,173.	434.6	ppb	4.35	10000.	
39 K	45,800.	9,160.	ppb	1.76	200000.	
43 Ca	386,700.	77,340.	ppb	1.09	#VALUE!	
44 Ca	373,050.	74,610.	ppb	0.92	200000.	
51 V	923.	184.6	ppb	1.36	1000.	
52 Cr	215.2	43.04	ppb	0.14	2000.	
53 Cr	246.45	49.29	ppb	0.93	#VALUE!	
55 Mn	7,310.	1,462.	ppb	1.51	2000.	
56 Fe	446,750.	89,350.	ppb	1.15	#VALUE!	
57 Fe	435,900.	87,180.	ppb	1.22	100000.	
59 Co	97.7	19.54	ppb	0.41	1000.	
60 Ni	175.75	35.15	ppb	0.44	1000.	
63 Cu	306.7	61.34	ppb	0.66	#VALUE!	
65 Cu	308.6	61.72	ppb	0.59	2000.	
66 Zn	546.5	109.3	ppb	0.62	2000.	
68 Zn	695.5	139.1	ppb	0.99	#VALUE!	
75 As	569.5	113.9	ppb	0.58	1000.	
82 Se	7.875	1.575	ppb	1.96	1000.	
88 Sr	1,106.	221.2	ppb	2.53	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	23.045	4.609	ppb	1.94	1000.	
107 Ag	1.0475	0.2095	ppb	7.45	100.	
109 Ag	0.855	0.171	ppb	5.51	#VALUE!	
111 Cd	7.155	1.431	ppb	6.81	#VALUE!	
114 Cd	2.779	0.5558	ppb	6.59	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.8	10.36	ppb	1.73	1000.	
120 Sn	52.05	10.41	ppb	1.19	#VALUE!	
121 Sb	4.1355	0.8271	ppb	2.09	#VALUE!	
123 Sb	4.201	0.8402	ppb	4.44	1000.	
135 Ba	4,508.	901.6	ppb	0.76	2000.	
137 Ba	4,485.	897.	ppb	1.06	#VALUE!	
182 W	0.9445	0.1889	ppb	9.50	1000.	
203 Tl	3.8325	0.7665	ppb	4.80	1000.	
205 Tl	3.943	0.7886	ppb	2.59	#VALUE!	
208 Pb	239.35	47.87	ppb	0.51	2000.	
232 Th	94.95	18.99	ppb	0.90	1000.	
238 U	13.46	2.692	ppb	0.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3725826.50	1.10	3343964.50	111.4	69.5 - 120	
45 Sc	3301018.30	0.47	2753983.00	119.9	69.5 - 120	
72 Ge	603980.63	0.94	501751.53	120.4	69.5 - 120	
159 Tb	3709252.00	0.37	3226356.00	115.0	69.5 - 120	
209 Bi	1951581.40	0.84	1827412.60	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000341

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 22 2018 06:26 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-008
Misc Info: LC20IMS1
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	20.375	4.075	ppb	0.34	100.	
11 B	289.4	57.88	ppb	2.35	1000.	
23 Na	17,000.	3,400.	ppb	1.78	200000.	
25 Mg	185,750.	37,150.	ppb	0.62	200000.	
27 Al	435,500.	87,100.	ppb	2.19	200000.	
28 Si	4,219.	843.8	ppb	5.62	#VALUE!	
29 Si	3,725.	745.	ppb	6.71	10000.	
39 K	119,650.	23,930.	ppb	2.14	200000.	
43 Ca	1,007,500.	201,500.	ppb	1.04	#VALUE!	
44 Ca	1,001,500.	200,300.	ppb	1.37	200000.	>LDR
51 V	950.5	190.1	ppb	2.14	1000.	
52 Cr	395.5	79.1	ppb	1.60	2000.	
53 Cr	417.05	83.41	ppb	2.26	#VALUE!	
55 Mn	2,355.5	471.1	ppb	1.61	2000.	
56 Fe	362,950.	72,590.	ppb	1.37	#VALUE!	
57 Fe	354,450.	70,890.	ppb	2.17	100000.	
59 Co	108.55	21.71	ppb	1.44	1000.	
60 Ni	365.	73.	ppb	1.38	1000.	
63 Cu	241.35	48.27	ppb	0.91	#VALUE!	
65 Cu	246.7	49.34	ppb	0.69	2000.	
66 Zn	963.5	192.7	ppb	1.26	2000.	
68 Zn	1,154.5	230.9	ppb	0.69	#VALUE!	
75 As	185.05	37.01	ppb	0.32	1000.	
82 Se	8.405	1.681	ppb	17.66	1000.	
88 Sr	4,022.5	804.5	ppb	3.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.578	0.9156	ppb	2.37	1000.	
107 Ag	2.018	0.4036	ppb	5.30	100.	
109 Ag	1.375	0.275	ppb	4.27	#VALUE!	
111 Cd	7.935	1.587	ppb	5.96	#VALUE!	
114 Cd	-0.7165	-0.1433	ppb	12.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	62.65	12.53	ppb	1.64	1000.	
120 Sn	62.5	12.5	ppb	0.98	#VALUE!	
121 Sb	5.655	1.131	ppb	4.80	#VALUE!	
123 Sb	5.78	1.156	ppb	4.94	1000.	
135 Ba	6,375.	1,275.	ppb	2.30	2000.	
137 Ba	6,310.	1,262.	ppb	0.94	#VALUE!	
182 W	1.453	0.2906	ppb	6.79	1000.	
203 Tl	7.38	1.476	ppb	5.96	1000.	
205 Tl	7.29	1.458	ppb	1.31	#VALUE!	
208 Pb	263.1	52.62	ppb	0.94	2000.	
232 Th	183.55	36.71	ppb	1.04	1000.	
238 U	33.895	6.779	ppb	1.47	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3816987.50	0.19	3343964.50	114.1	69.5 - 120	
45 Sc	3395493.30	1.73	2753983.00	123.3	69.5 - 120	IS Fai
72 Ge	589976.81	1.45	501751.53	117.6	69.5 - 120	
159 Tb	3781593.80	1.07	3226356.00	117.2	69.5 - 120	
209 Bi	1917585.40	1.04	1827412.60	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Fail

Katahdin Analytical Services 4000342

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 22 2018 06:30 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-009
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.49	2.498	ppb	2.71	100.	
11 B	141.95	28.39	ppb	4.03	1000.	
23 Na	9,545.	1,909.	ppb	1.87	200000.	
25 Mg	109,250.	21,850.	ppb	1.87	200000.	
27 Al	257,200.	51,440.	ppb	2.09	200000.	
28 Si	4,273.	854.6	ppb	11.52	#VALUE!	
29 Si	3,574.5	714.9	ppb	5.54	10000.	
39 K	55,050.	11,010.	ppb	0.25	200000.	
43 Ca	119,500.	23,900.	ppb	1.14	#VALUE!	
44 Ca	117,500.	23,500.	ppb	0.81	200000.	
51 V	495.4	99.08	ppb	1.35	1000.	
52 Cr	268.25	53.65	ppb	1.02	2000.	
53 Cr	306.7	61.34	ppb	1.47	#VALUE!	
55 Mn	4,385.5	877.1	ppb	1.13	2000.	
56 Fe	222,700.	44,540.	ppb	0.91	#VALUE!	
57 Fe	216,400.	43,280.	ppb	0.57	100000.	
59 Co	162.3	32.46	ppb	0.59	1000.	
60 Ni	227.3	45.46	ppb	0.51	1000.	
63 Cu	193.3	38.66	ppb	0.64	#VALUE!	
65 Cu	196.75	39.35	ppb	1.35	2000.	
66 Zn	720.	144.	ppb	0.76	2000.	
68 Zn	810.5	162.1	ppb	0.52	#VALUE!	
75 As	29.995	5.999	ppb	4.05	1000.	
82 Se	7.285	1.457	ppb	5.68	1000.	
88 Sr	767.5	153.5	ppb	2.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.765	3.353	ppb	1.92	1000.	
107 Ag	1.368	0.2736	ppb	7.61	100.	
109 Ag	1.0385	0.2077	ppb	6.47	#VALUE!	
111 Cd	5.42	1.084	ppb	4.70	#VALUE!	
114 Cd	1.74	0.348	ppb	4.90	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	54.55	10.91	ppb	0.77	1000.	
120 Sn	54.95	10.99	ppb	0.11	#VALUE!	
121 Sb	2.6035	0.5207	ppb	5.00	#VALUE!	
123 Sb	2.6545	0.5309	ppb	5.06	1000.	
135 Ba	3,163.5	632.7	ppb	0.42	2000.	
137 Ba	3,178.5	635.7	ppb	1.18	#VALUE!	
182 W	0.9475	0.1895	ppb	13.34	1000.	
203 Tl	4.418	0.8836	ppb	2.19	1000.	
205 Tl	4.5895	0.9179	ppb	1.32	#VALUE!	
208 Pb	174.05	34.81	ppb	1.32	2000.	
232 Th	129.55	25.91	ppb	1.20	1000.	
238 U	14.615	2.923	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3882568.30	6.86	3343964.50	116.1	69.5 - 120	
45 Sc	3387670.30	3.99	2753983.00	123.0	69.5 - 120	IS Fai
72 Ge	598382.19	4.05	501751.53	119.3	69.5 - 120	
159 Tb	3779297.80	2.66	3226356.00	117.1	69.5 - 120	
209 Bi	1977582.00	1.45	1827412.60	108.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Fail

Katahdin Analytical Services 4000343

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 22 2018 06:34 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-012
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	17.175	3.435	ppb	2.45	100.	
11 B	205.2	41.04	ppb	2.44	1000.	
23 Na	3,011.	602.2	ppb	2.08	200000.	
25 Mg	117,650.	23,530.	ppb	1.10	200000.	
27 Al	342,050.	68,410.	ppb	0.87	200000.	
28 Si	4,633.5	926.7	ppb	4.47	#VALUE!	
29 Si	3,777.	755.4	ppb	4.38	10000.	
39 K	83,150.	16,630.	ppb	0.76	200000.	
43 Ca	314,650.	62,930.	ppb	0.44	#VALUE!	
44 Ca	302,250.	60,450.	ppb	0.21	200000.	
51 V	674.	134.8	ppb	1.17	1000.	
52 Cr	348.85	69.77	ppb	0.88	2000.	
53 Cr	379.4	75.88	ppb	0.47	#VALUE!	
55 Mn	4,904.5	980.9	ppb	0.57	2000.	
56 Fe	326,500.	65,300.	ppb	1.04	#VALUE!	
57 Fe	317,100.	63,420.	ppb	0.53	100000.	
59 Co	135.3	27.06	ppb	0.68	1000.	
60 Ni	394.95	78.99	ppb	0.65	1000.	
63 Cu	233.25	46.65	ppb	0.34	#VALUE!	
65 Cu	236.5	47.3	ppb	0.50	2000.	
66 Zn	937.5	187.5	ppb	0.64	2000.	
68 Zn	1,012.5	202.5	ppb	1.14	#VALUE!	
75 As	61.5	12.3	ppb	3.43	1000.	
82 Se	7.815	1.563	ppb	18.85	1000.	
88 Sr	1,664.5	332.9	ppb	1.65	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.295	1.459	ppb	7.44	1000.	
107 Ag	1.528	0.3056	ppb	2.38	100.	
109 Ag	1.17	0.234	ppb	7.24	#VALUE!	
111 Cd	4.7525	0.9505	ppb	4.74	#VALUE!	
114 Cd	0.1136	0.0227	ppb	90.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.6	11.32	ppb	0.39	1000.	
120 Sn	56.75	11.35	ppb	1.42	#VALUE!	
121 Sb	3.9025	0.7805	ppb	2.55	#VALUE!	
123 Sb	4.031	0.8062	ppb	0.98	1000.	
135 Ba	3,167.	633.4	ppb	1.55	2000.	
137 Ba	3,142.5	628.5	ppb	0.31	#VALUE!	
182 W	1.004	0.2008	ppb	6.07	1000.	
203 Tl	6.045	1.209	ppb	2.20	1000.	
205 Tl	5.87	1.174	ppb	1.48	#VALUE!	
208 Pb	201.8	40.36	ppb	0.48	2000.	
232 Th	159.	31.8	ppb	0.42	1000.	
238 U	18.965	3.793	ppb	0.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3547974.50	0.47	3343964.50	106.1	69.5 - 120	
45 Sc	3245210.80	1.88	2753983.00	117.8	69.5 - 120	
72 Ge	570665.00	1.20	501751.53	113.7	69.5 - 120	
159 Tb	3657653.80	0.82	3226356.00	113.4	69.5 - 120	
209 Bi	1922978.90	0.39	1827412.60	105.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000344

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 22 2018 06:38 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-013
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	10.46	2.092	ppb	0.73	100.	
11 B	119.9	23.98	ppb	1.21	1000.	
23 Na	1,875.5	375.1	ppb	1.17	200000.	
25 Mg	89,050.	17,810.	ppb	1.99	200000.	
27 Al	212,050.	42,410.	ppb	1.15	200000.	
28 Si	4,756.5	951.3	ppb	2.25	#VALUE!	
29 Si	3,924.	784.8	ppb	2.56	10000.	
39 K	46,960.	9,392.	ppb	0.81	200000.	
43 Ca	210,850.	42,170.	ppb	1.39	#VALUE!	
44 Ca	202,400.	40,480.	ppb	0.19	200000.	
51 V	403.85	80.77	ppb	1.71	1000.	
52 Cr	216.9	43.38	ppb	0.30	2000.	
53 Cr	248.95	49.79	ppb	0.79	#VALUE!	
55 Mn	1,926.5	385.3	ppb	0.92	2000.	
56 Fe	195,550.	39,110.	ppb	0.66	#VALUE!	
57 Fe	191,000.	38,200.	ppb	0.41	100000.	
59 Co	54.9	10.98	ppb	0.09	1000.	
60 Ni	141.6	28.32	ppb	0.38	1000.	
63 Cu	158.1	31.62	ppb	0.44	#VALUE!	
65 Cu	161.4	32.28	ppb	0.62	2000.	
66 Zn	570.5	114.1	ppb	0.48	2000.	
68 Zn	665.	133.	ppb	1.24	#VALUE!	
75 As	29.885	5.977	ppb	2.92	1000.	
82 Se	5.04	1.008	ppb	29.33	1000.	
88 Sr	733.5	146.7	ppb	0.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.7245	0.5449	ppb	1.04	1000.	
107 Ag	1.14	0.228	ppb	6.79	100.	
109 Ag	0.9225	0.1845	ppb	2.44	#VALUE!	
111 Cd	3.3215	0.6643	ppb	5.33	#VALUE!	
114 Cd	-0.0557	-0.0111	ppb	420.93	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.6	10.52	ppb	0.87	1000.	
120 Sn	52.6	10.52	ppb	0.96	#VALUE!	
121 Sb	2.0215	0.4043	ppb	3.76	#VALUE!	
123 Sb	1.967	0.3934	ppb	6.38	1000.	
135 Ba	3,193.	638.6	ppb	0.57	2000.	
137 Ba	3,165.5	633.1	ppb	0.81	#VALUE!	
182 W	0.6015	0.1203	ppb	6.58	1000.	
203 Tl	3.487	0.6974	ppb	6.77	1000.	
205 Tl	3.5225	0.7045	ppb	3.44	#VALUE!	
208 Pb	141.4	28.28	ppb	0.59	2000.	
232 Th	101.35	20.27	ppb	1.00	1000.	
238 U	11.41	2.282	ppb	1.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3537165.00	2.14	3343964.50	105.8	69.5 - 120	
45 Sc	3178762.80	0.66	2753983.00	115.4	69.5 - 120	
72 Ge	572652.31	0.88	501751.53	114.1	69.5 - 120	
159 Tb	3707415.80	0.75	3226356.00	114.9	69.5 - 120	
209 Bi	1961801.40	0.43	1827412.60	107.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000345

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 22 2018 06:42 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0028	0.0028	ppb	34.23	100.	
11 B	1.079	1.079	ppb	9.53	1000.	
23 Na	1.714	1.714	ppb	5.73	200000.	
25 Mg	1.061	1.061	ppb	52.71	200000.	
27 Al	1.876	1.876	ppb	49.05	200000.	
28 Si	65.52	65.52	ppb	35.73	#VALUE!	
29 Si	-83.04	-83.04	ppb	6.80	10000.	
39 K	-8.21	-8.21	ppb	17.88	200000.	
43 Ca	5.515	5.515	ppb	70.88	#VALUE!	
44 Ca	5.066	5.066	ppb	22.86	200000.	
51 V	-0.0025	-0.0025	ppb	1583.00	1000.	
52 Cr	0.0152	0.0152	ppb	59.53	2000.	
53 Cr	0.7248	0.7248	ppb	9.29	#VALUE!	
55 Mn	0.0086	0.0086	ppb	97.30	2000.	
56 Fe	3.824	3.824	ppb	35.98	#VALUE!	
57 Fe	1.858	1.858	ppb	53.41	100000.	
59 Co	-0.0008	-0.0008	ppb	128.97	1000.	
60 Ni	0.0006	0.0006	ppb	1236.90	1000.	
63 Cu	0.02	0.02	ppb	48.97	#VALUE!	
65 Cu	0.0059	0.0059	ppb	195.80	2000.	
66 Zn	0.0036	0.0036	ppb	1559.80	2000.	
68 Zn	-0.0178	-0.0178	ppb	543.61	#VALUE!	
75 As	-0.0647	-0.0647	ppb	120.98	1000.	
82 Se	0.1127	0.1127	ppb	309.67	1000.	
88 Sr	0.0078	0.0078	ppb	74.02	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0072	0.0072	ppb	49.82	1000.	
107 Ag	-0.0035	-0.0035	ppb	85.15	100.	
109 Ag	-0.0017	-0.0017	ppb	83.48	#VALUE!	
111 Cd	-0.1628	-0.1628	ppb	37.45	#VALUE!	
114 Cd	0.002	0.002	ppb	127.55	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0093	0.0093	ppb	113.12	1000.	
120 Sn	-0.0069	-0.0069	ppb	126.21	#VALUE!	
121 Sb	-0.0008	-0.0008	ppb	150.56	#VALUE!	
123 Sb	0.0012	0.0012	ppb	411.24	1000.	
135 Ba	0.0306	0.0306	ppb	30.15	2000.	
137 Ba	0.0303	0.0303	ppb	62.78	#VALUE!	
182 W	0.0005	0.0005	ppb	353.73	1000.	
203 Tl	0.0012	0.0012	ppb	504.15	1000.	
205 Tl	-0.0013	-0.0013	ppb	159.63	#VALUE!	
208 Pb	0.0012	0.0012	ppb	85.22	2000.	
232 Th	0.0022	0.0022	ppb	63.56	1000.	
238 U	0.0007	0.0007	ppb	84.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3161211.80	0.76	3343964.50	94.5	69.5 - 120	
45 Sc	2790289.00	0.70	2753983.00	101.3	69.5 - 120	
72 Ge	506455.56	0.30	501751.53	100.9	69.5 - 120	
159 Tb	3275953.30	0.81	3226356.00	101.5	69.5 - 120	
209 Bi	1833352.90	1.06	1827412.60	100.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000346

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 22 2018 06:46 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0013	-0.0013	ppb	260.81	100.	
11 B	0.7205	0.7205	ppb	10.05	1000.	
23 Na	0.3386	0.3386	ppb	84.85	200000.	
25 Mg	0.627	0.627	ppb	20.91	200000.	
27 Al	1.289	1.289	ppb	5.68	200000.	
28 Si	86.52	86.52	ppb	37.24	#VALUE!	
29 Si	-59.63	-59.63	ppb	77.73	10000.	
39 K	-7.172	-7.172	ppb	13.42	200000.	
43 Ca	4.239	4.239	ppb	134.21	#VALUE!	
44 Ca	6.367	6.367	ppb	18.44	200000.	
51 V	0.0464	0.0464	ppb	101.16	1000.	
52 Cr	0.0207	0.0207	ppb	174.19	2000.	
53 Cr	0.7249	0.7249	ppb	16.47	#VALUE!	
55 Mn	0.0148	0.0148	ppb	28.13	2000.	
56 Fe	4.616	4.616	ppb	49.81	#VALUE!	
57 Fe	0.2972	0.2972	ppb	1159.20	100000.	
59 Co	-0.0019	-0.0019	ppb	16.74	1000.	
60 Ni	0.0041	0.0041	ppb	109.35	1000.	
63 Cu	0.0303	0.0303	ppb	4.90	#VALUE!	
65 Cu	0.0189	0.0189	ppb	74.17	2000.	
66 Zn	0.1013	0.1013	ppb	52.84	2000.	
68 Zn	-0.0422	-0.0422	ppb	266.37	#VALUE!	
75 As	-0.0507	-0.0507	ppb	305.37	1000.	
82 Se	0.1939	0.1939	ppb	63.49	1000.	
88 Sr	0.0073	0.0073	ppb	84.58	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0061	0.0061	ppb	24.17	1000.	
107 Ag	-0.0013	-0.0013	ppb	212.62	100.	
109 Ag	0.0002	0.0002	ppb	613.70	#VALUE!	
111 Cd	-0.1903	-0.1903	ppb	9.72	#VALUE!	
114 Cd	0.002	0.002	ppb	199.12	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0056	0.0056	ppb	86.80	1000.	
120 Sn	-0.0047	-0.0047	ppb	191.63	#VALUE!	
121 Sb	-0.0033	-0.0033	ppb	183.90	#VALUE!	
123 Sb	0.0017	0.0017	ppb	355.74	1000.	
135 Ba	0.0267	0.0267	ppb	109.27	2000.	
137 Ba	0.0287	0.0287	ppb	35.11	#VALUE!	
182 W	0.0002	0.0002	ppb	2800.70	1000.	
203 Tl	0.0004	0.0004	ppb	367.83	1000.	
205 Tl	-0.0009	-0.0009	ppb	159.98	#VALUE!	
208 Pb	0.	0.	ppb	18805.00	2000.	
232 Th	-0.0006	-0.0006	ppb	276.26	1000.	
238 U	0.0008	0.0008	ppb	107.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3276919.30	0.91	3343964.50	98.0	69.5 - 120	
45 Sc	2802243.50	0.87	2753983.00	101.8	69.5 - 120	
72 Ge	509843.97	0.92	501751.53	101.6	69.5 - 120	
159 Tb	3261101.80	0.65	3226356.00	101.1	69.5 - 120	
209 Bi	1827878.50	0.32	1827412.60	100.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000347

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\040_CCV.D\040_CCV.D#
Date Acquired: Mar 22 2018 06:50 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.79	ppb	1.15	25	99.16	
11 B	25.07	ppb	3.59	25	100.28	
23 Na	4,751.	ppb	1.37	5,000	95.02	
25 Mg	4,847.	ppb	1.58	5,000	96.94	
27 Al	495.8	ppb	2.20	500	99.16	
28 Si	564.3	ppb	4.91	500	112.86	
29 Si	413.4	ppb	8.48	500	82.68	Fail
39 K	5,003.	ppb	1.45	5,000	100.06	
43 Ca	4,935.	ppb	1.23	5,000	98.7	
44 Ca	5,038.	ppb	0.22	5,000	100.76	
51 V	25.18	ppb	0.72	25	100.72	
52 Cr	25.06	ppb	0.29	25	100.24	
53 Cr	24.73	ppb	1.56	25	98.92	
55 Mn	25.13	ppb	0.43	25	100.52	
56 Fe	5,005.	ppb	1.47	5,000	100.1	
57 Fe	5,076.	ppb	1.10	5,000	101.52	
59 Co	24.97	ppb	1.81	25	99.88	
60 Ni	25.22	ppb	1.93	25	100.88	
63 Cu	25.41	ppb	0.75	25	101.64	
65 Cu	25.31	ppb	0.52	25	101.24	
66 Zn	25.33	ppb	1.07	25	101.32	
68 Zn	24.54	ppb	2.14	25	98.16	
75 As	25.05	ppb	0.81	25	100.2	
82 Se	25.25	ppb	0.54	25	101	
88 Sr	25.82	ppb	2.06	25	103.28	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.46	ppb	1.30	25	101.84	
107 Ag	25.54	ppb	1.34	25	102.16	
109 Ag	25.63	ppb	0.94	25	102.52	
111 Cd	25.13	ppb	1.79	25	100.52	
114 Cd	25.49	ppb	0.82	25	101.96	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.03	ppb	1.59	25	100.12	
120 Sn	25.13	ppb	2.42	25	100.52	
121 Sb	25.04	ppb	2.28	25	100.16	
123 Sb	25.05	ppb	0.69	25	100.2	
135 Ba	25.2	ppb	0.66	25	100.8	
137 Ba	25.32	ppb	2.33	25	101.28	
182 W	24.42	ppb	2.37	25	97.68	
203 Tl	24.77	ppb	1.07	25	99.08	
205 Tl	24.83	ppb	0.91	25	99.32	
208 Pb	24.87	ppb	0.94	25	99.48	
232 Th	24.73	ppb	0.60	25	98.92	
238 U	24.92	ppb	0.90	25	99.68	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3500927.50	1.07	3343964.50	104.7	80 - 120.4	
45 Sc	3007119.30	1.42	2753983.00	109.2	80 - 120.4	
72 Ge	540802.25	1.28	501751.53	107.8	80 - 120.4	
159 Tb	3546701.30	1.13	3226356.00	109.9	80 - 120.4	
209 Bi	1966289.80	0.48	1827412.60	107.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000348

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\041_CCB.D\041_CCB.D#
Date Acquired: Mar 22 2018 06:54 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0017	ppb	129.45	1.00	
11 B	0.7652	ppb	9.15	1.00	
23 Na	-0.2649	ppb	16.44	1.00	
25 Mg	0.5183	ppb	5.75	1.00	
27 Al	0.5368	ppb	8.38	1.00	
28 Si	82.99	ppb	36.81	1.00	
29 Si	-55.22	ppb	107.19	1.00	
39 K	-7.632	ppb	82.69	1.00	
43 Ca	3.188	ppb	75.19	1.00	
44 Ca	2.438	ppb	55.87	1.00	
51 V	0.0417	ppb	122.29	1.00	
52 Cr	-0.0206	ppb	145.41	1.00	
53 Cr	0.3732	ppb	38.00	1.00	
55 Mn	0.0045	ppb	241.44	1.00	
56 Fe	2.506	ppb	260.85	1.00	
57 Fe	-1.173	ppb	71.37	1.00	
59 Co	-0.0009	ppb	339.68	1.00	
60 Ni	0.0085	ppb	218.35	1.00	
63 Cu	-0.0029	ppb	281.44	1.00	
65 Cu	-0.0086	ppb	49.64	1.00	
66 Zn	0.0525	ppb	49.69	1.00	
68 Zn	0.0844	ppb	20.49	1.00	
75 As	-0.0903	ppb	247.48	1.00	
82 Se	0.0228	ppb	611.23	1.00	
88 Sr	-0.0002	ppb	2513.40	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0143	ppb	33.25	1.00	
107 Ag	-0.0022	ppb	29.58	1.00	
109 Ag	0.0023	ppb	56.12	1.00	
111 Cd	-0.1925	ppb	18.17	1.00	
114 Cd	-0.0004	ppb	1061.90	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0075	ppb	331.12	1.00	
120 Sn	0.0195	ppb	70.69	1.00	
121 Sb	0.0015	ppb	225.95	1.00	
123 Sb	0.0033	ppb	165.62	1.00	
135 Ba	0.0021	ppb	845.00	1.00	
137 Ba	0.0181	ppb	72.53	1.00	
182 W	0.0154	ppb	42.62	1.00	
203 Tl	0.0007	ppb	683.19	1.00	
205 Tl	-0.0005	ppb	649.76	1.00	
208 Pb	0.0028	ppb	159.44	1.00	
232 Th	0.0103	ppb	37.87	1.00	
238 U	0.0021	ppb	56.76	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3304855.50	5.17	3343964.50	98.8	79.5 - 120	
45 Sc	2813969.80	4.22	2753983.00	102.2	79.5 - 120	
72 Ge	511777.63	3.82	501751.53	102.0	79.5 - 120	
159 Tb	3280307.00	3.12	3226356.00	101.7	79.5 - 120	
209 Bi	1850621.40	2.87	1827412.60	101.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000349

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\042SMPL.D\042SMPL.D#
Date Acquired: Mar 22 2018 06:58 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBSLC21IMS1
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0148	-0.003	ppb	60.00	100.	
11 B	3.187	0.6374	ppb	11.66	1000.	
23 Na	24.99	4.998	ppb	3.50	200000.	
25 Mg	8.97	1.794	ppb	7.24	200000.	
27 Al	8.775	1.755	ppb	2.43	200000.	
28 Si	236.3	47.26	ppb	62.12	#VALUE!	
29 Si	-356.25	-71.25	ppb	13.22	10000.	
39 K	-21.54	-4.308	ppb	34.08	200000.	
43 Ca	65.	13.	ppb	26.56	#VALUE!	
44 Ca	40.57	8.114	ppb	14.53	200000.	
51 V	-0.1004	-0.0201	ppb	78.72	1000.	
52 Cr	1.4985	0.2997	ppb	4.21	2000.	
53 Cr	43.825	8.765	ppb	1.59	#VALUE!	
55 Mn	0.3248	0.065	ppb	11.36	2000.	
56 Fe	31.105	6.221	ppb	25.13	#VALUE!	
57 Fe	20.84	4.168	ppb	96.88	100000.	
59 Co	0.0139	0.0028	ppb	91.04	1000.	
60 Ni	0.609	0.1218	ppb	13.53	1000.	
63 Cu	1.1405	0.2281	ppb	6.17	#VALUE!	
65 Cu	1.055	0.211	ppb	8.72	2000.	
66 Zn	0.3319	0.0664	ppb	43.06	2000.	
68 Zn	-0.558	-0.1116	ppb	142.56	#VALUE!	
75 As	0.653	0.1306	ppb	190.12	1000.	
82 Se	0.6785	0.1357	ppb	147.97	1000.	
88 Sr	0.1055	0.0211	ppb	35.16	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1248	0.025	ppb	43.33	1000.	
107 Ag	-0.015	-0.003	ppb	44.51	100.	
109 Ag	-0.0019	-0.0004	ppb	312.71	#VALUE!	
111 Cd	-0.9465	-0.1893	ppb	20.96	#VALUE!	
114 Cd	-0.1321	-0.0264	ppb	26.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	43.415	8.683	ppb	2.35	1000.	
120 Sn	43.595	8.719	ppb	3.53	#VALUE!	
121 Sb	0.0528	0.0106	ppb	9.04	#VALUE!	
123 Sb	0.0964	0.0193	ppb	8.97	1000.	
135 Ba	0.1938	0.0388	ppb	38.09	2000.	
137 Ba	0.2762	0.0552	ppb	36.77	#VALUE!	
182 W	0.0628	0.0126	ppb	26.77	1000.	
203 Tl	-0.0127	-0.0025	ppb	151.82	1000.	
205 Tl	-0.0017	-0.0003	ppb	421.19	#VALUE!	
208 Pb	0.2073	0.0415	ppb	7.16	2000.	
232 Th	0.0641	0.0128	ppb	23.89	1000.	
238 U	0.009	0.0018	ppb	69.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3253630.50	1.52	3343964.50	97.3	69.5 - 120	
45 Sc	2808566.30	1.07	2753983.00	102.0	69.5 - 120	
72 Ge	521592.69	0.53	501751.53	104.0	69.5 - 120	
159 Tb	3350751.00	1.87	3226356.00	103.9	69.5 - 120	
209 Bi	1873138.90	2.24	1827412.60	102.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000350

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\043SMPL.D\043SMPL.D#
Date Acquired: Mar 22 2018 07:03 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSOLC21IMS1
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	48.535	9.707	ppb	1.20	100.	
11 B	479.	95.8	ppb	3.10	1000.	
23 Na	6,935.	1,387.	ppb	1.95	200000.	
25 Mg	4,792.5	958.5	ppb	4.28	200000.	
27 Al	2,020.	404.	ppb	0.51	200000.	
28 Si	827.	165.4	ppb	19.84	#VALUE!	
29 Si	189.8	37.96	ppb	71.15	10000.	
39 K	9,725.	1,945.	ppb	0.62	200000.	
43 Ca	2,815.	563.	ppb	2.76	#VALUE!	
44 Ca	2,530.5	506.1	ppb	2.20	200000.	
51 V	490.55	98.11	ppb	0.19	1000.	
52 Cr	194.8	38.96	ppb	0.57	2000.	
53 Cr	236.65	47.33	ppb	0.75	#VALUE!	
55 Mn	496.1	99.22	ppb	1.27	2000.	
56 Fe	964.	192.8	ppb	1.30	#VALUE!	
57 Fe	970.	194.	ppb	1.23	100000.	
59 Co	501.5	100.3	ppb	0.46	1000.	
60 Ni	496.15	99.23	ppb	0.87	1000.	
63 Cu	246.	49.2	ppb	1.11	#VALUE!	
65 Cu	247.95	49.59	ppb	0.12	2000.	
66 Zn	486.5	97.3	ppb	0.99	2000.	
68 Zn	541.5	108.3	ppb	1.42	#VALUE!	
75 As	97.3	19.46	ppb	2.40	1000.	
82 Se	96.85	19.37	ppb	3.64	1000.	
88 Sr	504.	100.8	ppb	2.26	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	101.	20.2	ppb	0.90	1000.	
107 Ag	51.8	10.36	ppb	0.56	100.	
109 Ag	51.4	10.28	ppb	1.23	#VALUE!	
111 Cd	251.4	50.28	ppb	0.82	#VALUE!	
114 Cd	252.1	50.42	ppb	0.58	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	540.	108.	ppb	2.31	1000.	
120 Sn	539.	107.8	ppb	1.75	#VALUE!	
121 Sb	100.3	20.06	ppb	2.23	#VALUE!	
123 Sb	100.7	20.14	ppb	2.55	1000.	
135 Ba	2,016.	403.2	ppb	1.83	2000.	
137 Ba	2,028.5	405.7	ppb	1.86	#VALUE!	
182 W	96.45	19.29	ppb	1.62	1000.	
203 Tl	99.75	19.95	ppb	2.71	1000.	
205 Tl	99.8	19.96	ppb	1.36	#VALUE!	
208 Pb	101.05	20.21	ppb	2.39	2000.	
232 Th	98.35	19.67	ppb	1.74	1000.	
238 U	100.25	20.05	ppb	1.72	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3523222.00	1.06	3343964.50	105.4	69.5 - 120	
45 Sc	2938009.00	0.62	2753983.00	106.7	69.5 - 120	
72 Ge	541170.88	0.75	501751.53	107.9	69.5 - 120	
159 Tb	3526407.80	1.28	3226356.00	109.3	69.5 - 120	
209 Bi	1939062.50	1.63	1827412.60	106.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000351

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\044SMPL.D\044SMPL.D#
Date Acquired: Mar 22 2018 07:06 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2004-007
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.395	1.079	ppb	1.13	100.	
11 B	240.75	48.15	ppb	2.23	1000.	
23 Na	69,200.	13,840.	ppb	0.77	200000.	
25 Mg	54,050.	10,810.	ppb	0.55	200000.	
27 Al	113,850.	22,770.	ppb	1.05	200000.	
28 Si	2,939.5	587.9	ppb	4.28	#VALUE!	
29 Si	2,268.	453.6	ppb	6.32	10000.	
39 K	30,290.	6,058.	ppb	1.29	200000.	
43 Ca	22,775.	4,555.	ppb	0.69	#VALUE!	
44 Ca	22,630.	4,526.	ppb	0.16	200000.	
51 V	298.95	59.79	ppb	1.16	1000.	
52 Cr	478.25	95.65	ppb	0.73	2000.	
53 Cr	508.5	101.7	ppb	0.87	#VALUE!	
55 Mn	2,373.	474.6	ppb	0.75	2000.	
56 Fe	178,100.	35,620.	ppb	0.93	#VALUE!	
57 Fe	173,000.	34,600.	ppb	0.78	100000.	
59 Co	59.5	11.9	ppb	0.74	1000.	
60 Ni	162.45	32.49	ppb	0.37	1000.	
63 Cu	950.	190.	ppb	1.13	#VALUE!	
65 Cu	972.5	194.5	ppb	0.43	2000.	
66 Zn	1,521.5	304.3	ppb	0.45	2000.	
68 Zn	1,453.5	290.7	ppb	0.52	#VALUE!	
75 As	44.845	8.969	ppb	0.58	1000.	
82 Se	7.065	1.413	ppb	27.02	1000.	
88 Sr	245.2	49.04	ppb	0.11	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	12.315	2.463	ppb	1.01	1000.	
107 Ag	7.115	1.423	ppb	2.76	100.	
109 Ag	7.2	1.44	ppb	0.92	#VALUE!	
111 Cd	10.055	2.011	ppb	1.17	#VALUE!	
114 Cd	10.11	2.022	ppb	2.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	90.4	18.08	ppb	1.42	1000.	
120 Sn	90.55	18.11	ppb	0.53	#VALUE!	
121 Sb	0.7845	0.1569	ppb	10.33	#VALUE!	
123 Sb	0.842	0.1684	ppb	3.61	1000.	
135 Ba	379.75	75.95	ppb	0.52	2000.	
137 Ba	380.45	76.09	ppb	0.39	#VALUE!	
182 W	1.8495	0.3699	ppb	4.53	1000.	
203 Tl	2.282	0.4564	ppb	2.94	1000.	
205 Tl	2.276	0.4552	ppb	5.47	#VALUE!	
208 Pb	606.5	121.3	ppb	0.37	2000.	
232 Th	47.55	9.51	ppb	0.70	1000.	
238 U	12.13	2.426	ppb	0.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3649371.30	1.70	3343964.50	109.1	69.5 - 120	
45 Sc	3139824.80	1.10	2753983.00	114.0	69.5 - 120	
72 Ge	576041.56	1.11	501751.53	114.8	69.5 - 120	
159 Tb	3675805.30	0.44	3226356.00	113.9	69.5 - 120	
209 Bi	1961139.50	0.54	1827412.60	107.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000352

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\045SMPL.D\045SMPL.D#
Date Acquired: Mar 22 2018 07:11 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2005-005
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.005	1.401	ppb	2.02	100.	
11 B	312.5	62.5	ppb	3.50	1000.	
23 Na	94,500.	18,900.	ppb	1.34	200000.	
25 Mg	71,200.	14,240.	ppb	1.04	200000.	
27 Al	146,850.	29,370.	ppb	0.35	200000.	
28 Si	3,197.	639.4	ppb	4.15	#VALUE!	
29 Si	2,475.	495.	ppb	10.46	10000.	
39 K	39,210.	7,842.	ppb	1.21	200000.	
43 Ca	27,110.	5,422.	ppb	0.34	#VALUE!	
44 Ca	27,185.	5,437.	ppb	0.42	200000.	
51 V	383.65	76.73	ppb	0.43	1000.	
52 Cr	573.	114.6	ppb	0.81	2000.	
53 Cr	603.5	120.7	ppb	0.59	#VALUE!	
55 Mn	3,033.	606.6	ppb	1.40	2000.	
56 Fe	237,800.	47,560.	ppb	1.29	#VALUE!	
57 Fe	231,600.	46,320.	ppb	0.98	100000.	
59 Co	77.	15.4	ppb	0.52	1000.	
60 Ni	207.	41.4	ppb	0.61	1000.	
63 Cu	1,088.5	217.7	ppb	1.24	#VALUE!	
65 Cu	1,126.	225.2	ppb	0.50	2000.	
66 Zn	1,653.	330.6	ppb	0.68	2000.	
68 Zn	1,572.5	314.5	ppb	0.45	#VALUE!	
75 As	58.45	11.69	ppb	1.44	1000.	
82 Se	8.7	1.74	ppb	13.30	1000.	
88 Sr	311.	62.2	ppb	3.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	15.365	3.073	ppb	3.29	1000.	
107 Ag	7.96	1.592	ppb	2.91	100.	
109 Ag	7.865	1.573	ppb	3.02	#VALUE!	
111 Cd	10.225	2.045	ppb	3.68	#VALUE!	
114 Cd	9.755	1.951	ppb	3.38	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	98.25	19.65	ppb	1.59	1000.	
120 Sn	97.6	19.52	ppb	1.64	#VALUE!	
121 Sb	0.8295	0.1659	ppb	6.44	#VALUE!	
123 Sb	0.92	0.184	ppb	7.64	1000.	
135 Ba	465.55	93.11	ppb	1.21	2000.	
137 Ba	468.4	93.68	ppb	1.25	#VALUE!	
182 W	2.0415	0.4083	ppb	11.76	1000.	
203 Tl	2.9705	0.5941	ppb	2.90	1000.	
205 Tl	2.802	0.5604	ppb	1.69	#VALUE!	
208 Pb	683.	136.6	ppb	1.31	2000.	
232 Th	62.5	12.5	ppb	2.04	1000.	
238 U	16.43	3.286	ppb	1.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3591705.80	2.64	3343964.50	107.4	69.5 - 120	
45 Sc	3106755.30	1.74	2753983.00	112.8	69.5 - 120	
72 Ge	573317.38	1.74	501751.53	114.3	69.5 - 120	
159 Tb	3624846.30	0.11	3226356.00	112.4	69.5 - 120	
209 Bi	1921096.00	0.86	1827412.60	105.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000353

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\046SMPL.D\046SMPL.D#
Date Acquired: Mar 22 2018 07:15 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2006-005
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.41	1.082	ppb	4.02	100.	
11 B	225.3	45.06	ppb	2.53	1000.	
23 Na	66,900.	13,380.	ppb	1.30	200000.	
25 Mg	56,150.	11,230.	ppb	1.84	200000.	
27 Al	113,800.	22,760.	ppb	1.63	200000.	
28 Si	2,825.	565.	ppb	11.19	#VALUE!	
29 Si	2,217.5	443.5	ppb	10.65	10000.	
39 K	31,885.	6,377.	ppb	1.44	200000.	
43 Ca	28,255.	5,651.	ppb	1.05	#VALUE!	
44 Ca	27,770.	5,554.	ppb	1.55	200000.	
51 V	296.35	59.27	ppb	0.72	1000.	
52 Cr	430.95	86.19	ppb	1.63	2000.	
53 Cr	465.	93.	ppb	1.43	#VALUE!	
55 Mn	2,573.5	514.7	ppb	1.02	2000.	
56 Fe	179,050.	35,810.	ppb	0.94	#VALUE!	
57 Fe	174,900.	34,980.	ppb	0.82	100000.	
59 Co	61.15	12.23	ppb	0.97	1000.	
60 Ni	157.1	31.42	ppb	1.12	1000.	
63 Cu	806.5	161.3	ppb	0.40	#VALUE!	
65 Cu	825.	165.	ppb	0.98	2000.	
66 Zn	1,125.5	225.1	ppb	0.09	2000.	
68 Zn	1,075.	215.	ppb	0.34	#VALUE!	
75 As	43.595	8.719	ppb	2.01	1000.	
82 Se	6.245	1.249	ppb	19.97	1000.	
88 Sr	247.75	49.55	ppb	1.33	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.28	2.056	ppb	1.46	1000.	
107 Ag	5.295	1.059	ppb	2.48	100.	
109 Ag	5.34	1.068	ppb	3.13	#VALUE!	
111 Cd	5.335	1.067	ppb	2.02	#VALUE!	
114 Cd	5.22	1.044	ppb	0.51	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	77.8	15.56	ppb	2.33	1000.	
120 Sn	77.7	15.54	ppb	1.11	#VALUE!	
121 Sb	0.542	0.1084	ppb	5.27	#VALUE!	
123 Sb	0.595	0.119	ppb	7.13	1000.	
135 Ba	368.6	73.72	ppb	1.44	2000.	
137 Ba	369.3	73.86	ppb	0.29	#VALUE!	
182 W	1.2765	0.2553	ppb	2.84	1000.	
203 Tl	2.145	0.429	ppb	10.84	1000.	
205 Tl	2.087	0.4174	ppb	3.60	#VALUE!	
208 Pb	387.4	77.48	ppb	0.78	2000.	
232 Th	50.15	10.03	ppb	1.30	1000.	
238 U	10.75	2.15	ppb	1.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3519580.30	0.09	3343964.50	105.3	69.5 - 120	
45 Sc	3037722.00	1.46	2753983.00	110.3	69.5 - 120	
72 Ge	559639.13	0.98	501751.53	111.5	69.5 - 120	
159 Tb	3582257.50	0.78	3226356.00	111.0	69.5 - 120	
209 Bi	1933432.60	0.36	1827412.60	105.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000354

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\047SMPL.D\047SMPL.D#
Date Acquired: Mar 22 2018 07:19 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2006-006
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.835	1.367	ppb	1.87	100.	
11 B	344.85	68.97	ppb	1.98	1000.	
23 Na	122,550.	24,510.	ppb	0.84	200000.	
25 Mg	76,500.	15,300.	ppb	1.67	200000.	
27 Al	140,050.	28,010.	ppb	1.73	200000.	
28 Si	3,586.	717.2	ppb	6.96	#VALUE!	
29 Si	2,839.5	567.9	ppb	7.03	10000.	
39 K	41,675.	8,335.	ppb	1.90	200000.	
43 Ca	37,470.	7,494.	ppb	2.03	#VALUE!	
44 Ca	37,460.	7,492.	ppb	1.09	200000.	
51 V	383.25	76.65	ppb	1.15	1000.	
52 Cr	524.5	104.9	ppb	0.38	2000.	
53 Cr	550.	110.	ppb	1.19	#VALUE!	
55 Mn	3,568.	713.6	ppb	1.06	2000.	
56 Fe	221,700.	44,340.	ppb	0.82	#VALUE!	
57 Fe	215,450.	43,090.	ppb	0.65	100000.	
59 Co	76.5	15.3	ppb	0.21	1000.	
60 Ni	191.25	38.25	ppb	1.41	1000.	
63 Cu	1,009.5	201.9	ppb	1.36	#VALUE!	
65 Cu	1,033.5	206.7	ppb	0.73	2000.	
66 Zn	1,439.	287.8	ppb	1.03	2000.	
68 Zn	1,372.5	274.5	ppb	1.61	#VALUE!	
75 As	53.3	10.66	ppb	1.91	1000.	
82 Se	8.81	1.762	ppb	12.74	1000.	
88 Sr	356.	71.2	ppb	0.31	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.755	2.751	ppb	1.96	1000.	
107 Ag	5.835	1.167	ppb	1.50	100.	
109 Ag	5.75	1.15	ppb	5.21	#VALUE!	
111 Cd	5.325	1.065	ppb	4.32	#VALUE!	
114 Cd	4.7365	0.9473	ppb	2.15	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	88.35	17.67	ppb	1.18	1000.	
120 Sn	89.15	17.83	ppb	0.76	#VALUE!	
121 Sb	0.725	0.145	ppb	4.83	#VALUE!	
123 Sb	0.738	0.1476	ppb	1.86	1000.	
135 Ba	478.3	95.66	ppb	0.80	2000.	
137 Ba	480.5	96.1	ppb	1.78	#VALUE!	
182 W	1.6985	0.3397	ppb	3.44	1000.	
203 Tl	2.6305	0.5261	ppb	2.69	1000.	
205 Tl	2.646	0.5292	ppb	2.60	#VALUE!	
208 Pb	486.3	97.26	ppb	1.70	2000.	
232 Th	63.15	12.63	ppb	2.89	1000.	
238 U	13.785	2.757	ppb	1.15	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3635114.00	1.87	3343964.50	108.7	69.5 - 120	
45 Sc	3105123.50	1.32	2753983.00	112.8	69.5 - 120	
72 Ge	570233.56	0.53	501751.53	113.6	69.5 - 120	
159 Tb	3594569.00	1.25	3226356.00	111.4	69.5 - 120	
209 Bi	1920309.40	1.66	1827412.60	105.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000355

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\048SMPL.D\048SMPL.D#
Date Acquired: Mar 22 2018 07:24 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0009	-0.0009	ppb	140.01	100.	
11 B	1.897	1.897	ppb	9.79	1000.	
23 Na	0.3281	0.3281	ppb	65.80	200000.	
25 Mg	0.9959	0.9959	ppb	9.33	200000.	
27 Al	1.75	1.75	ppb	5.36	200000.	
28 Si	147.3	147.3	ppb	18.63	#VALUE!	
29 Si	32.23	32.23	ppb	33.70	10000.	
39 K	-3.736	-3.736	ppb	31.13	200000.	
43 Ca	5.65	5.65	ppb	36.32	#VALUE!	
44 Ca	7.398	7.398	ppb	19.82	200000.	
51 V	0.0011	0.0011	ppb	5112.90	1000.	
52 Cr	-0.0093	-0.0093	ppb	125.66	2000.	
53 Cr	0.2738	0.2738	ppb	27.35	#VALUE!	
55 Mn	0.0181	0.0181	ppb	33.00	2000.	
56 Fe	5.774	5.774	ppb	28.25	#VALUE!	
57 Fe	2.411	2.411	ppb	121.03	100000.	
59 Co	0.0004	0.0004	ppb	643.24	1000.	
60 Ni	0.0042	0.0042	ppb	199.47	1000.	
63 Cu	0.026	0.026	ppb	8.34	#VALUE!	
65 Cu	0.023	0.023	ppb	73.48	2000.	
66 Zn	0.0709	0.0709	ppb	53.58	2000.	
68 Zn	-0.1115	-0.1115	ppb	13.16	#VALUE!	
75 As	-0.0236	-0.0236	ppb	294.86	1000.	
82 Se	0.0121	0.0121	ppb	2435.00	1000.	
88 Sr	0.0082	0.0082	ppb	35.19	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0093	0.0093	ppb	7.14	1000.	
107 Ag	-0.0016	-0.0016	ppb	203.41	100.	
109 Ag	0.	0.	ppb	856.45	#VALUE!	
111 Cd	-0.177	-0.177	ppb	13.58	#VALUE!	
114 Cd	-0.0001	-0.0001	ppb	965.05	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0074	0.0074	ppb	279.89	1000.	
120 Sn	0.4245	0.4245	ppb	164.24	#VALUE!	
121 Sb	0.0021	0.0021	ppb	145.41	#VALUE!	
123 Sb	0.0031	0.0031	ppb	150.21	1000.	
135 Ba	0.0076	0.0076	ppb	287.58	2000.	
137 Ba	0.0237	0.0237	ppb	31.83	#VALUE!	
182 W	0.0001	0.0001	ppb	2707.90	1000.	
203 Tl	0.0063	0.0063	ppb	63.20	1000.	
205 Tl	0.	0.	ppb	80258.00	#VALUE!	
208 Pb	0.0115	0.0115	ppb	50.13	2000.	
232 Th	0.0032	0.0032	ppb	43.64	1000.	
238 U	0.0021	0.0021	ppb	43.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3185557.80	1.24	3343964.50	95.3	69.5 - 120	
45 Sc	2725153.00	0.88	2753983.00	99.0	69.5 - 120	
72 Ge	495568.22	0.08	501751.53	98.8	69.5 - 120	
159 Tb	3202511.50	0.85	3226356.00	99.3	69.5 - 120	
209 Bi	1803906.90	0.22	1827412.60	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000356

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\049SMPL.D\049SMPL.D#
Date Acquired: Mar 22 2018 07:28 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0004	-0.0004	ppb	436.05	100.	
11 B	1.249	1.249	ppb	8.32	1000.	
23 Na	-0.0928	-0.0928	ppb	205.34	200000.	
25 Mg	0.7815	0.7815	ppb	13.04	200000.	
27 Al	1.477	1.477	ppb	3.18	200000.	
28 Si	125.8	125.8	ppb	31.44	#VALUE!	
29 Si	-0.4948	-0.4948	ppb	3900.60	10000.	
39 K	-5.333	-5.333	ppb	8.93	200000.	
43 Ca	7.777	7.777	ppb	64.04	#VALUE!	
44 Ca	7.41	7.41	ppb	19.03	200000.	
51 V	-0.0193	-0.0193	ppb	155.16	1000.	
52 Cr	0.0077	0.0077	ppb	114.65	2000.	
53 Cr	0.5239	0.5239	ppb	39.99	#VALUE!	
55 Mn	0.0259	0.0259	ppb	2.43	2000.	
56 Fe	2.842	2.842	ppb	66.15	#VALUE!	
57 Fe	2.463	2.463	ppb	15.87	100000.	
59 Co	-0.0007	-0.0007	ppb	303.62	1000.	
60 Ni	0.0052	0.0052	ppb	111.43	1000.	
63 Cu	0.0309	0.0309	ppb	18.69	#VALUE!	
65 Cu	0.0053	0.0053	ppb	109.96	2000.	
66 Zn	0.0447	0.0447	ppb	29.50	2000.	
68 Zn	-0.02	-0.02	ppb	761.48	#VALUE!	
75 As	-0.1799	-0.1799	ppb	33.06	1000.	
82 Se	-0.2489	-0.2489	ppb	42.71	1000.	
88 Sr	0.0034	0.0034	ppb	141.16	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0069	0.0069	ppb	39.79	1000.	
107 Ag	-0.0026	-0.0026	ppb	13.41	100.	
109 Ag	0.0005	0.0005	ppb	145.99	#VALUE!	
111 Cd	-0.1374	-0.1374	ppb	21.89	#VALUE!	
114 Cd	0.004	0.004	ppb	50.11	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0156	0.0156	ppb	134.55	1000.	
120 Sn	0.0168	0.0168	ppb	59.17	#VALUE!	
121 Sb	-0.0017	-0.0017	ppb	245.99	#VALUE!	
123 Sb	0.0038	0.0038	ppb	156.48	1000.	
135 Ba	0.0014	0.0014	ppb	1183.30	2000.	
137 Ba	0.0289	0.0289	ppb	42.93	#VALUE!	
182 W	0.0018	0.0018	ppb	78.10	1000.	
203 Tl	0.003	0.003	ppb	109.79	1000.	
205 Tl	0.0016	0.0016	ppb	78.10	#VALUE!	
208 Pb	-0.0011	-0.0011	ppb	319.98	2000.	
232 Th	0.0011	0.0011	ppb	137.44	1000.	
238 U	0.0012	0.0012	ppb	149.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3210412.30	1.43	3343964.50	96.0	69.5 - 120	
45 Sc	2778929.50	1.05	2753983.00	100.9	69.5 - 120	
72 Ge	502995.72	0.90	501751.53	100.2	69.5 - 120	
159 Tb	3247386.50	0.44	3226356.00	100.7	69.5 - 120	
209 Bi	1825409.80	1.02	1827412.60	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000357

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\050SMPL.D\050SMPL.D#
Date Acquired: Mar 22 2018 07:32 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBSLC22IMS1
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0019	0.0004	ppb	542.33	100.	
11 B	4.9815	0.9963	ppb	7.67	1000.	
23 Na	20.89	4.178	ppb	5.37	200000.	
25 Mg	10.205	2.041	ppb	14.12	200000.	
27 Al	12.475	2.495	ppb	22.81	200000.	
28 Si	261.1	52.22	ppb	49.08	#VALUE!	
29 Si	-297.	-59.4	ppb	23.65	10000.	
39 K	-9.275	-1.855	ppb	56.82	200000.	
43 Ca	47.025	9.405	ppb	59.32	#VALUE!	
44 Ca	28.875	5.775	ppb	6.23	200000.	
51 V	0.1748	0.035	ppb	58.31	1000.	
52 Cr	1.3255	0.2651	ppb	17.23	2000.	
53 Cr	44.63	8.926	ppb	3.40	#VALUE!	
55 Mn	0.3194	0.0639	ppb	24.64	2000.	
56 Fe	3.06	0.612	ppb	181.21	#VALUE!	
57 Fe	14.38	2.876	ppb	18.17	100000.	
59 Co	-0.0051	-0.001	ppb	353.43	1000.	
60 Ni	0.428	0.0856	ppb	10.36	1000.	
63 Cu	0.2699	0.054	ppb	14.73	#VALUE!	
65 Cu	0.1319	0.0264	ppb	43.63	2000.	
66 Zn	0.1962	0.0392	ppb	116.34	2000.	
68 Zn	-0.7225	-0.1445	ppb	86.02	#VALUE!	
75 As	1.416	0.2832	ppb	45.52	1000.	
82 Se	0.5695	0.1139	ppb	118.96	1000.	
88 Sr	0.061	0.0122	ppb	18.35	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1018	0.0204	ppb	40.81	1000.	
107 Ag	-0.0118	-0.0024	ppb	112.16	100.	
109 Ag	-0.0032	-0.0006	ppb	167.62	#VALUE!	
111 Cd	-0.958	-0.1916	ppb	20.16	#VALUE!	
114 Cd	-0.0869	-0.0174	ppb	35.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	45.92	9.184	ppb	0.57	1000.	
120 Sn	45.42	9.084	ppb	0.46	#VALUE!	
121 Sb	0.0648	0.013	ppb	37.91	#VALUE!	
123 Sb	0.1102	0.022	ppb	34.78	1000.	
135 Ba	0.0354	0.0071	ppb	149.82	2000.	
137 Ba	0.1456	0.0291	ppb	19.32	#VALUE!	
182 W	0.0417	0.0083	ppb	71.27	1000.	
203 Tl	0.0179	0.0036	ppb	178.11	1000.	
205 Tl	-0.0074	-0.0015	ppb	316.33	#VALUE!	
208 Pb	0.0215	0.0043	ppb	145.63	2000.	
232 Th	0.0236	0.0047	ppb	36.11	1000.	
238 U	0.0046	0.0009	ppb	42.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3368424.00	1.56	3343964.50	100.7	69.5 - 120	
45 Sc	2865160.30	0.75	2753983.00	104.0	69.5 - 120	
72 Ge	525033.75	0.21	501751.53	104.6	69.5 - 120	
159 Tb	3360742.80	0.99	3226356.00	104.2	69.5 - 120	
209 Bi	1857504.80	0.58	1827412.60	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000358

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\051SMPL.D\051SMPL.D#
Date Acquired: Mar 22 2018 07:36 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSOLC22IMS1
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	50.15	10.03	ppb	1.41	100.	
11 B	501.5	100.3	ppb	4.46	1000.	
23 Na	7,335.	1,467.	ppb	0.66	200000.	
25 Mg	5,185.	1,037.	ppb	1.22	200000.	
27 Al	2,085.	417.	ppb	1.85	200000.	
28 Si	1,000.	200.	ppb	13.01	#VALUE!	
29 Si	372.85	74.57	ppb	27.33	10000.	
39 K	9,985.	1,997.	ppb	0.88	200000.	
43 Ca	3,003.	600.6	ppb	3.35	#VALUE!	
44 Ca	2,635.5	527.1	ppb	1.22	200000.	
51 V	520.	104.	ppb	1.43	1000.	
52 Cr	205.55	41.11	ppb	0.93	2000.	
53 Cr	243.2	48.64	ppb	1.38	#VALUE!	
55 Mn	519.	103.8	ppb	0.98	2000.	
56 Fe	1,043.5	208.7	ppb	1.67	#VALUE!	
57 Fe	1,034.	206.8	ppb	1.37	100000.	
59 Co	524.5	104.9	ppb	0.89	1000.	
60 Ni	522.	104.4	ppb	0.26	1000.	
63 Cu	260.35	52.07	ppb	0.30	#VALUE!	
65 Cu	260.35	52.07	ppb	0.42	2000.	
66 Zn	512.	102.4	ppb	0.89	2000.	
68 Zn	571.	114.2	ppb	0.19	#VALUE!	
75 As	100.55	20.11	ppb	0.93	1000.	
82 Se	99.8	19.96	ppb	1.79	1000.	
88 Sr	525.	105.	ppb	1.90	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	104.1	20.82	ppb	1.49	1000.	
107 Ag	53.1	10.62	ppb	1.64	100.	
109 Ag	52.8	10.56	ppb	2.46	#VALUE!	
111 Cd	260.75	52.15	ppb	0.78	#VALUE!	
114 Cd	260.6	52.12	ppb	0.65	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	567.5	113.5	ppb	1.80	1000.	
120 Sn	566.	113.2	ppb	2.05	#VALUE!	
121 Sb	102.95	20.59	ppb	2.15	#VALUE!	
123 Sb	103.1	20.62	ppb	1.71	1000.	
135 Ba	2,123.	424.6	ppb	1.47	2000.	
137 Ba	2,143.5	428.7	ppb	1.64	#VALUE!	
182 W	101.75	20.35	ppb	1.41	1000.	
203 Tl	105.	21.	ppb	1.37	1000.	
205 Tl	103.7	20.74	ppb	0.97	#VALUE!	
208 Pb	105.9	21.18	ppb	0.76	2000.	
232 Th	104.15	20.83	ppb	0.86	1000.	
238 U	106.35	21.27	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3602304.50	2.37	3343964.50	107.7	69.5 - 120	
45 Sc	2974328.50	1.09	2753983.00	108.0	69.5 - 120	
72 Ge	539727.25	1.31	501751.53	107.6	69.5 - 120	
159 Tb	3476596.00	1.17	3226356.00	107.8	69.5 - 120	
209 Bi	1911011.60	0.43	1827412.60	104.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000359

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\052_CCV.D\052_CCV.D#
Date Acquired: Mar 22 2018 07:40 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.2	ppb	1.68	25	100.8	
11 B	25.65	ppb	1.65	25	102.6	
23 Na	4,787.	ppb	1.00	5,000	95.74	
25 Mg	4,883.	ppb	0.74	5,000	97.66	
27 Al	495.5	ppb	0.63	500	99.1	
28 Si	544.5	ppb	0.74	500	108.9	
29 Si	415.4	ppb	1.43	500	83.08	Fail
39 K	4,940.	ppb	0.96	5,000	98.8	
43 Ca	4,949.	ppb	2.34	5,000	98.98	
44 Ca	5,138.	ppb	1.16	5,000	102.76	
51 V	25.62	ppb	0.76	25	102.48	
52 Cr	25.46	ppb	0.40	25	101.84	
53 Cr	25.12	ppb	1.06	25	100.48	
55 Mn	25.52	ppb	0.34	25	102.08	
56 Fe	5,037.	ppb	1.03	5,000	100.74	
57 Fe	5,137.	ppb	0.46	5,000	102.74	
59 Co	25.38	ppb	0.36	25	101.52	
60 Ni	25.46	ppb	0.97	25	101.84	
63 Cu	25.48	ppb	0.25	25	101.92	
65 Cu	25.4	ppb	1.16	25	101.6	
66 Zn	25.27	ppb	0.42	25	101.08	
68 Zn	24.91	ppb	2.25	25	99.64	
75 As	25.08	ppb	0.22	25	100.32	
82 Se	24.76	ppb	1.54	25	99.04	
88 Sr	25.5	ppb	0.53	25	102	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.85	ppb	0.92	25	103.4	
107 Ag	25.82	ppb	0.59	25	103.28	
109 Ag	25.49	ppb	0.56	25	101.96	
111 Cd	25.3	ppb	0.45	25	101.2	
114 Cd	25.55	ppb	0.44	25	102.2	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.57	ppb	1.59	25	102.28	
120 Sn	25.69	ppb	0.71	25	102.76	
121 Sb	25.25	ppb	0.15	25	101	
123 Sb	25.44	ppb	0.86	25	101.76	
135 Ba	25.3	ppb	1.23	25	101.2	
137 Ba	25.68	ppb	0.50	25	102.72	
182 W	24.9	ppb	0.50	25	99.6	
203 Tl	25.48	ppb	1.38	25	101.92	
205 Tl	25.1	ppb	0.80	25	100.4	
208 Pb	25.01	ppb	1.07	25	100.04	
232 Th	25.03	ppb	1.07	25	100.12	
238 U	25.25	ppb	1.60	25	101	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3541676.50	0.72	3343964.50	105.9	80 - 120.4	
45 Sc	3060876.80	0.32	2753983.00	111.1	80 - 120.4	
72 Ge	543188.06	0.90	501751.53	108.3	80 - 120.4	
159 Tb	3539177.80	0.44	3226356.00	109.7	80 - 120.4	
209 Bi	1963371.60	1.00	1827412.60	107.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000360

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\053_CCB.D\053_CCB.D#
Date Acquired: Mar 22 2018 07:44 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0005	ppb	112.81	1.00	
11 B	1.429	ppb	6.53	1.00	
23 Na	-0.4837	ppb	23.84	1.00	
25 Mg	0.1861	ppb	24.21	1.00	
27 Al	0.3697	ppb	18.06	1.00	
28 Si	151.4	ppb	34.97	1.00	
29 Si	33.51	ppb	25.72	1.00	
39 K	-4.497	ppb	6.20	1.00	
43 Ca	0.5944	ppb	454.58	1.00	
44 Ca	5.568	ppb	27.12	1.00	
51 V	-0.0124	ppb	154.94	1.00	
52 Cr	0.0056	ppb	67.99	1.00	
53 Cr	0.1416	ppb	83.76	1.00	
55 Mn	0.0109	ppb	14.34	1.00	
56 Fe	4.916	ppb	3.89	1.00	
57 Fe	3.735	ppb	37.64	1.00	
59 Co	-0.0009	ppb	312.91	1.00	
60 Ni	0.0088	ppb	89.90	1.00	
63 Cu	-0.0009	ppb	405.74	1.00	
65 Cu	0.0007	ppb	1266.90	1.00	
66 Zn	0.0926	ppb	60.24	1.00	
68 Zn	0.0597	ppb	85.72	1.00	
75 As	-0.0323	ppb	640.25	1.00	
82 Se	0.1497	ppb	140.08	1.00	
88 Sr	0.0001	ppb	3805.80	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0141	ppb	40.50	1.00	
107 Ag	-0.0016	ppb	68.61	1.00	
109 Ag	0.0005	ppb	249.31	1.00	
111 Cd	-0.1699	ppb	8.73	1.00	
114 Cd	0.0014	ppb	222.00	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0272	ppb	27.60	1.00	
120 Sn	0.0364	ppb	1.33	1.00	
121 Sb	0.0074	ppb	7.19	1.00	
123 Sb	0.0176	ppb	13.64	1.00	
135 Ba	0.0135	ppb	33.61	1.00	
137 Ba	0.0179	ppb	25.40	1.00	
182 W	0.0195	ppb	11.44	1.00	
203 Tl	0.0099	ppb	81.70	1.00	
205 Tl	0.0033	ppb	40.93	1.00	
208 Pb	0.0071	ppb	27.05	1.00	
232 Th	0.0123	ppb	31.07	1.00	
238 U	0.0042	ppb	30.31	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3211205.30	0.58	3343964.50	96.0	79.5 - 120	
45 Sc	2733173.50	0.84	2753983.00	99.2	79.5 - 120	
72 Ge	499395.22	0.70	501751.53	99.5	79.5 - 120	
159 Tb	3190497.30	0.48	3226356.00	98.9	79.5 - 120	
209 Bi	1797193.30	0.52	1827412.60	98.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000361

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\054SMPL.D\054SMPL.D#
Date Acquired: Mar 22 2018 07:48 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-001
Misc Info:
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.42	2.484	ppb	3.45	100.	
11 B	159.05	31.81	ppb	3.43	1000.	
23 Na	8,035.	1,607.	ppb	1.35	200000.	
25 Mg	116,400.	23,280.	ppb	1.18	200000.	
27 Al	256,300.	51,260.	ppb	0.28	200000.	
28 Si	9,255.	1,851.	ppb	3.69	#VALUE!	
29 Si	10,900.	2,180.	ppb	9.22	10000.	
39 K	65,650.	13,130.	ppb	0.35	200000.	
43 Ca	227,600.	45,520.	ppb	1.54	#VALUE!	
44 Ca	216,300.	43,260.	ppb	0.91	200000.	
51 V	487.	97.4	ppb	0.63	1000.	
52 Cr	254.5	50.9	ppb	0.51	2000.	
53 Cr	283.65	56.73	ppb	1.11	#VALUE!	
55 Mn	1,981.5	396.3	ppb	0.29	2000.	
56 Fe	235,500.	47,100.	ppb	0.37	#VALUE!	
57 Fe	227,450.	45,490.	ppb	0.54	100000.	
59 Co	63.1	12.62	ppb	0.66	1000.	
60 Ni	161.55	32.31	ppb	1.15	1000.	
63 Cu	149.35	29.87	ppb	0.89	#VALUE!	
65 Cu	151.55	30.31	ppb	1.10	2000.	
66 Zn	638.5	127.7	ppb	0.87	2000.	
68 Zn	688.5	137.7	ppb	0.62	#VALUE!	
75 As	33.895	6.779	ppb	3.75	1000.	
82 Se	6.4	1.28	ppb	28.66	1000.	
88 Sr	881.5	176.3	ppb	1.54	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.924	0.3848	ppb	4.80	1000.	
107 Ag	1.144	0.2288	ppb	6.11	100.	
109 Ag	0.9145	0.1829	ppb	2.26	#VALUE!	
111 Cd	3.494	0.6988	ppb	4.18	#VALUE!	
114 Cd	-0.554	-0.1108	ppb	23.76	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.15	10.43	ppb	2.04	1000.	
120 Sn	52.85	10.57	ppb	0.54	#VALUE!	
121 Sb	2.4325	0.4865	ppb	2.03	#VALUE!	
123 Sb	2.52	0.504	ppb	3.22	1000.	
135 Ba	2,068.	413.6	ppb	1.36	2000.	
137 Ba	2,071.	414.2	ppb	0.97	#VALUE!	
182 W	0.6555	0.1311	ppb	4.38	1000.	
203 Tl	3.86	0.772	ppb	1.59	1000.	
205 Tl	3.969	0.7938	ppb	0.74	#VALUE!	
208 Pb	143.8	28.76	ppb	0.96	2000.	
232 Th	119.3	23.86	ppb	1.15	1000.	
238 U	13.375	2.675	ppb	1.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3542707.00	0.48	3343964.50	105.9	69.5 - 120	
45 Sc	3189339.80	0.06	2753983.00	115.8	69.5 - 120	
72 Ge	562392.44	0.48	501751.53	112.1	69.5 - 120	
159 Tb	3589927.80	0.79	3226356.00	111.3	69.5 - 120	
209 Bi	1913655.40	0.80	1827412.60	104.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000362

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\055SMPL.D\055SMPL.D#
Date Acquired: Mar 22 2018 07:53 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-002
Misc Info:
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.1	1.42	ppb	2.78	100.	
11 B	104.05	20.81	ppb	0.79	1000.	
23 Na	2,961.5	592.3	ppb	1.72	200000.	
25 Mg	72,250.	14,450.	ppb	0.96	200000.	
27 Al	150,350.	30,070.	ppb	0.68	200000.	
28 Si	8,905.	1,781.	ppb	7.28	#VALUE!	
29 Si	10,055.	2,011.	ppb	10.50	10000.	
39 K	36,290.	7,258.	ppb	0.60	200000.	
43 Ca	411,350.	82,270.	ppb	0.96	#VALUE!	
44 Ca	397,850.	79,570.	ppb	0.47	200000.	
51 V	294.1	58.82	ppb	0.99	1000.	
52 Cr	148.75	29.75	ppb	0.32	2000.	
53 Cr	170.55	34.11	ppb	1.72	#VALUE!	
55 Mn	2,756.5	551.3	ppb	0.41	2000.	
56 Fe	142,050.	28,410.	ppb	0.33	#VALUE!	
57 Fe	137,250.	27,450.	ppb	1.35	100000.	
59 Co	42.48	8.496	ppb	0.11	1000.	
60 Ni	107.35	21.47	ppb	0.27	1000.	
63 Cu	86.05	17.21	ppb	1.04	#VALUE!	
65 Cu	88.8	17.76	ppb	1.19	2000.	
66 Zn	365.55	73.11	ppb	0.53	2000.	
68 Zn	381.9	76.38	ppb	1.79	#VALUE!	
75 As	23.605	4.721	ppb	2.21	1000.	
82 Se	3.2815	0.6563	ppb	47.63	1000.	
88 Sr	1,097.5	219.5	ppb	2.05	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.3765	0.8753	ppb	3.80	1000.	
107 Ag	0.633	0.1266	ppb	7.61	100.	
109 Ag	0.4922	0.0984	ppb	8.68	#VALUE!	
111 Cd	3.1145	0.6229	ppb	2.13	#VALUE!	
114 Cd	0.8345	0.1669	ppb	11.49	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.825	9.765	ppb	1.51	1000.	
120 Sn	48.295	9.659	ppb	1.43	#VALUE!	
121 Sb	1.72	0.344	ppb	6.06	#VALUE!	
123 Sb	1.8355	0.3671	ppb	5.91	1000.	
135 Ba	1,077.5	215.5	ppb	1.34	2000.	
137 Ba	1,090.	218.	ppb	1.47	#VALUE!	
182 W	0.6075	0.1215	ppb	8.53	1000.	
203 Tl	2.3815	0.4763	ppb	6.10	1000.	
205 Tl	2.503	0.5006	ppb	1.66	#VALUE!	
208 Pb	87.5	17.5	ppb	0.85	2000.	
232 Th	69.9	13.98	ppb	0.87	1000.	
238 U	10.1	2.02	ppb	1.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3429148.50	2.34	3343964.50	102.5	69.5 - 120	
45 Sc	3079274.80	1.44	2753983.00	111.8	69.5 - 120	
72 Ge	557701.63	1.30	501751.53	111.2	69.5 - 120	
159 Tb	3693967.50	0.85	3226356.00	114.5	69.5 - 120	
209 Bi	1951037.60	0.59	1827412.60	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000363

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\056SMPL.D\056SMPL.D#
Date Acquired: Mar 22 2018 07:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-003
Misc Info:
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.665	1.733	ppb	2.59	100.	
11 B	114.65	22.93	ppb	3.58	1000.	
23 Na	18,360.	3,672.	ppb	0.30	200000.	
25 Mg	97,450.	19,490.	ppb	0.51	200000.	
27 Al	180,400.	36,080.	ppb	1.51	200000.	
28 Si	4,563.5	912.7	ppb	1.07	#VALUE!	
29 Si	4,942.5	988.5	ppb	14.91	10000.	
39 K	49,405.	9,881.	ppb	0.96	200000.	
43 Ca	644,500.	128,900.	ppb	0.63	#VALUE!	
44 Ca	630,000.	126,000.	ppb	0.67	200000.	
51 V	384.4	76.88	ppb	1.22	1000.	
52 Cr	166.85	33.37	ppb	0.55	2000.	
53 Cr	187.7	37.54	ppb	0.61	#VALUE!	
55 Mn	3,627.	725.4	ppb	0.48	2000.	
56 Fe	191,700.	38,340.	ppb	0.45	#VALUE!	
57 Fe	187,550.	37,510.	ppb	0.88	100000.	
59 Co	80.15	16.03	ppb	0.52	1000.	
60 Ni	167.1	33.42	ppb	0.57	1000.	
63 Cu	120.8	24.16	ppb	0.18	#VALUE!	
65 Cu	122.65	24.53	ppb	0.68	2000.	
66 Zn	455.2	91.04	ppb	1.14	2000.	
68 Zn	569.5	113.9	ppb	0.99	#VALUE!	
75 As	92.65	18.53	ppb	2.21	1000.	
82 Se	4.201	0.8402	ppb	50.21	1000.	
88 Sr	1,534.5	306.9	ppb	1.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	16.285	3.257	ppb	1.20	1000.	
107 Ag	0.8425	0.1685	ppb	9.66	100.	
109 Ag	0.659	0.1318	ppb	9.85	#VALUE!	
111 Cd	3.0535	0.6107	ppb	1.69	#VALUE!	
114 Cd	-0.131	-0.0262	ppb	85.92	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.32	9.664	ppb	1.42	1000.	
120 Sn	48.32	9.664	ppb	1.24	#VALUE!	
121 Sb	2.754	0.5508	ppb	1.57	#VALUE!	
123 Sb	2.903	0.5806	ppb	2.00	1000.	
135 Ba	3,744.5	748.9	ppb	0.99	2000.	
137 Ba	3,707.	741.4	ppb	0.93	#VALUE!	
182 W	0.963	0.1926	ppb	8.77	1000.	
203 Tl	3.2315	0.6463	ppb	4.95	1000.	
205 Tl	3.1785	0.6357	ppb	1.10	#VALUE!	
208 Pb	130.85	26.17	ppb	0.69	2000.	
232 Th	81.75	16.35	ppb	1.49	1000.	
238 U	14.97	2.994	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3483523.00	2.41	3343964.50	104.2	69.5 - 120	
45 Sc	3047210.00	0.99	2753983.00	110.6	69.5 - 120	
72 Ge	552441.56	0.40	501751.53	110.1	69.5 - 120	
159 Tb	3697232.00	0.76	3226356.00	114.6	69.5 - 120	
209 Bi	1952940.60	1.06	1827412.60	106.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000364

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\057SMPL.D\057SMPL.D#
Date Acquired: Mar 22 2018 08:01 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-004
Misc Info:
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.155	1.631	ppb	3.14	100.	
11 B	103.75	20.75	ppb	4.25	1000.	
23 Na	6,315.	1,263.	ppb	1.99	200000.	
25 Mg	80,800.	16,160.	ppb	2.17	200000.	
27 Al	166,600.	33,320.	ppb	1.05	200000.	
28 Si	7,590.	1,518.	ppb	11.96	#VALUE!	
29 Si	7,485.	1,497.	ppb	10.27	10000.	
39 K	41,800.	8,360.	ppb	1.45	200000.	
43 Ca	405,550.	81,110.	ppb	1.62	#VALUE!	
44 Ca	389,600.	77,920.	ppb	1.23	200000.	
51 V	315.2	63.04	ppb	1.08	1000.	
52 Cr	160.8	32.16	ppb	0.65	2000.	
53 Cr	179.6	35.92	ppb	0.71	#VALUE!	
55 Mn	3,407.5	681.5	ppb	0.25	2000.	
56 Fe	170,200.	34,040.	ppb	0.33	#VALUE!	
57 Fe	166,600.	33,320.	ppb	0.13	100000.	
59 Co	73.15	14.63	ppb	1.40	1000.	
60 Ni	147.45	29.49	ppb	0.94	1000.	
63 Cu	102.8	20.56	ppb	1.35	#VALUE!	
65 Cu	104.2	20.84	ppb	1.55	2000.	
66 Zn	437.9	87.58	ppb	0.64	2000.	
68 Zn	502.	100.4	ppb	0.66	#VALUE!	
75 As	57.	11.4	ppb	2.75	1000.	
82 Se	4.3805	0.8761	ppb	29.40	1000.	
88 Sr	1,166.	233.2	ppb	1.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.06	2.012	ppb	1.40	1000.	
107 Ag	0.797	0.1594	ppb	11.52	100.	
109 Ag	0.656	0.1312	ppb	8.86	#VALUE!	
111 Cd	3.0555	0.6111	ppb	5.32	#VALUE!	
114 Cd	0.1168	0.0234	ppb	67.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.95	10.19	ppb	1.44	1000.	
120 Sn	51.45	10.29	ppb	0.83	#VALUE!	
121 Sb	2.3205	0.4641	ppb	5.05	#VALUE!	
123 Sb	2.1545	0.4309	ppb	1.70	1000.	
135 Ba	2,351.5	470.3	ppb	0.70	2000.	
137 Ba	2,364.5	472.9	ppb	0.61	#VALUE!	
182 W	0.6925	0.1385	ppb	12.61	1000.	
203 Tl	3.114	0.6228	ppb	2.00	1000.	
205 Tl	3.0855	0.6171	ppb	1.69	#VALUE!	
208 Pb	110.75	22.15	ppb	1.42	2000.	
232 Th	77.35	15.47	ppb	1.87	1000.	
238 U	11.04	2.208	ppb	2.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3424630.30	2.34	3343964.50	102.4	69.5 - 120	
45 Sc	3034224.00	0.74	2753983.00	110.2	69.5 - 120	
72 Ge	555874.94	0.25	501751.53	110.8	69.5 - 120	
159 Tb	3761575.80	0.68	3226356.00	116.6	69.5 - 120	
209 Bi	1975415.10	1.17	1827412.60	108.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000365

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\058SMPL.D\058SMPL.D#
Date Acquired: Mar 22 2018 08:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-005
Misc Info:
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.385	1.877	ppb	1.43	100.	
11 B	144.4	28.88	ppb	2.62	1000.	
23 Na	4,135.5	827.1	ppb	2.00	200000.	
25 Mg	102,100.	20,420.	ppb	0.32	200000.	
27 Al	210,100.	42,020.	ppb	0.40	200000.	
28 Si	9,170.	1,834.	ppb	9.89	#VALUE!	
29 Si	9,200.	1,840.	ppb	12.63	10000.	
39 K	53,950.	10,790.	ppb	1.00	200000.	
43 Ca	773,000.	154,600.	ppb	1.03	#VALUE!	
44 Ca	763,000.	152,600.	ppb	0.86	200000.	
51 V	416.	83.2	ppb	0.38	1000.	
52 Cr	196.35	39.27	ppb	0.39	2000.	
53 Cr	220.1	44.02	ppb	0.14	#VALUE!	
55 Mn	2,612.	522.4	ppb	0.49	2000.	
56 Fe	208,600.	41,720.	ppb	0.68	#VALUE!	
57 Fe	201,850.	40,370.	ppb	0.30	100000.	
59 Co	49.425	9.885	ppb	0.37	1000.	
60 Ni	130.95	26.19	ppb	0.56	1000.	
63 Cu	130.45	26.09	ppb	0.21	#VALUE!	
65 Cu	132.7	26.54	ppb	0.53	2000.	
66 Zn	464.65	92.93	ppb	0.52	2000.	
68 Zn	493.6	98.72	ppb	0.53	#VALUE!	
75 As	27.67	5.534	ppb	1.02	1000.	
82 Se	6.21	1.242	ppb	26.42	1000.	
88 Sr	1,811.5	362.3	ppb	0.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.011	0.6022	ppb	1.19	1000.	
107 Ag	0.828	0.1656	ppb	5.90	100.	
109 Ag	0.6765	0.1353	ppb	2.88	#VALUE!	
111 Cd	4.6035	0.9207	ppb	2.10	#VALUE!	
114 Cd	0.633	0.1266	ppb	11.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	53.	10.6	ppb	0.85	1000.	
120 Sn	53.3	10.66	ppb	1.47	#VALUE!	
121 Sb	2.471	0.4942	ppb	7.04	#VALUE!	
123 Sb	2.4535	0.4907	ppb	4.65	1000.	
135 Ba	1,445.5	289.1	ppb	1.16	2000.	
137 Ba	1,448.5	289.7	ppb	0.46	#VALUE!	
182 W	0.634	0.1268	ppb	9.94	1000.	
203 Tl	3.321	0.6642	ppb	1.01	1000.	
205 Tl	3.253	0.6506	ppb	2.39	#VALUE!	
208 Pb	127.75	25.55	ppb	0.20	2000.	
232 Th	91.1	18.22	ppb	0.73	1000.	
238 U	15.08	3.016	ppb	0.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3472025.00	1.30	3343964.50	103.8	69.5 - 120	
45 Sc	3018117.00	0.61	2753983.00	109.6	69.5 - 120	
72 Ge	548266.63	0.51	501751.53	109.3	69.5 - 120	
159 Tb	3670282.80	0.45	3226356.00	113.8	69.5 - 120	
209 Bi	1938086.90	0.17	1827412.60	106.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000366

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\059SMPL.D\059SMPL.D#
Date Acquired: Mar 22 2018 08:10 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-006
Misc Info:
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.895	1.979	ppb	0.43	100.	
11 B	135.95	27.19	ppb	2.40	1000.	
23 Na	7,435.	1,487.	ppb	0.89	200000.	
25 Mg	95,550.	19,110.	ppb	1.13	200000.	
27 Al	205,000.	41,000.	ppb	1.11	200000.	
28 Si	5,475.	1,095.	ppb	8.88	#VALUE!	
29 Si	5,560.	1,112.	ppb	17.09	10000.	
39 K	62,250.	12,450.	ppb	0.91	200000.	
43 Ca	392,250.	78,450.	ppb	0.61	#VALUE!	
44 Ca	378,650.	75,730.	ppb	1.05	200000.	
51 V	420.85	84.17	ppb	0.43	1000.	
52 Cr	198.4	39.68	ppb	0.58	2000.	
53 Cr	218.65	43.73	ppb	0.95	#VALUE!	
55 Mn	1,639.	327.8	ppb	0.80	2000.	
56 Fe	197,250.	39,450.	ppb	1.64	#VALUE!	
57 Fe	191,350.	38,270.	ppb	0.89	100000.	
59 Co	49.755	9.951	ppb	1.46	1000.	
60 Ni	134.	26.8	ppb	0.81	1000.	
63 Cu	118.55	23.71	ppb	0.31	#VALUE!	
65 Cu	119.95	23.99	ppb	0.49	2000.	
66 Zn	525.5	105.1	ppb	0.75	2000.	
68 Zn	563.	112.6	ppb	0.35	#VALUE!	
75 As	40.275	8.055	ppb	1.49	1000.	
82 Se	4.5685	0.9137	ppb	22.74	1000.	
88 Sr	1,199.	239.8	ppb	0.98	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.164	0.6328	ppb	2.13	1000.	
107 Ag	0.961	0.1922	ppb	3.64	100.	
109 Ag	0.7075	0.1415	ppb	6.64	#VALUE!	
111 Cd	3.9135	0.7827	ppb	1.92	#VALUE!	
114 Cd	0.4982	0.0996	ppb	13.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.25	10.25	ppb	0.97	1000.	
120 Sn	51.45	10.29	ppb	1.93	#VALUE!	
121 Sb	2.315	0.463	ppb	2.67	#VALUE!	
123 Sb	2.365	0.473	ppb	2.28	1000.	
135 Ba	1,823.5	364.7	ppb	1.38	2000.	
137 Ba	1,832.	366.4	ppb	1.14	#VALUE!	
182 W	0.6055	0.1211	ppb	12.22	1000.	
203 Tl	3.487	0.6974	ppb	3.18	1000.	
205 Tl	3.391	0.6782	ppb	0.88	#VALUE!	
208 Pb	123.6	24.72	ppb	0.82	2000.	
232 Th	95.65	19.13	ppb	0.93	1000.	
238 U	16.36	3.272	ppb	1.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3375364.80	0.34	3343964.50	100.9	69.5 - 120	
45 Sc	3021171.00	0.36	2753983.00	109.7	69.5 - 120	
72 Ge	546658.50	0.62	501751.53	109.0	69.5 - 120	
159 Tb	3675208.30	1.19	3226356.00	113.9	69.5 - 120	
209 Bi	1929417.60	0.16	1827412.60	105.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000367

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\060SMPL.D\060SMPL.D#
Date Acquired: Mar 22 2018 08:14 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-007
Misc Info:
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.25	1.85	ppb	1.35	100.	
11 B	140.95	28.19	ppb	3.77	1000.	
23 Na	4,003.5	800.7	ppb	1.51	200000.	
25 Mg	106,650.	21,330.	ppb	0.46	200000.	
27 Al	201,750.	40,350.	ppb	0.74	200000.	
28 Si	7,440.	1,488.	ppb	5.98	#VALUE!	
29 Si	8,900.	1,780.	ppb	17.70	10000.	
39 K	49,730.	9,946.	ppb	1.84	200000.	
43 Ca	948,500.	189,700.	ppb	1.54	#VALUE!	
44 Ca	937,500.	187,500.	ppb	2.09	200000.	
51 V	427.5	85.5	ppb	0.98	1000.	
52 Cr	196.4	39.28	ppb	0.59	2000.	
53 Cr	220.75	44.15	ppb	0.93	#VALUE!	
55 Mn	2,878.5	575.7	ppb	0.62	2000.	
56 Fe	178,300.	35,660.	ppb	1.12	#VALUE!	
57 Fe	174,300.	34,860.	ppb	0.96	100000.	
59 Co	63.25	12.65	ppb	2.10	1000.	
60 Ni	165.55	33.11	ppb	1.03	1000.	
63 Cu	131.6	26.32	ppb	1.03	#VALUE!	
65 Cu	134.65	26.93	ppb	0.75	2000.	
66 Zn	498.65	99.73	ppb	0.58	2000.	
68 Zn	593.5	118.7	ppb	1.17	#VALUE!	
75 As	41.9	8.38	ppb	0.81	1000.	
82 Se	5.29	1.058	ppb	29.10	1000.	
88 Sr	2,540.5	508.1	ppb	2.04	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.285	1.257	ppb	1.26	1000.	
107 Ag	0.997	0.1994	ppb	7.10	100.	
109 Ag	0.7495	0.1499	ppb	5.89	#VALUE!	
111 Cd	5.45	1.09	ppb	4.83	#VALUE!	
114 Cd	1.513	0.3026	ppb	8.58	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.7	10.54	ppb	1.66	1000.	
120 Sn	52.5	10.5	ppb	0.43	#VALUE!	
121 Sb	2.5045	0.5009	ppb	4.51	#VALUE!	
123 Sb	2.619	0.5238	ppb	2.36	1000.	
135 Ba	3,342.5	668.5	ppb	0.35	2000.	
137 Ba	3,382.5	676.5	ppb	0.20	#VALUE!	
182 W	0.8405	0.1681	ppb	3.72	1000.	
203 Tl	3.747	0.7494	ppb	2.80	1000.	
205 Tl	3.6845	0.7369	ppb	3.13	#VALUE!	
208 Pb	134.8	26.96	ppb	0.47	2000.	
232 Th	87.9	17.58	ppb	0.41	1000.	
238 U	17.77	3.554	ppb	0.08	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3364785.80	0.83	3343964.50	100.6	69.5 - 120	
45 Sc	2988292.30	0.87	2753983.00	108.5	69.5 - 120	
72 Ge	536352.25	0.55	501751.53	106.9	69.5 - 120	
159 Tb	3649001.50	0.48	3226356.00	113.1	69.5 - 120	
209 Bi	1879490.60	0.31	1827412.60	102.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000368

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\061SMPL.D\061SMPL.D#
Date Acquired: Mar 22 2018 08:18 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-008
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.58	1.516	ppb	1.54	100.	
11 B	144.2	28.84	ppb	3.52	1000.	
23 Na	1,894.5	378.9	ppb	2.54	200000.	
25 Mg	69,100.	13,820.	ppb	2.63	200000.	
27 Al	158,100.	31,620.	ppb	1.83	200000.	
28 Si	8,460.	1,692.	ppb	11.16	#VALUE!	
29 Si	9,720.	1,944.	ppb	11.03	10000.	
39 K	55,900.	11,180.	ppb	1.94	200000.	
43 Ca	59,600.	11,920.	ppb	1.92	#VALUE!	
44 Ca	59,350.	11,870.	ppb	1.72	200000.	
51 V	261.2	52.24	ppb	0.95	1000.	
52 Cr	150.55	30.11	ppb	0.85	2000.	
53 Cr	173.05	34.61	ppb	2.02	#VALUE!	
55 Mn	3,562.5	712.5	ppb	0.59	2000.	
56 Fe	139,350.	27,870.	ppb	1.35	#VALUE!	
57 Fe	134,900.	26,980.	ppb	0.46	100000.	
59 Co	59.55	11.91	ppb	0.48	1000.	
60 Ni	117.3	23.46	ppb	2.21	1000.	
63 Cu	117.95	23.59	ppb	0.10	#VALUE!	
65 Cu	119.6	23.92	ppb	0.64	2000.	
66 Zn	511.	102.2	ppb	0.12	2000.	
68 Zn	544.	108.8	ppb	0.99	#VALUE!	
75 As	29.255	5.851	ppb	2.32	1000.	
82 Se	7.94	1.588	ppb	8.42	1000.	
88 Sr	563.5	112.7	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.444	0.6888	ppb	2.18	1000.	
107 Ag	0.8325	0.1665	ppb	10.40	100.	
109 Ag	0.631	0.1262	ppb	9.24	#VALUE!	
111 Cd	4.603	0.9206	ppb	8.63	#VALUE!	
114 Cd	2.3805	0.4761	ppb	5.31	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.3	10.26	ppb	0.96	1000.	
120 Sn	51.	10.2	ppb	1.70	#VALUE!	
121 Sb	1.654	0.3308	ppb	3.99	#VALUE!	
123 Sb	1.7165	0.3433	ppb	5.35	1000.	
135 Ba	1,787.	357.4	ppb	0.40	2000.	
137 Ba	1,806.	361.2	ppb	0.80	#VALUE!	
182 W	0.796	0.1592	ppb	10.10	1000.	
203 Tl	2.969	0.5938	ppb	1.30	1000.	
205 Tl	2.725	0.545	ppb	5.60	#VALUE!	
208 Pb	146.2	29.24	ppb	0.41	2000.	
232 Th	87.95	17.59	ppb	1.07	1000.	
238 U	13.295	2.659	ppb	1.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3421946.30	1.90	3343964.50	102.3	69.5 - 120	
45 Sc	3039657.00	1.84	2753983.00	110.4	69.5 - 120	
72 Ge	551093.56	0.74	501751.53	109.8	69.5 - 120	
159 Tb	3661066.50	0.51	3226356.00	113.5	69.5 - 120	
209 Bi	1960807.60	1.01	1827412.60	107.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000369

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\062SMPL.D\062SMPL.D#
Date Acquired: Mar 22 2018 08:23 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-008L
Misc Info:
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.95	0.318	ppb	3.08	100.	
11 B	167.3	6.692	ppb	3.80	1000.	
23 Na	2,041.25	81.65	ppb	1.61	200000.	
25 Mg	75,125.	3,005.	ppb	1.26	200000.	
27 Al	166,875.	6,675.	ppb	0.75	200000.	
28 Si	8,940.	357.6	ppb	11.72	#VALUE!	
29 Si	5,462.5	218.5	ppb	6.78	10000.	
39 K	58,725.	2,349.	ppb	2.30	200000.	
43 Ca	63,900.	2,556.	ppb	2.38	#VALUE!	
44 Ca	63,125.	2,525.	ppb	1.85	200000.	
51 V	272.25	10.89	ppb	0.72	1000.	
52 Cr	157.425	6.297	ppb	0.88	2000.	
53 Cr	172.075	6.883	ppb	2.32	#VALUE!	
55 Mn	3,812.5	152.5	ppb	1.00	2000.	
56 Fe	146,725.	5,869.	ppb	0.94	#VALUE!	
57 Fe	149,050.	5,962.	ppb	0.54	100000.	
59 Co	63.85	2.554	ppb	0.55	1000.	
60 Ni	127.9	5.116	ppb	1.90	1000.	
63 Cu	127.65	5.106	ppb	0.89	#VALUE!	
65 Cu	130.1	5.204	ppb	1.61	2000.	
66 Zn	563.75	22.55	ppb	1.27	2000.	
68 Zn	596.25	23.85	ppb	0.66	#VALUE!	
75 As	24.965	0.9986	ppb	6.24	1000.	
82 Se	10.88	0.4352	ppb	102.76	1000.	
88 Sr	583.25	23.33	ppb	1.21	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.2925	0.1317	ppb	4.59	1000.	
107 Ag	0.8578	0.0343	ppb	15.78	100.	
109 Ag	0.6255	0.025	ppb	9.67	#VALUE!	
111 Cd	1.5108	0.0604	ppb	21.10	#VALUE!	
114 Cd	2.4403	0.0976	ppb	7.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	56.325	2.253	ppb	1.94	1000.	
120 Sn	56.275	2.251	ppb	2.12	#VALUE!	
121 Sb	1.595	0.0638	ppb	2.33	#VALUE!	
123 Sb	1.8955	0.0758	ppb	21.82	1000.	
135 Ba	1,857.75	74.31	ppb	0.31	2000.	
137 Ba	1,861.25	74.45	ppb	0.49	#VALUE!	
182 W	0.688	0.0275	ppb	20.90	1000.	
203 Tl	2.5625	0.1025	ppb	8.28	1000.	
205 Tl	2.755	0.1102	ppb	5.16	#VALUE!	
208 Pb	147.35	5.894	ppb	0.86	2000.	
232 Th	86.45	3.458	ppb	0.33	1000.	
238 U	13.04	0.5216	ppb	5.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3413129.00	1.35	3343964.50	102.1	69.5 - 120	
45 Sc	2960200.80	1.57	2753983.00	107.5	69.5 - 120	
72 Ge	537170.75	1.14	501751.53	107.1	69.5 - 120	
159 Tb	3530708.80	0.61	3226356.00	109.4	69.5 - 120	
209 Bi	1954411.30	0.80	1827412.60	106.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000370

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\063SMPL.D\063SMPL.D#
Date Acquired: Mar 22 2018 08:27 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0011	0.0011	ppb	31.08	100.	
11 B	0.7676	0.7676	ppb	6.75	1000.	
23 Na	-1.302	-1.302	ppb	9.09	200000.	
25 Mg	0.4091	0.4091	ppb	33.17	200000.	
27 Al	1.254	1.254	ppb	8.25	200000.	
28 Si	108.3	108.3	ppb	28.55	#VALUE!	
29 Si	-24.96	-24.96	ppb	132.13	10000.	
39 K	-7.546	-7.546	ppb	6.48	200000.	
43 Ca	7.605	7.605	ppb	70.39	#VALUE!	
44 Ca	4.765	4.765	ppb	26.30	200000.	
51 V	0.0252	0.0252	ppb	30.44	1000.	
52 Cr	0.003	0.003	ppb	315.42	2000.	
53 Cr	-0.4617	-0.4617	ppb	9.21	#VALUE!	
55 Mn	0.0127	0.0127	ppb	29.02	2000.	
56 Fe	9.631	9.631	ppb	41.11	#VALUE!	
57 Fe	-0.3969	-0.3969	ppb	1268.60	100000.	
59 Co	-0.0012	-0.0012	ppb	164.11	1000.	
60 Ni	-0.0022	-0.0022	ppb	294.58	1000.	
63 Cu	0.0072	0.0072	ppb	128.31	#VALUE!	
65 Cu	0.0066	0.0066	ppb	210.53	2000.	
66 Zn	-0.0182	-0.0182	ppb	194.66	2000.	
68 Zn	0.0613	0.0613	ppb	72.77	#VALUE!	
75 As	-0.1048	-0.1048	ppb	72.27	1000.	
82 Se	-0.0936	-0.0936	ppb	201.88	1000.	
88 Sr	0.0031	0.0031	ppb	149.98	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0037	0.0037	ppb	59.23	1000.	
107 Ag	-0.0014	-0.0014	ppb	354.76	100.	
109 Ag	-0.001	-0.001	ppb	130.93	#VALUE!	
111 Cd	-0.151	-0.151	ppb	10.41	#VALUE!	
114 Cd	0.0002	0.0002	ppb	176.23	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0137	0.0137	ppb	156.36	1000.	
120 Sn	0.0159	0.0159	ppb	52.21	#VALUE!	
121 Sb	-0.0023	-0.0023	ppb	48.40	#VALUE!	
123 Sb	0.0047	0.0047	ppb	110.82	1000.	
135 Ba	0.	0.	ppb	30894.00	2000.	
137 Ba	0.0242	0.0242	ppb	66.86	#VALUE!	
182 W	0.0007	0.0007	ppb	1077.80	1000.	
203 Tl	-0.0003	-0.0003	ppb	995.46	1000.	
205 Tl	-0.0002	-0.0002	ppb	2518.60	#VALUE!	
208 Pb	0.0009	0.0009	ppb	197.50	2000.	
232 Th	0.0028	0.0028	ppb	48.07	1000.	
238 U	0.	0.	ppb	4720.30	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3188717.30	0.57	3343964.50	95.4	69.5 - 120	
45 Sc	2735692.00	0.09	2753983.00	99.3	69.5 - 120	
72 Ge	499872.78	0.57	501751.53	99.6	69.5 - 120	
159 Tb	3232265.00	0.26	3226356.00	100.2	69.5 - 120	
209 Bi	1804171.00	0.67	1827412.60	98.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000371

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\064_CCV.D\064_CCV.D#
Date Acquired: Mar 22 2018 08:31 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.64	ppb	0.99	25	98.56	
11 B	24.34	ppb	3.05	25	97.36	
23 Na	4,750.	ppb	1.31	5,000	95	
25 Mg	4,817.	ppb	1.44	5,000	96.34	
27 Al	494.5	ppb	0.73	500	98.9	
28 Si	558.5	ppb	6.74	500	111.7	
29 Si	438.7	ppb	4.60	500	87.74	Fail
39 K	4,939.	ppb	1.96	5,000	98.78	
43 Ca	5,067.	ppb	1.75	5,000	101.34	
44 Ca	5,157.	ppb	1.50	5,000	103.14	
51 V	25.19	ppb	0.91	25	100.76	
52 Cr	25.09	ppb	0.42	25	100.36	
53 Cr	24.7	ppb	1.03	25	98.8	
55 Mn	25.11	ppb	1.02	25	100.44	
56 Fe	4,977.	ppb	2.55	5,000	99.54	
57 Fe	5,071.	ppb	1.13	5,000	101.42	
59 Co	25.15	ppb	0.41	25	100.6	
60 Ni	25.09	ppb	0.14	25	100.36	
63 Cu	25.32	ppb	1.00	25	101.28	
65 Cu	25.43	ppb	0.73	25	101.72	
66 Zn	25.21	ppb	2.20	25	100.84	
68 Zn	24.66	ppb	1.30	25	98.64	
75 As	24.85	ppb	0.88	25	99.4	
82 Se	25.42	ppb	0.26	25	101.68	
88 Sr	25.71	ppb	2.03	25	102.84	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.71	ppb	0.49	25	102.84	
107 Ag	26.16	ppb	0.27	25	104.64	
109 Ag	25.7	ppb	0.60	25	102.8	
111 Cd	25.51	ppb	0.39	25	102.04	
114 Cd	25.65	ppb	0.71	25	102.6	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.43	ppb	1.94	25	101.72	
120 Sn	25.47	ppb	2.63	25	101.88	
121 Sb	25.39	ppb	2.36	25	101.56	
123 Sb	25.28	ppb	2.46	25	101.12	
135 Ba	25.65	ppb	1.89	25	102.6	
137 Ba	25.59	ppb	2.60	25	102.36	
182 W	24.49	ppb	1.80	25	97.96	
203 Tl	25.04	ppb	0.98	25	100.16	
205 Tl	24.84	ppb	0.96	25	99.36	
208 Pb	24.8	ppb	1.32	25	99.2	
232 Th	24.74	ppb	0.88	25	98.96	
238 U	25.17	ppb	1.40	25	100.68	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3445322.00	1.37	3343964.50	103.0	80 - 120.4	
45 Sc	2951650.80	1.05	2753983.00	107.2	80 - 120.4	
72 Ge	531505.88	0.83	501751.53	105.9	80 - 120.4	
159 Tb	3477789.00	1.09	3226356.00	107.8	80 - 120.4	
209 Bi	1933495.10	0.71	1827412.60	105.8	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000372

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\065_CCB.D\065_CCB.D#
Date Acquired: Mar 22 2018 08:35 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0002	ppb	449.66	1.00	
11 B	0.7314	ppb	11.78	1.00	
23 Na	-0.8966	ppb	43.43	1.00	
25 Mg	0.3435	ppb	50.68	1.00	
27 Al	0.6472	ppb	35.55	1.00	
28 Si	128.1	ppb	19.23	1.00	
29 Si	22.14	ppb	22.74	1.00	
39 K	-3.338	ppb	11.94	1.00	
43 Ca	2.941	ppb	122.20	1.00	
44 Ca	5.702	ppb	25.08	1.00	
51 V	0.0381	ppb	15.29	1.00	
52 Cr	-0.0115	ppb	269.12	1.00	
53 Cr	-0.4049	ppb	45.81	1.00	
55 Mn	0.0112	ppb	15.88	1.00	
56 Fe	9.479	ppb	10.61	1.00	
57 Fe	1.079	ppb	226.78	1.00	
59 Co	-0.0033	ppb	58.32	1.00	
60 Ni	-0.0012	ppb	924.92	1.00	
63 Cu	-0.0048	ppb	18.61	1.00	
65 Cu	-0.0114	ppb	18.78	1.00	
66 Zn	0.0671	ppb	119.01	1.00	
68 Zn	0.1726	ppb	123.52	1.00	
75 As	-0.1915	ppb	124.13	1.00	
82 Se	0.0916	ppb	353.32	1.00	
88 Sr	0.0043	ppb	111.46	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0217	ppb	27.12	1.00	
107 Ag	-0.0009	ppb	119.31	1.00	
109 Ag	0.0006	ppb	476.90	1.00	
111 Cd	-0.1222	ppb	25.30	1.00	
114 Cd	0.0006	ppb	673.27	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0434	ppb	55.82	1.00	
120 Sn	0.0294	ppb	23.11	1.00	
121 Sb	-0.002	ppb	78.43	1.00	
123 Sb	0.0055	ppb	50.36	1.00	
135 Ba	0.0256	ppb	93.10	1.00	
137 Ba	0.0251	ppb	15.33	1.00	
182 W	0.0131	ppb	37.38	1.00	
203 Tl	0.0049	ppb	122.75	1.00	
205 Tl	0.0073	ppb	64.37	1.00	
208 Pb	0.0041	ppb	106.01	1.00	
232 Th	0.0083	ppb	6.62	1.00	
238 U	0.0024	ppb	17.52	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3162381.80	1.20	3343964.50	94.6	79.5 - 120	
45 Sc	2665161.80	0.54	2753983.00	96.8	79.5 - 120	
72 Ge	486739.13	0.75	501751.53	97.0	79.5 - 120	
159 Tb	3150233.50	0.98	3226356.00	97.6	79.5 - 120	
209 Bi	1769283.90	0.45	1827412.60	96.8	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000373

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\066SMPL.D\066SMPL.D#
Date Acquired: Mar 22 2018 08:39 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-008A
Misc Info:
Vial Number: 2307
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	19.605	3.921	ppb	1.60	100.	
11 B	375.15	75.03	ppb	3.95	1000.	
23 Na	13,015.	2,603.	ppb	1.15	200000.	
25 Mg	71,200.	14,240.	ppb	1.15	200000.	
27 Al	160,350.	32,070.	ppb	0.58	200000.	
28 Si	16,355.	3,271.	ppb	20.81	#VALUE!	
29 Si	17,655.	3,531.	ppb	3.95	10000.	
39 K	67,900.	13,580.	ppb	1.09	200000.	
43 Ca	61,150.	12,230.	ppb	1.57	#VALUE!	
44 Ca	60,650.	12,130.	ppb	1.30	200000.	
51 V	328.2	65.64	ppb	0.62	1000.	
52 Cr	208.4	41.68	ppb	0.58	2000.	
53 Cr	237.25	47.45	ppb	1.15	#VALUE!	
55 Mn	3,617.5	723.5	ppb	0.89	2000.	
56 Fe	142,700.	28,540.	ppb	0.88	#VALUE!	
57 Fe	138,550.	27,710.	ppb	0.55	100000.	
59 Co	71.6	14.32	ppb	0.98	1000.	
60 Ni	139.35	27.87	ppb	0.63	1000.	
63 Cu	153.55	30.71	ppb	0.75	#VALUE!	
65 Cu	156.1	31.22	ppb	0.54	2000.	
66 Zn	630.	126.	ppb	1.25	2000.	
68 Zn	662.	132.4	ppb	0.35	#VALUE!	
75 As	87.15	17.43	ppb	0.73	1000.	
82 Se	64.95	12.99	ppb	1.26	1000.	
88 Sr	612.	122.4	ppb	0.23	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	65.3	13.06	ppb	0.16	1000.	
107 Ag	13.2	2.64	ppb	1.32	100.	
109 Ag	12.76	2.552	ppb	1.32	#VALUE!	
111 Cd	16.025	3.205	ppb	1.47	#VALUE!	
114 Cd	13.805	2.761	ppb	1.53	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	112.4	22.48	ppb	0.44	1000.	
120 Sn	112.65	22.53	ppb	1.43	#VALUE!	
121 Sb	12.67	2.534	ppb	1.35	#VALUE!	
123 Sb	13.005	2.601	ppb	4.36	1000.	
135 Ba	1,823.5	364.7	ppb	1.09	2000.	
137 Ba	1,823.	364.6	ppb	0.71	#VALUE!	
182 W	59.95	11.99	ppb	1.09	1000.	
203 Tl	14.475	2.895	ppb	1.68	1000.	
205 Tl	14.36	2.872	ppb	1.10	#VALUE!	
208 Pb	158.55	31.71	ppb	0.52	2000.	
232 Th	101.65	20.33	ppb	1.69	1000.	
238 U	26.165	5.233	ppb	0.44	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3512329.50	1.33	3343964.50	105.0	69.5 - 120	
45 Sc	3086154.80	0.86	2753983.00	112.1	69.5 - 120	
72 Ge	556886.56	0.29	501751.53	111.0	69.5 - 120	
159 Tb	3669051.30	0.41	3226356.00	113.7	69.5 - 120	
209 Bi	1948545.40	0.37	1827412.60	106.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000374

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\067SMPL.D\067SMPL.D#
Date Acquired: Mar 22 2018 08:44 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-008S
Misc Info:
Vial Number: 2308
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	58.6	11.72	ppb	2.83	100.	
11 B	602.5	120.5	ppb	2.10	1000.	
23 Na	9,285.	1,857.	ppb	2.14	200000.	
25 Mg	75,800.	15,160.	ppb	0.45	200000.	
27 Al	178,350.	35,670.	ppb	0.24	200000.	
28 Si	7,270.	1,454.	ppb	8.73	#VALUE!	
29 Si	8,565.	1,713.	ppb	4.37	10000.	
39 K	68,800.	13,760.	ppb	0.46	200000.	
43 Ca	61,450.	12,290.	ppb	1.73	#VALUE!	
44 Ca	60,350.	12,070.	ppb	0.89	200000.	
51 V	786.5	157.3	ppb	0.89	1000.	
52 Cr	361.05	72.21	ppb	0.39	2000.	
53 Cr	392.45	78.49	ppb	0.25	#VALUE!	
55 Mn	3,994.5	798.9	ppb	0.61	2000.	
56 Fe	145,300.	29,060.	ppb	0.73	#VALUE!	
57 Fe	141,900.	28,380.	ppb	0.72	100000.	
59 Co	568.	113.6	ppb	1.62	1000.	
60 Ni	613.	122.6	ppb	0.62	1000.	
63 Cu	363.75	72.75	ppb	0.97	#VALUE!	
65 Cu	369.55	73.91	ppb	0.20	2000.	
66 Zn	1,000.5	200.1	ppb	0.93	2000.	
68 Zn	1,110.	222.	ppb	1.28	#VALUE!	
75 As	124.25	24.85	ppb	0.55	1000.	
82 Se	100.95	20.19	ppb	1.85	1000.	
88 Sr	1,062.5	212.5	ppb	0.51	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	97.85	19.57	ppb	0.78	1000.	
107 Ag	51.8	10.36	ppb	1.53	100.	
109 Ag	50.65	10.13	ppb	1.51	#VALUE!	
111 Cd	256.15	51.23	ppb	0.40	#VALUE!	
114 Cd	253.55	50.71	ppb	0.39	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	555.5	111.1	ppb	1.42	1000.	
120 Sn	556.	111.2	ppb	1.96	#VALUE!	
121 Sb	33.79	6.758	ppb	0.87	#VALUE!	
123 Sb	33.865	6.773	ppb	0.93	1000.	
135 Ba	3,936.	787.2	ppb	2.03	2000.	
137 Ba	3,970.5	794.1	ppb	0.27	#VALUE!	
182 W	53.15	10.63	ppb	2.56	1000.	
203 Tl	108.45	21.69	ppb	0.72	1000.	
205 Tl	107.65	21.53	ppb	0.39	#VALUE!	
208 Pb	250.65	50.13	ppb	0.54	2000.	
232 Th	191.35	38.27	ppb	0.41	1000.	
238 U	121.	24.2	ppb	0.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3679841.30	2.76	3343964.50	110.0	69.5 - 120	
45 Sc	3169837.80	0.70	2753983.00	115.1	69.5 - 120	
72 Ge	566556.56	0.79	501751.53	112.9	69.5 - 120	
159 Tb	3666861.50	1.01	3226356.00	113.7	69.5 - 120	
209 Bi	1936356.30	0.61	1827412.60	106.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000375

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\068SMPL.D\068SMPL.D#
Date Acquired: Mar 22 2018 08:48 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-008P
Misc Info:
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	51.6	10.32	ppb	1.75	100.	
11 B	537.5	107.5	ppb	1.48	1000.	
23 Na	8,250.	1,650.	ppb	2.86	200000.	
25 Mg	69,250.	13,850.	ppb	0.94	200000.	
27 Al	159,350.	31,870.	ppb	1.22	200000.	
28 Si	5,685.	1,137.	ppb	20.52	#VALUE!	
29 Si	6,245.	1,249.	ppb	25.97	10000.	
39 K	61,600.	12,320.	ppb	1.19	200000.	
43 Ca	57,050.	11,410.	ppb	0.67	#VALUE!	
44 Ca	56,650.	11,330.	ppb	0.21	200000.	
51 V	722.5	144.5	ppb	0.89	1000.	
52 Cr	328.95	65.79	ppb	0.42	2000.	
53 Cr	355.45	71.09	ppb	0.91	#VALUE!	
55 Mn	3,670.5	734.1	ppb	0.39	2000.	
56 Fe	133,400.	26,680.	ppb	0.41	#VALUE!	
57 Fe	128,650.	25,730.	ppb	0.39	100000.	
59 Co	518.5	103.7	ppb	1.39	1000.	
60 Ni	559.	111.8	ppb	0.88	1000.	
63 Cu	332.85	66.57	ppb	0.12	#VALUE!	
65 Cu	337.65	67.53	ppb	0.17	2000.	
66 Zn	915.	183.	ppb	0.38	2000.	
68 Zn	1,003.	200.6	ppb	0.31	#VALUE!	
75 As	114.15	22.83	ppb	0.35	1000.	
82 Se	92.45	18.49	ppb	1.21	1000.	
88 Sr	976.5	195.3	ppb	0.83	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	89.3	17.86	ppb	0.63	1000.	
107 Ag	46.9	9.38	ppb	0.53	100.	
109 Ag	47.07	9.414	ppb	0.46	#VALUE!	
111 Cd	232.9	46.58	ppb	0.32	#VALUE!	
114 Cd	230.9	46.18	ppb	0.60	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	503.	100.6	ppb	1.26	1000.	
120 Sn	500.5	100.1	ppb	1.54	#VALUE!	
121 Sb	29.16	5.832	ppb	1.33	#VALUE!	
123 Sb	29.45	5.89	ppb	1.58	1000.	
135 Ba	3,558.5	711.7	ppb	0.87	2000.	
137 Ba	3,597.	719.4	ppb	0.83	#VALUE!	
182 W	47.205	9.441	ppb	1.01	1000.	
203 Tl	98.05	19.61	ppb	1.06	1000.	
205 Tl	96.65	19.33	ppb	1.02	#VALUE!	
208 Pb	225.7	45.14	ppb	1.15	2000.	
232 Th	171.15	34.23	ppb	0.45	1000.	
238 U	108.2	21.64	ppb	0.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3642284.50	1.22	3343964.50	108.9	69.5 - 120	
45 Sc	3147080.30	1.15	2753983.00	114.3	69.5 - 120	
72 Ge	554353.25	0.37	501751.53	110.5	69.5 - 120	
159 Tb	3606507.00	0.99	3226356.00	111.8	69.5 - 120	
209 Bi	1913147.50	0.69	1827412.60	104.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000376

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\069SMPL.D\069SMPL.D#
Date Acquired: Mar 22 2018 08:52 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-009
Misc Info:
Vial Number: 2310
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.325	1.465	ppb	1.17	100.	
11 B	156.55	31.31	ppb	0.89	1000.	
23 Na	1,348.5	269.7	ppb	1.44	200000.	
25 Mg	56,750.	11,350.	ppb	0.40	200000.	
27 Al	151,600.	30,320.	ppb	1.05	200000.	
28 Si	6,080.	1,216.	ppb	13.13	#VALUE!	
29 Si	6,010.	1,202.	ppb	8.67	10000.	
39 K	49,620.	9,924.	ppb	0.87	200000.	
43 Ca	73,550.	14,710.	ppb	1.55	#VALUE!	
44 Ca	72,250.	14,450.	ppb	0.45	200000.	
51 V	251.15	50.23	ppb	0.85	1000.	
52 Cr	141.65	28.33	ppb	0.71	2000.	
53 Cr	175.1	35.02	ppb	0.37	#VALUE!	
55 Mn	2,726.5	545.3	ppb	1.20	2000.	
56 Fe	132,250.	26,450.	ppb	0.91	#VALUE!	
57 Fe	127,550.	25,510.	ppb	0.38	100000.	
59 Co	53.5	10.7	ppb	0.58	1000.	
60 Ni	112.55	22.51	ppb	0.55	1000.	
63 Cu	95.65	19.13	ppb	0.82	#VALUE!	
65 Cu	97.35	19.47	ppb	0.31	2000.	
66 Zn	393.75	78.75	ppb	0.83	2000.	
68 Zn	429.	85.8	ppb	0.92	#VALUE!	
75 As	24.64	4.928	ppb	3.46	1000.	
82 Se	4.794	0.9588	ppb	58.33	1000.	
88 Sr	663.	132.6	ppb	1.01	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.7595	0.5519	ppb	4.19	1000.	
107 Ag	0.6885	0.1377	ppb	2.05	100.	
109 Ag	0.542	0.1084	ppb	7.96	#VALUE!	
111 Cd	3.0025	0.6005	ppb	2.80	#VALUE!	
114 Cd	0.994	0.1988	ppb	7.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.65	10.13	ppb	0.73	1000.	
120 Sn	50.85	10.17	ppb	0.41	#VALUE!	
121 Sb	1.629	0.3258	ppb	3.53	#VALUE!	
123 Sb	1.59	0.318	ppb	11.27	1000.	
135 Ba	1,564.5	312.9	ppb	0.14	2000.	
137 Ba	1,566.5	313.3	ppb	0.05	#VALUE!	
182 W	0.754	0.1508	ppb	8.00	1000.	
203 Tl	2.636	0.5272	ppb	3.82	1000.	
205 Tl	2.622	0.5244	ppb	1.70	#VALUE!	
208 Pb	116.15	23.23	ppb	0.68	2000.	
232 Th	81.9	16.38	ppb	0.86	1000.	
238 U	8.28	1.656	ppb	2.23	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3569519.50	1.19	3343964.50	106.7	69.5 - 120	
45 Sc	3201624.00	0.06	2753983.00	116.3	69.5 - 120	
72 Ge	568221.25	0.66	501751.53	113.2	69.5 - 120	
159 Tb	3649829.00	0.59	3226356.00	113.1	69.5 - 120	
209 Bi	1942870.00	0.46	1827412.60	106.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000377

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\070SMPL.D\070SMPL.D#
Date Acquired: Mar 22 2018 08:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-010
Misc Info:
Vial Number: 2311
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.17	1.234	ppb	2.05	100.	
11 B	106.45	21.29	ppb	1.74	1000.	
23 Na	1,411.5	282.3	ppb	2.37	200000.	
25 Mg	35,775.	7,155.	ppb	0.85	200000.	
27 Al	129,650.	25,930.	ppb	0.94	200000.	
28 Si	8,335.	1,667.	ppb	9.09	#VALUE!	
29 Si	8,835.	1,767.	ppb	19.77	10000.	
39 K	47,910.	9,582.	ppb	0.71	200000.	
43 Ca	30,240.	6,048.	ppb	0.66	#VALUE!	
44 Ca	29,815.	5,963.	ppb	0.65	200000.	
51 V	219.65	43.93	ppb	0.75	1000.	
52 Cr	125.1	25.02	ppb	0.80	2000.	
53 Cr	155.7	31.14	ppb	0.94	#VALUE!	
55 Mn	2,866.5	573.3	ppb	0.37	2000.	
56 Fe	111,350.	22,270.	ppb	0.47	#VALUE!	
57 Fe	108,250.	21,650.	ppb	0.73	100000.	
59 Co	49.175	9.835	ppb	1.13	1000.	
60 Ni	94.	18.8	ppb	0.76	1000.	
63 Cu	107.25	21.45	ppb	0.23	#VALUE!	
65 Cu	108.05	21.61	ppb	1.61	2000.	
66 Zn	416.6	83.32	ppb	0.54	2000.	
68 Zn	457.6	91.52	ppb	1.24	#VALUE!	
75 As	21.945	4.389	ppb	3.67	1000.	
82 Se	6.225	1.245	ppb	14.58	1000.	
88 Sr	426.6	85.32	ppb	0.57	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.365	1.873	ppb	2.29	1000.	
107 Ag	0.7675	0.1535	ppb	9.77	100.	
109 Ag	0.7145	0.1429	ppb	1.23	#VALUE!	
111 Cd	3.583	0.7166	ppb	11.14	#VALUE!	
114 Cd	2.315	0.463	ppb	5.29	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.7	9.34	ppb	1.18	1000.	
120 Sn	46.87	9.374	ppb	0.36	#VALUE!	
121 Sb	1.4175	0.2835	ppb	8.87	#VALUE!	
123 Sb	1.4425	0.2885	ppb	4.55	1000.	
135 Ba	1,431.	286.2	ppb	0.49	2000.	
137 Ba	1,425.	285.	ppb	0.30	#VALUE!	
182 W	0.7005	0.1401	ppb	14.25	1000.	
203 Tl	2.399	0.4798	ppb	5.04	1000.	
205 Tl	2.2955	0.4591	ppb	1.12	#VALUE!	
208 Pb	143.05	28.61	ppb	0.38	2000.	
232 Th	71.25	14.25	ppb	0.36	1000.	
238 U	13.09	2.618	ppb	0.18	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3502540.80	2.44	3343964.50	104.7	69.5 - 120	
45 Sc	3102260.30	1.81	2753983.00	112.6	69.5 - 120	
72 Ge	556161.00	2.04	501751.53	110.8	69.5 - 120	
159 Tb	3573627.50	0.89	3226356.00	110.8	69.5 - 120	
209 Bi	1923847.90	0.30	1827412.60	105.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000378

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\071SMPL.D\071SMPL.D#
Date Acquired: Mar 22 2018 09:01 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-011
Misc Info:
Vial Number: 2312
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	9.275	1.855	ppb	3.60	100.	
11 B	135.75	27.15	ppb	1.75	1000.	
23 Na	1,524.5	304.9	ppb	1.83	200000.	
25 Mg	63,900.	12,780.	ppb	2.57	200000.	
27 Al	186,250.	37,250.	ppb	1.79	200000.	
28 Si	3,203.5	640.7	ppb	1.18	#VALUE!	
29 Si	2,441.	488.2	ppb	8.36	10000.	
39 K	67,200.	13,440.	ppb	0.51	200000.	
43 Ca	28,525.	5,705.	ppb	2.99	#VALUE!	
44 Ca	28,150.	5,630.	ppb	1.16	200000.	
51 V	264.65	52.93	ppb	0.58	1000.	
52 Cr	167.7	33.54	ppb	0.28	2000.	
53 Cr	197.05	39.41	ppb	1.18	#VALUE!	
55 Mn	3,175.5	635.1	ppb	0.40	2000.	
56 Fe	167,150.	33,430.	ppb	0.98	#VALUE!	
57 Fe	161,800.	32,360.	ppb	0.51	100000.	
59 Co	71.9	14.38	ppb	0.14	1000.	
60 Ni	153.05	30.61	ppb	0.62	1000.	
63 Cu	119.65	23.93	ppb	0.37	#VALUE!	
65 Cu	121.75	24.35	ppb	0.78	2000.	
66 Zn	500.	100.	ppb	0.41	2000.	
68 Zn	542.	108.4	ppb	0.35	#VALUE!	
75 As	29.91	5.982	ppb	1.34	1000.	
82 Se	5.48	1.096	ppb	8.76	1000.	
88 Sr	568.5	113.7	ppb	1.03	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.9	1.18	ppb	3.46	1000.	
107 Ag	0.8225	0.1645	ppb	9.41	100.	
109 Ag	0.7455	0.1491	ppb	7.08	#VALUE!	
111 Cd	2.7725	0.5545	ppb	14.95	#VALUE!	
114 Cd	1.398	0.2796	ppb	9.04	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.1	10.02	ppb	3.08	1000.	
120 Sn	50.05	10.01	ppb	3.39	#VALUE!	
121 Sb	1.9425	0.3885	ppb	6.31	#VALUE!	
123 Sb	1.95	0.39	ppb	3.02	1000.	
135 Ba	1,633.	326.6	ppb	1.30	2000.	
137 Ba	1,642.5	328.5	ppb	1.33	#VALUE!	
182 W	0.61	0.122	ppb	13.29	1000.	
203 Tl	3.4375	0.6875	ppb	4.91	1000.	
205 Tl	3.324	0.6648	ppb	1.80	#VALUE!	
208 Pb	133.05	26.61	ppb	0.93	2000.	
232 Th	87.45	17.49	ppb	0.82	1000.	
238 U	8.2	1.64	ppb	1.05	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3524265.80	1.32	3343964.50	105.4	69.5 - 120	
45 Sc	3138322.80	0.88	2753983.00	114.0	69.5 - 120	
72 Ge	557212.88	0.58	501751.53	111.1	69.5 - 120	
159 Tb	3564361.30	1.11	3226356.00	110.5	69.5 - 120	
209 Bi	1889918.50	0.70	1827412.60	103.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000379

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\072SMPL.D\072SMPL.D#
Date Acquired: Mar 22 2018 09:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-012
Misc Info:
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.4	1.28	ppb	1.88	100.	
11 B	114.45	22.89	ppb	4.26	1000.	
23 Na	1,175.5	235.1	ppb	1.94	200000.	
25 Mg	45,055.	9,011.	ppb	0.61	200000.	
27 Al	129,550.	25,910.	ppb	0.65	200000.	
28 Si	5,140.	1,028.	ppb	18.53	#VALUE!	
29 Si	5,445.	1,089.	ppb	26.87	10000.	
39 K	48,195.	9,639.	ppb	0.81	200000.	
43 Ca	35,210.	7,042.	ppb	1.51	#VALUE!	
44 Ca	35,175.	7,035.	ppb	0.85	200000.	
51 V	210.45	42.09	ppb	0.68	1000.	
52 Cr	124.7	24.94	ppb	0.18	2000.	
53 Cr	149.95	29.99	ppb	2.98	#VALUE!	
55 Mn	2,815.5	563.1	ppb	0.60	2000.	
56 Fe	115,400.	23,080.	ppb	0.09	#VALUE!	
57 Fe	111,450.	22,290.	ppb	1.10	100000.	
59 Co	49.815	9.963	ppb	1.27	1000.	
60 Ni	95.25	19.05	ppb	0.88	1000.	
63 Cu	94.45	18.89	ppb	0.73	#VALUE!	
65 Cu	94.65	18.93	ppb	0.49	2000.	
66 Zn	397.15	79.43	ppb	1.50	2000.	
68 Zn	432.9	86.58	ppb	0.34	#VALUE!	
75 As	19.99	3.998	ppb	1.67	1000.	
82 Se	4.942	0.9884	ppb	42.10	1000.	
88 Sr	444.55	88.91	ppb	1.99	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.5475	0.9095	ppb	4.00	1000.	
107 Ag	0.706	0.1412	ppb	5.66	100.	
109 Ag	0.538	0.1076	ppb	8.90	#VALUE!	
111 Cd	3.284	0.6568	ppb	1.56	#VALUE!	
114 Cd	1.761	0.3522	ppb	6.22	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.15	9.23	ppb	0.92	1000.	
120 Sn	46.22	9.244	ppb	0.34	#VALUE!	
121 Sb	1.35	0.27	ppb	3.53	#VALUE!	
123 Sb	1.2995	0.2599	ppb	6.76	1000.	
135 Ba	1,442.5	288.5	ppb	0.14	2000.	
137 Ba	1,436.5	287.3	ppb	0.75	#VALUE!	
182 W	0.7185	0.1437	ppb	2.89	1000.	
203 Tl	2.3685	0.4737	ppb	9.23	1000.	
205 Tl	2.388	0.4776	ppb	3.46	#VALUE!	
208 Pb	122.45	24.49	ppb	1.58	2000.	
232 Th	78.55	15.71	ppb	2.02	1000.	
238 U	10.835	2.167	ppb	3.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3514017.80	1.24	3343964.50	105.1	69.5 - 120	
45 Sc	3098175.30	0.68	2753983.00	112.5	69.5 - 120	
72 Ge	555002.00	0.50	501751.53	110.6	69.5 - 120	
159 Tb	3558343.80	0.55	3226356.00	110.3	69.5 - 120	
209 Bi	1909721.60	1.26	1827412.60	104.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000380

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\073SMPL.D\073SMPL.D#
Date Acquired: Mar 22 2018 09:10 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-013
Misc Info:
Vial Number: 2402
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.605	1.521	ppb	1.09	100.	
11 B	124.05	24.81	ppb	5.14	1000.	
23 Na	1,337.	267.4	ppb	2.28	200000.	
25 Mg	45,290.	9,058.	ppb	1.12	200000.	
27 Al	154,200.	30,840.	ppb	0.91	200000.	
28 Si	6,155.	1,231.	ppb	9.74	#VALUE!	
29 Si	5,620.	1,124.	ppb	2.13	10000.	
39 K	54,050.	10,810.	ppb	0.68	200000.	
43 Ca	40,655.	8,131.	ppb	0.11	#VALUE!	
44 Ca	40,520.	8,104.	ppb	1.11	200000.	
51 V	264.4	52.88	ppb	0.19	1000.	
52 Cr	153.6	30.72	ppb	0.12	2000.	
53 Cr	182.2	36.44	ppb	1.00	#VALUE!	
55 Mn	3,520.	704.	ppb	0.58	2000.	
56 Fe	135,900.	27,180.	ppb	0.57	#VALUE!	
57 Fe	130,200.	26,040.	ppb	0.57	100000.	
59 Co	60.1	12.02	ppb	1.37	1000.	
60 Ni	116.75	23.35	ppb	0.62	1000.	
63 Cu	120.65	24.13	ppb	1.06	#VALUE!	
65 Cu	122.4	24.48	ppb	1.03	2000.	
66 Zn	494.3	98.86	ppb	0.42	2000.	
68 Zn	543.5	108.7	ppb	0.51	#VALUE!	
75 As	26.05	5.21	ppb	1.20	1000.	
82 Se	6.95	1.39	ppb	24.13	1000.	
88 Sr	531.	106.2	ppb	1.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.79	1.358	ppb	3.98	1000.	
107 Ag	0.944	0.1888	ppb	3.86	100.	
109 Ag	0.771	0.1542	ppb	8.13	#VALUE!	
111 Cd	4.845	0.969	ppb	0.55	#VALUE!	
114 Cd	2.7265	0.5453	ppb	7.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	50.8	10.16	ppb	2.69	1000.	
120 Sn	50.4	10.08	ppb	1.10	#VALUE!	
121 Sb	2.0335	0.4067	ppb	3.51	#VALUE!	
123 Sb	1.941	0.3882	ppb	5.10	1000.	
135 Ba	1,813.5	362.7	ppb	1.66	2000.	
137 Ba	1,827.	365.4	ppb	1.12	#VALUE!	
182 W	0.754	0.1508	ppb	7.16	1000.	
203 Tl	2.9075	0.5815	ppb	3.13	1000.	
205 Tl	2.8295	0.5659	ppb	3.14	#VALUE!	
208 Pb	178.5	35.7	ppb	0.68	2000.	
232 Th	91.45	18.29	ppb	1.22	1000.	
238 U	15.46	3.092	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3566214.00	2.81	3343964.50	106.6	69.5 - 120	
45 Sc	3182073.30	0.21	2753983.00	115.5	69.5 - 120	
72 Ge	558800.75	0.42	501751.53	111.4	69.5 - 120	
159 Tb	3536889.00	0.92	3226356.00	109.6	69.5 - 120	
209 Bi	1895459.10	0.60	1827412.60	103.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000381

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\074SMPL.D\074SMPL.D#
Date Acquired: Mar 22 2018 09:14 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2329-014
Misc Info:
Vial Number: 2403
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.914	0.9828	ppb	3.75	100.	
11 B	68.5	13.7	ppb	3.75	1000.	
23 Na	1,066.5	213.3	ppb	3.33	200000.	
25 Mg	25,010.	5,002.	ppb	1.03	200000.	
27 Al	97,250.	19,450.	ppb	0.26	200000.	
28 Si	9,660.	1,932.	ppb	13.98	#VALUE!	
29 Si	13,080.	2,616.	ppb	20.44	10000.	
39 K	36,405.	7,281.	ppb	0.77	200000.	
43 Ca	19,475.	3,895.	ppb	0.46	#VALUE!	
44 Ca	19,610.	3,922.	ppb	1.00	200000.	
51 V	175.5	35.1	ppb	0.98	1000.	
52 Cr	100.1	20.02	ppb	1.44	2000.	
53 Cr	128.9	25.78	ppb	0.62	#VALUE!	
55 Mn	2,585.	517.	ppb	1.18	2000.	
56 Fe	86,750.	17,350.	ppb	0.87	#VALUE!	
57 Fe	84,500.	16,900.	ppb	0.16	100000.	
59 Co	44.975	8.995	ppb	0.53	1000.	
60 Ni	76.75	15.35	ppb	0.32	1000.	
63 Cu	79.05	15.81	ppb	1.04	#VALUE!	
65 Cu	80.5	16.1	ppb	0.52	2000.	
66 Zn	308.05	61.61	ppb	0.86	2000.	
68 Zn	340.1	68.02	ppb	1.19	#VALUE!	
75 As	19.49	3.898	ppb	4.62	1000.	
82 Se	6.63	1.326	ppb	25.08	1000.	
88 Sr	323.7	64.74	ppb	0.63	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.04	1.808	ppb	1.50	1000.	
107 Ag	0.501	0.1002	ppb	3.13	100.	
109 Ag	0.4634	0.0927	ppb	3.85	#VALUE!	
111 Cd	2.199	0.4398	ppb	2.27	#VALUE!	
114 Cd	1.9615	0.3923	ppb	7.75	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	48.045	9.609	ppb	2.16	1000.	
120 Sn	47.385	9.477	ppb	1.02	#VALUE!	
121 Sb	1.2085	0.2417	ppb	6.00	#VALUE!	
123 Sb	1.2125	0.2425	ppb	4.41	1000.	
135 Ba	1,201.5	240.3	ppb	1.42	2000.	
137 Ba	1,208.5	241.7	ppb	1.10	#VALUE!	
182 W	0.638	0.1276	ppb	16.30	1000.	
203 Tl	1.9945	0.3989	ppb	6.74	1000.	
205 Tl	1.918	0.3836	ppb	3.92	#VALUE!	
208 Pb	116.95	23.39	ppb	1.77	2000.	
232 Th	61.4	12.28	ppb	3.25	1000.	
238 U	13.565	2.713	ppb	0.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3480525.50	0.93	3343964.50	104.1	69.5 - 120	
45 Sc	3092884.00	0.23	2753983.00	112.3	69.5 - 120	
72 Ge	557844.44	0.81	501751.53	111.2	69.5 - 120	
159 Tb	3516210.30	1.06	3226356.00	109.0	69.5 - 120	
209 Bi	1907015.80	2.04	1827412.60	104.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000382

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\075SMPL.D\075SMPL.D#
Date Acquired: Mar 22 2018 09:18 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2404
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0007	-0.0007	ppb	218.22	100.	
11 B	0.9513	0.9513	ppb	8.15	1000.	
23 Na	-1.739	-1.739	ppb	6.83	200000.	
25 Mg	0.2394	0.2394	ppb	67.88	200000.	
27 Al	1.363	1.363	ppb	12.85	200000.	
28 Si	164.5	164.5	ppb	14.02	#VALUE!	
29 Si	14.24	14.24	ppb	113.83	10000.	
39 K	-3.942	-3.942	ppb	28.34	200000.	
43 Ca	5.651	5.651	ppb	78.15	#VALUE!	
44 Ca	8.502	8.502	ppb	9.26	200000.	
51 V	0.0411	0.0411	ppb	187.22	1000.	
52 Cr	0.039	0.039	ppb	42.49	2000.	
53 Cr	0.3506	0.3506	ppb	61.04	#VALUE!	
55 Mn	0.0382	0.0382	ppb	11.54	2000.	
56 Fe	10.19	10.19	ppb	14.06	#VALUE!	
57 Fe	3.451	3.451	ppb	20.56	100000.	
59 Co	0.0016	0.0016	ppb	113.20	1000.	
60 Ni	-0.0003	-0.0003	ppb	2319.60	1000.	
63 Cu	0.009	0.009	ppb	113.87	#VALUE!	
65 Cu	0.0025	0.0025	ppb	216.49	2000.	
66 Zn	0.0275	0.0275	ppb	150.76	2000.	
68 Zn	0.065	0.065	ppb	131.32	#VALUE!	
75 As	0.0322	0.0322	ppb	471.87	1000.	
82 Se	0.0472	0.0472	ppb	126.70	1000.	
88 Sr	-0.0014	-0.0014	ppb	186.45	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0061	0.0061	ppb	37.05	1000.	
107 Ag	-0.0037	-0.0037	ppb	72.26	100.	
109 Ag	0.0008	0.0008	ppb	393.09	#VALUE!	
111 Cd	-0.1916	-0.1916	ppb	16.76	#VALUE!	
114 Cd	0.0043	0.0043	ppb	56.90	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0198	0.0198	ppb	61.47	1000.	
120 Sn	0.0311	0.0311	ppb	76.54	#VALUE!	
121 Sb	-0.0003	-0.0003	ppb	506.17	#VALUE!	
123 Sb	0.0047	0.0047	ppb	99.03	1000.	
135 Ba	0.0041	0.0041	ppb	59.87	2000.	
137 Ba	0.022	0.022	ppb	24.24	#VALUE!	
182 W	0.0001	0.0001	ppb	8426.90	1000.	
203 Tl	0.0024	0.0024	ppb	171.36	1000.	
205 Tl	0.0004	0.0004	ppb	557.60	#VALUE!	
208 Pb	0.0011	0.0011	ppb	114.88	2000.	
232 Th	0.0041	0.0041	ppb	25.40	1000.	
238 U	0.0006	0.0006	ppb	99.62	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3175014.00	2.98	3343964.50	94.9	69.5 - 120	
45 Sc	2764770.80	0.54	2753983.00	100.4	69.5 - 120	
72 Ge	496436.38	0.42	501751.53	98.9	69.5 - 120	
159 Tb	3118459.80	0.63	3226356.00	96.7	69.5 - 120	
209 Bi	1753786.40	0.69	1827412.60	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000383

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\076_CCV.D\076_CCV.D#
Date Acquired: Mar 22 2018 09:22 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.93	ppb	1.09	25	99.72	
11 B	24.93	ppb	3.20	25	99.72	
23 Na	4,776.	ppb	1.30	5,000	95.52	
25 Mg	4,818.	ppb	0.99	5,000	96.36	
27 Al	491.8	ppb	0.34	500	98.36	
28 Si	641.2	ppb	11.17	500	128.24	
29 Si	464.3	ppb	5.41	500	92.86	
39 K	4,977.	ppb	1.12	5,000	99.54	
43 Ca	5,064.	ppb	1.01	5,000	101.28	
44 Ca	5,145.	ppb	0.10	5,000	102.9	
51 V	25.47	ppb	1.16	25	101.88	
52 Cr	25.55	ppb	0.73	25	102.2	
53 Cr	25.94	ppb	1.13	25	103.76	
55 Mn	25.32	ppb	0.48	25	101.28	
56 Fe	5,064.	ppb	0.51	5,000	101.28	
57 Fe	5,124.	ppb	0.96	5,000	102.48	
59 Co	25.29	ppb	1.45	25	101.16	
60 Ni	25.53	ppb	1.46	25	102.12	
63 Cu	25.54	ppb	0.42	25	102.16	
65 Cu	25.61	ppb	0.51	25	102.44	
66 Zn	25.11	ppb	2.38	25	100.44	
68 Zn	25.09	ppb	1.47	25	100.36	
75 As	25.06	ppb	1.06	25	100.24	
82 Se	25.52	ppb	1.40	25	102.08	
88 Sr	25.62	ppb	1.08	25	102.48	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.37	ppb	1.30	25	101.48	
107 Ag	25.36	ppb	0.50	25	101.44	
109 Ag	25.22	ppb	0.80	25	100.88	
111 Cd	24.75	ppb	0.39	25	99	
114 Cd	24.85	ppb	0.90	25	99.4	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.44	ppb	0.41	25	101.76	
120 Sn	25.54	ppb	0.29	25	102.16	
121 Sb	25.35	ppb	0.34	25	101.4	
123 Sb	25.27	ppb	1.13	25	101.08	
135 Ba	25.74	ppb	0.96	25	102.96	
137 Ba	25.48	ppb	0.13	25	101.92	
182 W	24.51	ppb	0.66	25	98.04	
203 Tl	24.89	ppb	1.42	25	99.56	
205 Tl	24.73	ppb	1.10	25	98.92	
208 Pb	24.77	ppb	0.83	25	99.08	
232 Th	24.55	ppb	2.16	25	98.2	
238 U	24.81	ppb	0.95	25	99.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3447326.50	1.26	3343964.50	103.1	80 - 120.4	
45 Sc	3008281.00	0.78	2753983.00	109.2	80 - 120.4	
72 Ge	530453.44	0.88	501751.53	105.7	80 - 120.4	
159 Tb	3394152.80	0.85	3226356.00	105.2	80 - 120.4	
209 Bi	1891855.80	0.41	1827412.60	103.5	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000384

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\077_CCB.D\077_CCB.D#
Date Acquired: Mar 22 2018 09:27 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	-0.0012	ppb	220.27	1.00	
11 B	0.8783	ppb	12.31	1.00	
23 Na	-1.555	ppb	5.45	1.00	
25 Mg	0.1987	ppb	13.84	1.00	
27 Al	0.5314	ppb	12.22	1.00	
28 Si	197.1	ppb	26.37	1.00	
29 Si	23.12	ppb	66.52	1.00	
39 K	-3.416	ppb	31.67	1.00	
43 Ca	3.515	ppb	44.81	1.00	
44 Ca	5.622	ppb	29.03	1.00	
51 V	0.0605	ppb	71.68	1.00	
52 Cr	0.053	ppb	18.56	1.00	
53 Cr	0.9279	ppb	13.13	1.00	
55 Mn	0.0269	ppb	13.69	1.00	
56 Fe	10.73	ppb	17.41	1.00	
57 Fe	3.698	ppb	79.48	1.00	
59 Co	0.002	ppb	126.86	1.00	
60 Ni	0.0055	ppb	173.07	1.00	
63 Cu	-0.0059	ppb	91.18	1.00	
65 Cu	-0.012	ppb	38.01	1.00	
66 Zn	0.012	ppb	332.75	1.00	
68 Zn	0.0584	ppb	88.28	1.00	
75 As	-0.3073	ppb	58.93	1.00	
82 Se	-0.0085	ppb	1032.40	1.00	
88 Sr	-0.0022	ppb	119.62	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0117	ppb	57.07	1.00	
107 Ag	-0.0018	ppb	94.56	1.00	
109 Ag	-0.0005	ppb	362.42	1.00	
111 Cd	-0.1947	ppb	4.73	1.00	
114 Cd	0.0001	ppb	2703.20	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0066	ppb	310.53	1.00	
120 Sn	0.0249	ppb	79.97	1.00	
121 Sb	-0.0004	ppb	976.47	1.00	
123 Sb	0.0042	ppb	96.47	1.00	
135 Ba	0.014	ppb	53.40	1.00	
137 Ba	0.0183	ppb	28.46	1.00	
182 W	0.0136	ppb	35.96	1.00	
203 Tl	0.0077	ppb	91.98	1.00	
205 Tl	0.004	ppb	78.42	1.00	
208 Pb	0.0028	ppb	83.85	1.00	
232 Th	0.0122	ppb	21.36	1.00	
238 U	0.003	ppb	14.10	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3191934.30	1.75	3343964.50	95.5	79.5 - 120	
45 Sc	2794428.00	0.30	2753983.00	101.5	79.5 - 120	
72 Ge	499414.34	0.27	501751.53	99.5	79.5 - 120	
159 Tb	3148891.80	0.35	3226356.00	97.6	79.5 - 120	
209 Bi	1760271.00	1.31	1827412.60	96.3	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000385

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\078SMPL.D\078SMPL.D#
Date Acquired: Mar 22 2018 09:31 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2379-017
Misc Info:
Vial Number: 2405
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.83	1.366	ppb	4.19	100.	
11 B	93.3	18.66	ppb	3.46	1000.	
23 Na	3,034.5	606.9	ppb	0.80	200000.	
25 Mg	77,350.	15,470.	ppb	0.43	200000.	
27 Al	144,500.	28,900.	ppb	1.15	200000.	
28 Si	8,510.	1,702.	ppb	2.02	#VALUE!	
29 Si	11,050.	2,210.	ppb	12.73	10000.	
39 K	35,830.	7,166.	ppb	0.25	200000.	
43 Ca	517,500.	103,500.	ppb	0.09	#VALUE!	
44 Ca	506,500.	101,300.	ppb	0.44	200000.	
51 V	290.25	58.05	ppb	0.85	1000.	
52 Cr	145.5	29.1	ppb	1.00	2000.	
53 Cr	165.15	33.03	ppb	1.75	#VALUE!	
55 Mn	3,384.	676.8	ppb	0.24	2000.	
56 Fe	139,250.	27,850.	ppb	0.33	#VALUE!	
57 Fe	135,600.	27,120.	ppb	0.07	100000.	
59 Co	45.555	9.111	ppb	0.93	1000.	
60 Ni	118.1	23.62	ppb	1.97	1000.	
63 Cu	95.05	19.01	ppb	0.36	#VALUE!	
65 Cu	96.6	19.32	ppb	1.14	2000.	
66 Zn	362.65	72.53	ppb	1.73	2000.	
68 Zn	419.95	83.99	ppb	0.93	#VALUE!	
75 As	27.675	5.535	ppb	4.96	1000.	
82 Se	4.345	0.869	ppb	7.43	1000.	
88 Sr	1,478.5	295.7	ppb	0.82	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.705	1.141	ppb	3.36	1000.	
107 Ag	0.6725	0.1345	ppb	5.00	100.	
109 Ag	0.466	0.0932	ppb	2.73	#VALUE!	
111 Cd	3.552	0.7104	ppb	7.36	#VALUE!	
114 Cd	1.107	0.2214	ppb	14.78	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.315	9.263	ppb	0.90	1000.	
120 Sn	45.94	9.188	ppb	2.73	#VALUE!	
121 Sb	1.8355	0.3671	ppb	6.19	#VALUE!	
123 Sb	1.839	0.3678	ppb	7.53	1000.	
135 Ba	2,027.5	405.5	ppb	2.57	2000.	
137 Ba	2,035.5	407.1	ppb	1.75	#VALUE!	
182 W	0.533	0.1066	ppb	4.40	1000.	
203 Tl	2.528	0.5056	ppb	2.01	1000.	
205 Tl	2.4855	0.4971	ppb	2.08	#VALUE!	
208 Pb	81.05	16.21	ppb	1.15	2000.	
232 Th	66.65	13.33	ppb	1.23	1000.	
238 U	10.575	2.115	ppb	1.20	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3431347.50	0.59	3343964.50	102.6	69.5 - 120	
45 Sc	3069276.50	1.15	2753983.00	111.4	69.5 - 120	
72 Ge	541156.19	0.52	501751.53	107.9	69.5 - 120	
159 Tb	3608541.50	2.22	3226356.00	111.8	69.5 - 120	
209 Bi	1916279.80	0.72	1827412.60	104.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000386

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\079SMPL.D\079SMPL.D#
Date Acquired: Mar 22 2018 09:35 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2379-018
Misc Info:
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.78	1.156	ppb	1.85	100.	
11 B	89.2	17.84	ppb	3.68	1000.	
23 Na	1,210.5	242.1	ppb	20.31	200000.	
25 Mg	41,790.	8,358.	ppb	1.25	200000.	
27 Al	113,150.	22,630.	ppb	0.77	200000.	
28 Si	6,230.	1,246.	ppb	3.29	#VALUE!	
29 Si	5,275.	1,055.	ppb	8.72	10000.	
39 K	43,095.	8,619.	ppb	0.64	200000.	
43 Ca	33,035.	6,607.	ppb	0.39	#VALUE!	
44 Ca	32,965.	6,593.	ppb	0.87	200000.	
51 V	178.1	35.62	ppb	0.34	1000.	
52 Cr	109.6	21.92	ppb	0.65	2000.	
53 Cr	132.15	26.43	ppb	2.38	#VALUE!	
55 Mn	2,773.	554.6	ppb	1.50	2000.	
56 Fe	106,300.	21,260.	ppb	0.93	#VALUE!	
57 Fe	103,400.	20,680.	ppb	1.30	100000.	
59 Co	47.345	9.469	ppb	1.53	1000.	
60 Ni	90.1	18.02	ppb	0.15	1000.	
63 Cu	88.55	17.71	ppb	0.75	#VALUE!	
65 Cu	89.65	17.93	ppb	0.66	2000.	
66 Zn	374.35	74.87	ppb	1.37	2000.	
68 Zn	401.35	80.27	ppb	0.38	#VALUE!	
75 As	18.725	3.745	ppb	1.68	1000.	
82 Se	5.	1.	ppb	31.17	1000.	
88 Sr	428.	85.6	ppb	0.12	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.2755	0.8551	ppb	2.99	1000.	
107 Ag	0.723	0.1446	ppb	4.28	100.	
109 Ag	0.554	0.1108	ppb	6.96	#VALUE!	
111 Cd	3.5345	0.7069	ppb	8.33	#VALUE!	
114 Cd	1.634	0.3268	ppb	7.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.555	9.311	ppb	0.89	1000.	
120 Sn	46.955	9.391	ppb	1.75	#VALUE!	
121 Sb	1.256	0.2512	ppb	4.92	#VALUE!	
123 Sb	1.32	0.264	ppb	2.53	1000.	
135 Ba	1,327.5	265.5	ppb	1.17	2000.	
137 Ba	1,328.	265.6	ppb	0.98	#VALUE!	
182 W	0.79	0.158	ppb	2.95	1000.	
203 Tl	2.1225	0.4245	ppb	1.41	1000.	
205 Tl	2.169	0.4338	ppb	1.10	#VALUE!	
208 Pb	116.25	23.25	ppb	1.69	2000.	
232 Th	69.7	13.94	ppb	1.64	1000.	
238 U	9.54	1.908	ppb	1.87	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3389549.00	0.56	3343964.50	101.4	69.5 - 120	
45 Sc	3024209.00	1.42	2753983.00	109.8	69.5 - 120	
72 Ge	547130.88	0.91	501751.53	109.0	69.5 - 120	
159 Tb	3664969.50	0.65	3226356.00	113.6	69.5 - 120	
209 Bi	1956660.80	0.86	1827412.60	107.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000387

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\080SMPL.D\080SMPL.D#
Date Acquired: Mar 22 2018 09:39 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2407
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0009	-0.0009	ppb	224.30	100.	
11 B	0.6975	0.6975	ppb	2.59	1000.	
23 Na	-1.656	-1.656	ppb	10.91	200000.	
25 Mg	0.2849	0.2849	ppb	50.12	200000.	
27 Al	1.063	1.063	ppb	5.93	200000.	
28 Si	146.2	146.2	ppb	32.65	#VALUE!	
29 Si	-27.85	-27.85	ppb	159.32	10000.	
39 K	-7.848	-7.848	ppb	21.04	200000.	
43 Ca	3.48	3.48	ppb	151.61	#VALUE!	
44 Ca	4.108	4.108	ppb	43.23	200000.	
51 V	0.0204	0.0204	ppb	190.09	1000.	
52 Cr	-0.0004	-0.0004	ppb	5331.40	2000.	
53 Cr	0.2296	0.2296	ppb	63.76	#VALUE!	
55 Mn	0.0231	0.0231	ppb	35.95	2000.	
56 Fe	7.052	7.052	ppb	38.02	#VALUE!	
57 Fe	2.193	2.193	ppb	23.44	100000.	
59 Co	-0.0013	-0.0013	ppb	192.09	1000.	
60 Ni	0.001	0.001	ppb	1063.90	1000.	
63 Cu	0.0095	0.0095	ppb	95.47	#VALUE!	
65 Cu	-0.0126	-0.0126	ppb	92.47	2000.	
66 Zn	0.0913	0.0913	ppb	52.25	2000.	
68 Zn	0.1059	0.1059	ppb	115.77	#VALUE!	
75 As	0.0029	0.0029	ppb	3475.90	1000.	
82 Se	0.0185	0.0185	ppb	1164.40	1000.	
88 Sr	0.0051	0.0051	ppb	78.71	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0017	0.0017	ppb	278.42	1000.	
107 Ag	-0.0034	-0.0034	ppb	19.56	100.	
109 Ag	-0.0012	-0.0012	ppb	134.14	#VALUE!	
111 Cd	-0.1794	-0.1794	ppb	4.04	#VALUE!	
114 Cd	0.0028	0.0028	ppb	141.82	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0036	0.0036	ppb	256.89	1000.	
120 Sn	0.0262	0.0262	ppb	41.88	#VALUE!	
121 Sb	0.0046	0.0046	ppb	92.58	#VALUE!	
123 Sb	0.005	0.005	ppb	39.71	1000.	
135 Ba	0.0066	0.0066	ppb	341.22	2000.	
137 Ba	0.0225	0.0225	ppb	12.59	#VALUE!	
182 W	-0.0009	-0.0009	ppb	349.29	1000.	
203 Tl	0.005	0.005	ppb	55.73	1000.	
205 Tl	0.0029	0.0029	ppb	22.56	#VALUE!	
208 Pb	0.0053	0.0053	ppb	41.82	2000.	
232 Th	0.0052	0.0052	ppb	58.70	1000.	
238 U	-0.0004	-0.0004	ppb	127.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3177549.50	0.85	3343964.50	95.0	69.5 - 120	
45 Sc	2748808.30	1.25	2753983.00	99.8	69.5 - 120	
72 Ge	495142.44	0.87	501751.53	98.7	69.5 - 120	
159 Tb	3156914.00	0.57	3226356.00	97.8	69.5 - 120	
209 Bi	1765107.50	1.02	1827412.60	96.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000388

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\081SMPL.D\081SMPL.D#
Date Acquired: Mar 22 2018 09:43 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBWLC19IMW2
Misc Info:
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0038	0.0008	ppb	341.17	100.	
11 B	2.967	0.5934	ppb	6.93	1000.	
23 Na	10.325	2.065	ppb	1.54	200000.	
25 Mg	4.2055	0.8411	ppb	23.03	200000.	
27 Al	8.075	1.615	ppb	5.47	200000.	
28 Si	460.65	92.13	ppb	38.72	#VALUE!	
29 Si	-208.6	-41.72	ppb	129.22	10000.	
39 K	-38.515	-7.703	ppb	27.68	200000.	
43 Ca	35.005	7.001	ppb	48.54	#VALUE!	
44 Ca	25.525	5.105	ppb	20.86	200000.	
51 V	0.4897	0.0979	ppb	64.44	1000.	
52 Cr	0.7175	0.1435	ppb	21.88	2000.	
53 Cr	35.87	7.174	ppb	3.85	#VALUE!	
55 Mn	0.1892	0.0378	ppb	20.39	2000.	
56 Fe	36.015	7.203	ppb	17.15	#VALUE!	
57 Fe	1.209	0.2418	ppb	350.79	100000.	
59 Co	0.0169	0.0034	ppb	165.43	1000.	
60 Ni	0.0078	0.0016	ppb	324.66	1000.	
63 Cu	0.1498	0.03	ppb	23.73	#VALUE!	
65 Cu	0.0448	0.009	ppb	33.75	2000.	
66 Zn	0.497	0.0994	ppb	42.69	2000.	
68 Zn	-0.2138	-0.0428	ppb	580.45	#VALUE!	
75 As	0.2183	0.0437	ppb	183.92	1000.	
82 Se	-0.4118	-0.0824	ppb	253.40	1000.	
88 Sr	0.038	0.0076	ppb	57.64	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0322	0.0064	ppb	89.28	1000.	
107 Ag	-0.0209	-0.0042	ppb	16.11	100.	
109 Ag	0.0061	0.0012	ppb	311.26	#VALUE!	
111 Cd	-0.9875	-0.1975	ppb	26.74	#VALUE!	
114 Cd	0.0059	0.0012	ppb	334.94	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1.39	0.278	ppb	9.01	1000.	
120 Sn	1.439	0.2878	ppb	2.19	#VALUE!	
121 Sb	0.0524	0.0105	ppb	14.77	#VALUE!	
123 Sb	0.0572	0.0114	ppb	22.96	1000.	
135 Ba	0.1259	0.0252	ppb	45.83	2000.	
137 Ba	0.1847	0.0369	ppb	23.54	#VALUE!	
182 W	0.022	0.0044	ppb	15.90	1000.	
203 Tl	-0.0031	-0.0006	ppb	682.80	1000.	
205 Tl	-0.0169	-0.0034	ppb	32.19	#VALUE!	
208 Pb	0.0254	0.0051	ppb	79.86	2000.	
232 Th	0.0278	0.0056	ppb	12.39	1000.	
238 U	0.0061	0.0012	ppb	42.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3127102.30	1.64	3343964.50	93.5	69.5 - 120	
45 Sc	2707454.50	1.78	2753983.00	98.3	69.5 - 120	
72 Ge	501767.19	0.66	501751.53	100.0	69.5 - 120	
159 Tb	3265548.80	0.66	3226356.00	101.2	69.5 - 120	
209 Bi	1796636.00	1.33	1827412.60	98.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000389

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\082SMPL.D\082SMPL.D#
Date Acquired: Mar 22 2018 09:48 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSWLC19IMW2
Misc Info:
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	49.41	9.882	ppb	0.79	100.	
11 B	500.	100.	ppb	1.73	1000.	
23 Na	7,150.	1,430.	ppb	1.35	200000.	
25 Mg	4,908.5	981.7	ppb	2.45	200000.	
27 Al	2,084.	416.8	ppb	2.00	200000.	
28 Si	1,303.	260.6	ppb	12.46	#VALUE!	
29 Si	571.	114.2	ppb	22.09	10000.	
39 K	9,955.	1,991.	ppb	1.14	200000.	
43 Ca	2,993.5	598.7	ppb	0.85	#VALUE!	
44 Ca	2,599.	519.8	ppb	0.82	200000.	
51 V	513.5	102.7	ppb	1.87	1000.	
52 Cr	200.7	40.14	ppb	0.45	2000.	
53 Cr	236.65	47.33	ppb	0.34	#VALUE!	
55 Mn	510.	102.	ppb	0.83	2000.	
56 Fe	1,037.5	207.5	ppb	0.98	#VALUE!	
57 Fe	1,019.	203.8	ppb	1.83	100000.	
59 Co	516.5	103.3	ppb	0.39	1000.	
60 Ni	507.5	101.5	ppb	1.28	1000.	
63 Cu	253.95	50.79	ppb	0.82	#VALUE!	
65 Cu	256.1	51.22	ppb	1.53	2000.	
66 Zn	502.5	100.5	ppb	1.09	2000.	
68 Zn	560.5	112.1	ppb	1.21	#VALUE!	
75 As	101.05	20.21	ppb	0.26	1000.	
82 Se	100.4	20.08	ppb	2.93	1000.	
88 Sr	533.	106.6	ppb	1.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	104.9	20.98	ppb	0.55	1000.	
107 Ag	52.85	10.57	ppb	0.22	100.	
109 Ag	52.75	10.55	ppb	0.68	#VALUE!	
111 Cd	258.5	51.7	ppb	0.50	#VALUE!	
114 Cd	260.	52.	ppb	0.61	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	515.	103.	ppb	0.14	1000.	
120 Sn	517.5	103.5	ppb	0.89	#VALUE!	
121 Sb	105.55	21.11	ppb	0.48	#VALUE!	
123 Sb	103.7	20.74	ppb	0.41	1000.	
135 Ba	2,094.	418.8	ppb	0.26	2000.	
137 Ba	2,101.	420.2	ppb	0.79	#VALUE!	
182 W	100.8	20.16	ppb	0.46	1000.	
203 Tl	101.45	20.29	ppb	1.86	1000.	
205 Tl	101.1	20.22	ppb	1.54	#VALUE!	
208 Pb	102.05	20.41	ppb	1.57	2000.	
232 Th	100.95	20.19	ppb	1.33	1000.	
238 U	103.4	20.68	ppb	1.38	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3339559.30	0.52	3343964.50	99.9	69.5 - 120	
45 Sc	2808843.00	0.70	2753983.00	102.0	69.5 - 120	
72 Ge	518114.69	0.28	501751.53	103.3	69.5 - 120	
159 Tb	3386602.80	0.39	3226356.00	105.0	69.5 - 120	
209 Bi	1877929.40	0.84	1827412.60	102.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000390

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\083SMPL.D\083SMPL.D#
Date Acquired: Mar 22 2018 09:52 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2138-011
Misc Info:
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0029	-0.0006	ppb	245.26	100.	
11 B	8.36	1.672	ppb	8.49	1000.	
23 Na	88.6	17.72	ppb	2.64	200000.	
25 Mg	10.475	2.095	ppb	8.71	200000.	
27 Al	15.065	3.013	ppb	5.01	200000.	
28 Si	493.1	98.62	ppb	16.35	#VALUE!	
29 Si	-181.5	-36.3	ppb	41.27	10000.	
39 K	-18.18	-3.636	ppb	15.88	200000.	
43 Ca	71.7	14.34	ppb	25.55	#VALUE!	
44 Ca	68.6	13.72	ppb	9.06	200000.	
51 V	0.2305	0.0461	ppb	237.09	1000.	
52 Cr	0.819	0.1638	ppb	11.33	2000.	
53 Cr	38.125	7.625	ppb	6.50	#VALUE!	
55 Mn	1.104	0.2208	ppb	3.80	2000.	
56 Fe	49.02	9.804	ppb	21.49	#VALUE!	
57 Fe	16.745	3.349	ppb	6.57	100000.	
59 Co	0.0315	0.0063	ppb	63.21	1000.	
60 Ni	0.2497	0.0499	ppb	24.53	1000.	
63 Cu	0.4065	0.0813	ppb	11.03	#VALUE!	
65 Cu	0.4727	0.0945	ppb	17.41	2000.	
66 Zn	5.085	1.017	ppb	3.87	2000.	
68 Zn	4.574	0.9148	ppb	7.71	#VALUE!	
75 As	0.629	0.1258	ppb	181.56	1000.	
82 Se	1.2025	0.2405	ppb	149.90	1000.	
88 Sr	0.2356	0.0471	ppb	29.19	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0623	0.0125	ppb	35.57	1000.	
107 Ag	-0.0162	-0.0032	ppb	32.60	100.	
109 Ag	0.0133	0.0027	ppb	46.87	#VALUE!	
111 Cd	-0.93	-0.186	ppb	12.62	#VALUE!	
114 Cd	-0.0054	-0.0011	ppb	314.65	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	2.859	0.5718	ppb	3.23	1000.	
120 Sn	3.2295	0.6459	ppb	21.34	#VALUE!	
121 Sb	0.0944	0.0189	ppb	18.05	#VALUE!	
123 Sb	0.136	0.0272	ppb	43.91	1000.	
135 Ba	0.6715	0.1343	ppb	36.63	2000.	
137 Ba	0.547	0.1094	ppb	7.75	#VALUE!	
182 W	0.0781	0.0156	ppb	33.52	1000.	
203 Tl	0.014	0.0028	ppb	132.71	1000.	
205 Tl	0.002	0.0004	ppb	1114.40	#VALUE!	
208 Pb	0.0744	0.0149	ppb	22.59	2000.	
232 Th	0.104	0.0208	ppb	45.98	1000.	
238 U	0.0067	0.0013	ppb	178.19	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3142139.00	1.68	3343964.50	94.0	69.5 - 120	
45 Sc	2686489.50	0.78	2753983.00	97.5	69.5 - 120	
72 Ge	501322.78	0.64	501751.53	99.9	69.5 - 120	
159 Tb	3224471.50	0.43	3226356.00	99.9	69.5 - 120	
209 Bi	1801453.90	0.42	1827412.60	98.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000391

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\084SMPL.D\084SMPL.D#
Date Acquired: Mar 22 2018 09:56 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2138-012
Misc Info:
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0085	-0.0017	ppb	80.51	100.	
11 B	5.205	1.041	ppb	3.19	1000.	
23 Na	88.05	17.61	ppb	2.39	200000.	
25 Mg	10.94	2.188	ppb	8.18	200000.	
27 Al	9.215	1.843	ppb	13.27	200000.	
28 Si	500.	100.	ppb	58.17	#VALUE!	
29 Si	-131.95	-26.39	ppb	124.97	10000.	
39 K	57.1	11.42	ppb	12.95	200000.	
43 Ca	41.565	8.313	ppb	37.62	#VALUE!	
44 Ca	51.25	10.25	ppb	8.20	200000.	
51 V	0.592	0.1184	ppb	76.73	1000.	
52 Cr	0.7655	0.1531	ppb	10.03	2000.	
53 Cr	36.735	7.347	ppb	1.79	#VALUE!	
55 Mn	0.5425	0.1085	ppb	13.12	2000.	
56 Fe	37.25	7.45	ppb	42.16	#VALUE!	
57 Fe	-4.0625	-0.8125	ppb	247.88	100000.	
59 Co	0.0032	0.0006	ppb	801.25	1000.	
60 Ni	0.0923	0.0185	ppb	38.76	1000.	
63 Cu	1.0145	0.2029	ppb	2.85	#VALUE!	
65 Cu	1.0465	0.2093	ppb	3.26	2000.	
66 Zn	2.0145	0.4029	ppb	3.95	2000.	
68 Zn	1.424	0.2848	ppb	22.11	#VALUE!	
75 As	0.911	0.1822	ppb	153.90	1000.	
82 Se	0.886	0.1772	ppb	125.51	1000.	
88 Sr	0.2005	0.0401	ppb	20.11	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0421	0.0084	ppb	10.19	1000.	
107 Ag	-0.0176	-0.0035	ppb	0.89	100.	
109 Ag	-0.0025	-0.0005	ppb	164.99	#VALUE!	
111 Cd	-0.935	-0.187	ppb	21.63	#VALUE!	
114 Cd	0.0006	0.0001	ppb	1653.00	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.665	0.333	ppb	3.15	1000.	
120 Sn	1.7935	0.3587	ppb	15.32	#VALUE!	
121 Sb	0.091	0.0182	ppb	48.39	#VALUE!	
123 Sb	0.128	0.0256	ppb	37.65	1000.	
135 Ba	0.2322	0.0464	ppb	10.60	2000.	
137 Ba	0.2475	0.0495	ppb	28.93	#VALUE!	
182 W	0.0763	0.0153	ppb	23.24	1000.	
203 Tl	-0.0058	-0.0012	ppb	503.17	1000.	
205 Tl	-0.0065	-0.0013	ppb	138.59	#VALUE!	
208 Pb	0.048	0.0096	ppb	48.91	2000.	
232 Th	0.0355	0.0071	ppb	32.06	1000.	
238 U	0.0019	0.0004	ppb	191.14	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3196563.50	1.34	3343964.50	95.6	69.5 - 120	
45 Sc	2704467.30	0.91	2753983.00	98.2	69.5 - 120	
72 Ge	505944.56	0.65	501751.53	100.8	69.5 - 120	
159 Tb	3261138.30	0.99	3226356.00	101.1	69.5 - 120	
209 Bi	1808397.00	0.58	1827412.60	99.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000392

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\085SMPL.D\085SMPL.D#
Date Acquired: Mar 22 2018 10:00 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-020
Misc Info:
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0071	-0.0014	ppb	134.39	100.	
11 B	3.919	0.7838	ppb	8.03	1000.	
23 Na	40.235	8.047	ppb	3.06	200000.	
25 Mg	11.445	2.289	ppb	7.28	200000.	
27 Al	11.95	2.39	ppb	5.50	200000.	
28 Si	517.5	103.5	ppb	33.19	#VALUE!	
29 Si	-86.1	-17.22	ppb	128.80	10000.	
39 K	-22.55	-4.51	ppb	28.51	200000.	
43 Ca	66.75	13.35	ppb	50.45	#VALUE!	
44 Ca	77.2	15.44	ppb	14.53	200000.	
51 V	-0.1084	-0.0217	ppb	373.34	1000.	
52 Cr	0.64	0.128	ppb	26.73	2000.	
53 Cr	39.815	7.963	ppb	1.19	#VALUE!	
55 Mn	0.596	0.1192	ppb	11.17	2000.	
56 Fe	36.065	7.213	ppb	21.35	#VALUE!	
57 Fe	3.49	0.698	ppb	444.27	100000.	
59 Co	-0.0083	-0.0017	ppb	22.53	1000.	
60 Ni	0.0538	0.0108	ppb	65.28	1000.	
63 Cu	3.938	0.7876	ppb	2.35	#VALUE!	
65 Cu	3.9715	0.7943	ppb	6.02	2000.	
66 Zn	0.6065	0.1213	ppb	52.07	2000.	
68 Zn	0.4119	0.0824	ppb	154.30	#VALUE!	
75 As	0.8105	0.1621	ppb	167.18	1000.	
82 Se	0.679	0.1358	ppb	195.80	1000.	
88 Sr	0.3381	0.0676	ppb	7.79	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.072	0.0144	ppb	23.29	1000.	
107 Ag	-0.0035	-0.0007	ppb	258.90	100.	
109 Ag	-0.0024	-0.0005	ppb	482.78	#VALUE!	
111 Cd	-0.8895	-0.1779	ppb	30.11	#VALUE!	
114 Cd	0.01	0.002	ppb	219.59	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	1.4025	0.2805	ppb	9.72	1000.	
120 Sn	1.584	0.3168	ppb	2.36	#VALUE!	
121 Sb	0.0671	0.0134	ppb	71.25	#VALUE!	
123 Sb	0.0919	0.0184	ppb	8.35	1000.	
135 Ba	0.1986	0.0397	ppb	92.72	2000.	
137 Ba	0.2433	0.0487	ppb	39.93	#VALUE!	
182 W	0.0203	0.0041	ppb	114.06	1000.	
203 Tl	0.023	0.0046	ppb	115.02	1000.	
205 Tl	-0.0143	-0.0029	ppb	60.35	#VALUE!	
208 Pb	0.0049	0.001	ppb	194.66	2000.	
232 Th	0.0181	0.0036	ppb	63.99	1000.	
238 U	-0.0029	-0.0006	ppb	38.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3079117.00	1.45	3343964.50	92.1	69.5 - 120	
45 Sc	2685488.00	0.75	2753983.00	97.5	69.5 - 120	
72 Ge	500902.63	0.41	501751.53	99.8	69.5 - 120	
159 Tb	3251366.80	0.98	3226356.00	100.8	69.5 - 120	
209 Bi	1797501.30	1.40	1827412.60	98.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000393

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\086SMPL.D\086SMPL.D#
Date Acquired: Mar 22 2018 10:04 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2501
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0008	-0.0008	ppb	188.17	100.	
11 B	0.4656	0.4656	ppb	2.05	1000.	
23 Na	-1.527	-1.527	ppb	9.06	200000.	
25 Mg	0.1445	0.1445	ppb	119.31	200000.	
27 Al	0.8039	0.8039	ppb	2.86	200000.	
28 Si	197.5	197.5	ppb	13.60	#VALUE!	
29 Si	36.58	36.58	ppb	87.15	10000.	
39 K	-3.174	-3.174	ppb	67.74	200000.	
43 Ca	4.302	4.302	ppb	55.83	#VALUE!	
44 Ca	5.528	5.528	ppb	24.11	200000.	
51 V	0.0654	0.0654	ppb	87.79	1000.	
52 Cr	0.0224	0.0224	ppb	54.55	2000.	
53 Cr	0.5035	0.5035	ppb	27.63	#VALUE!	
55 Mn	0.0233	0.0233	ppb	42.80	2000.	
56 Fe	9.99	9.99	ppb	33.46	#VALUE!	
57 Fe	1.304	1.304	ppb	162.27	100000.	
59 Co	-0.0004	-0.0004	ppb	315.54	1000.	
60 Ni	0.0009	0.0009	ppb	368.62	1000.	
63 Cu	-0.0112	-0.0112	ppb	36.58	#VALUE!	
65 Cu	-0.0177	-0.0177	ppb	19.94	2000.	
66 Zn	0.0465	0.0465	ppb	145.27	2000.	
68 Zn	0.0684	0.0684	ppb	131.58	#VALUE!	
75 As	-0.0102	-0.0102	ppb	1970.60	1000.	
82 Se	0.1261	0.1261	ppb	17.30	1000.	
88 Sr	0.0045	0.0045	ppb	80.14	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0062	0.0062	ppb	67.80	1000.	
107 Ag	-0.004	-0.004	ppb	17.74	100.	
109 Ag	0.0022	0.0022	ppb	57.31	#VALUE!	
111 Cd	-0.1724	-0.1724	ppb	7.65	#VALUE!	
114 Cd	0.0059	0.0059	ppb	13.59	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0271	0.0271	ppb	46.38	1000.	
120 Sn	0.0318	0.0318	ppb	26.77	#VALUE!	
121 Sb	0.0013	0.0013	ppb	130.17	#VALUE!	
123 Sb	0.0051	0.0051	ppb	107.38	1000.	
135 Ba	-0.0048	-0.0048	ppb	212.92	2000.	
137 Ba	0.0133	0.0133	ppb	85.07	#VALUE!	
182 W	-0.0028	-0.0028	ppb	44.23	1000.	
203 Tl	0.0055	0.0055	ppb	96.90	1000.	
205 Tl	0.0008	0.0008	ppb	195.99	#VALUE!	
208 Pb	0.0071	0.0071	ppb	65.02	2000.	
232 Th	-0.0003	-0.0003	ppb	488.30	1000.	
238 U	-0.0002	-0.0002	ppb	500.33	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3038497.00	0.94	3343964.50	90.9	69.5 - 120	
45 Sc	2655017.30	1.13	2753983.00	96.4	69.5 - 120	
72 Ge	480131.69	1.22	501751.53	95.7	69.5 - 120	
159 Tb	3130577.30	0.48	3226356.00	97.0	69.5 - 120	
209 Bi	1753954.40	0.56	1827412.60	96.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000394

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\087SMPL.D\087SMPL.D#
Date Acquired: Mar 22 2018 10:08 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	-0.0001	-0.0001	ppb	3055.90	100.	
11 B	0.3198	0.3198	ppb	13.26	1000.	
23 Na	-1.401	-1.401	ppb	13.17	200000.	
25 Mg	0.1755	0.1755	ppb	22.11	200000.	
27 Al	0.7425	0.7425	ppb	12.37	200000.	
28 Si	177.3	177.3	ppb	21.91	#VALUE!	
29 Si	37.79	37.79	ppb	76.98	10000.	
39 K	-3.724	-3.724	ppb	33.38	200000.	
43 Ca	5.733	5.733	ppb	4.98	#VALUE!	
44 Ca	6.226	6.226	ppb	28.83	200000.	
51 V	0.0455	0.0455	ppb	72.36	1000.	
52 Cr	0.0021	0.0021	ppb	1182.20	2000.	
53 Cr	0.6149	0.6149	ppb	13.82	#VALUE!	
55 Mn	0.0191	0.0191	ppb	20.66	2000.	
56 Fe	10.84	10.84	ppb	18.64	#VALUE!	
57 Fe	0.4116	0.4116	ppb	560.50	100000.	
59 Co	0.0002	0.0002	ppb	797.90	1000.	
60 Ni	0.	0.	ppb	13564.00	1000.	
63 Cu	-0.0085	-0.0085	ppb	8.51	#VALUE!	
65 Cu	-0.0071	-0.0071	ppb	36.44	2000.	
66 Zn	-0.0163	-0.0163	ppb	164.47	2000.	
68 Zn	0.1355	0.1355	ppb	53.17	#VALUE!	
75 As	-0.1	-0.1	ppb	25.97	1000.	
82 Se	-0.0397	-0.0397	ppb	861.83	1000.	
88 Sr	0.0012	0.0012	ppb	402.43	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	-0.0003	-0.0003	ppb	977.75	1000.	
107 Ag	-0.0035	-0.0035	ppb	94.63	100.	
109 Ag	0.0001	0.0001	ppb	1766.40	#VALUE!	
111 Cd	-0.1558	-0.1558	ppb	39.22	#VALUE!	
114 Cd	0.0017	0.0017	ppb	98.16	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0209	0.0209	ppb	54.14	1000.	
120 Sn	0.0203	0.0203	ppb	45.53	#VALUE!	
121 Sb	-0.0057	-0.0057	ppb	46.48	#VALUE!	
123 Sb	-0.0007	-0.0007	ppb	879.89	1000.	
135 Ba	0.0097	0.0097	ppb	88.39	2000.	
137 Ba	0.0209	0.0209	ppb	25.69	#VALUE!	
182 W	-0.002	-0.002	ppb	127.04	1000.	
203 Tl	0.0092	0.0092	ppb	53.74	1000.	
205 Tl	0.0018	0.0018	ppb	133.88	#VALUE!	
208 Pb	-0.0019	-0.0019	ppb	325.76	2000.	
232 Th	-0.0008	-0.0008	ppb	131.57	1000.	
238 U	-0.0007	-0.0007	ppb	54.35	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3140664.30	0.81	3343964.50	93.9	69.5 - 120	
45 Sc	2673341.80	1.16	2753983.00	97.1	69.5 - 120	
72 Ge	484975.81	0.93	501751.53	96.7	69.5 - 120	
159 Tb	3142478.00	0.77	3226356.00	97.4	69.5 - 120	
209 Bi	1744423.40	1.01	1827412.60	95.5	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000395

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\088_CCV.D\088_CCV.D#
Date Acquired: Mar 22 2018 10:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	25.07	ppb	2.09	25	100.28	
11 B	24.3	ppb	1.81	25	97.2	
23 Na	4,812.	ppb	1.25	5,000	96.24	
25 Mg	4,862.	ppb	0.94	5,000	97.24	
27 Al	495.1	ppb	0.65	500	99.02	
28 Si	565.3	ppb	6.30	500	113.06	
29 Si	434.	ppb	7.95	500	86.8	Fail
39 K	5,027.	ppb	0.76	5,000	100.54	
43 Ca	5,032.	ppb	1.01	5,000	100.64	
44 Ca	5,143.	ppb	0.81	5,000	102.86	
51 V	25.34	ppb	1.26	25	101.36	
52 Cr	25.26	ppb	0.84	25	101.04	
53 Cr	25.57	ppb	2.17	25	102.28	
55 Mn	25.39	ppb	0.15	25	101.56	
56 Fe	5,084.	ppb	1.34	5,000	101.68	
57 Fe	5,145.	ppb	1.44	5,000	102.9	
59 Co	25.29	ppb	0.16	25	101.16	
60 Ni	25.21	ppb	0.57	25	100.84	
63 Cu	25.49	ppb	0.47	25	101.96	
65 Cu	25.5	ppb	0.53	25	102	
66 Zn	25.59	ppb	1.69	25	102.36	
68 Zn	25.26	ppb	1.64	25	101.04	
75 As	25.16	ppb	0.18	25	100.64	
82 Se	25.44	ppb	0.56	25	101.76	
88 Sr	25.78	ppb	1.42	25	103.12	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.53	ppb	0.54	25	102.12	
107 Ag	25.83	ppb	0.49	25	103.32	
109 Ag	25.7	ppb	0.70	25	102.8	
111 Cd	25.17	ppb	0.61	25	100.68	
114 Cd	25.5	ppb	0.69	25	102	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.4	ppb	0.39	25	101.6	
120 Sn	25.57	ppb	1.37	25	102.28	
121 Sb	25.42	ppb	1.18	25	101.68	
123 Sb	25.58	ppb	2.04	25	102.32	
135 Ba	25.78	ppb	0.23	25	103.12	
137 Ba	25.67	ppb	0.52	25	102.68	
182 W	24.62	ppb	1.46	25	98.48	
203 Tl	25.19	ppb	0.90	25	100.76	
205 Tl	24.93	ppb	0.47	25	99.72	
208 Pb	24.88	ppb	0.56	25	99.52	
232 Th	24.94	ppb	0.37	25	99.76	
238 U	25.37	ppb	0.72	25	101.48	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3502760.80	2.70	3343964.50	104.7	80 - 120.4	
45 Sc	2996470.30	0.86	2753983.00	108.8	80 - 120.4	
72 Ge	532010.56	1.51	501751.53	106.0	80 - 120.4	
159 Tb	3462009.80	0.93	3226356.00	107.3	80 - 120.4	
209 Bi	1920415.00	0.78	1827412.60	105.1	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC22E.B\089_CCB.D\089_CCB.D#
Date Acquired: Mar 22 2018 10:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 22 2018 05:16 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0006	ppb	202.12	1.00	
11 B	0.5168	ppb	5.25	1.00	
23 Na	-1.321	ppb	1.27	1.00	
25 Mg	0.0508	ppb	85.66	1.00	
27 Al	0.4334	ppb	12.57	1.00	
28 Si	169.	ppb	41.64	1.00	
29 Si	34.07	ppb	89.29	1.00	
39 K	-4.171	ppb	32.37	1.00	
43 Ca	3.533	ppb	59.89	1.00	
44 Ca	2.441	ppb	82.06	1.00	
51 V	-0.0172	ppb	182.45	1.00	
52 Cr	-0.0036	ppb	141.13	1.00	
53 Cr	0.1868	ppb	32.48	1.00	
55 Mn	0.0211	ppb	45.68	1.00	
56 Fe	7.531	ppb	18.18	1.00	
57 Fe	2.875	ppb	73.74	1.00	
59 Co	0.0019	ppb	39.63	1.00	
60 Ni	0.0039	ppb	150.80	1.00	
63 Cu	-0.0073	ppb	67.26	1.00	
65 Cu	-0.0175	ppb	36.38	1.00	
66 Zn	0.042	ppb	31.28	1.00	
68 Zn	-0.0295	ppb	450.36	1.00	
75 As	-0.0883	ppb	155.88	1.00	
82 Se	0.0156	ppb	683.80	1.00	
88 Sr	-0.0012	ppb	120.72	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0118	ppb	30.82	1.00	
107 Ag	-0.0021	ppb	21.31	1.00	
109 Ag	0.0004	ppb	228.56	1.00	
111 Cd	-0.1369	ppb	7.08	1.00	
114 Cd	0.0076	ppb	148.31	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0234	ppb	139.56	1.00	
120 Sn	0.0355	ppb	27.43	1.00	
121 Sb	-0.0016	ppb	58.98	1.00	
123 Sb	0.0119	ppb	5.39	1.00	
135 Ba	0.0234	ppb	87.58	1.00	
137 Ba	0.0195	ppb	54.30	1.00	
182 W	0.0095	ppb	68.20	1.00	
203 Tl	0.0059	ppb	52.56	1.00	
205 Tl	0.0043	ppb	67.06	1.00	
208 Pb	-0.0013	ppb	141.24	1.00	
232 Th	0.0104	ppb	19.51	1.00	
238 U	0.0023	ppb	70.80	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3148940.00	2.05	3343964.50	94.2	79.5 - 120	
45 Sc	2702524.00	1.45	2753983.00	98.1	79.5 - 120	
72 Ge	485464.06	0.70	501751.53	96.8	79.5 - 120	
159 Tb	3112458.80	0.68	3226356.00	96.5	79.5 - 120	
209 Bi	1760891.60	0.28	1827412.60	96.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC22E.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000397

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: J (Agilent 7500) **ANALYST**: MD **ANALYSIS DATE**: 03/26/2018

FILE NAME: JLC26B **METHOD: ICP-MS**

- ☑ 200.8
- ☑ 6020
- ☐ DOD

REVIEWED
JS 3.28.18
KATAHDIN ANALYTICAL
METALS SECTION

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by MD (initals) on 3/26/18 (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW17623	03/21/2018	03/21/2019	0 ug/L
Standard 1	MW17625	03/21/2018	04/26/2018	Varies by Element
ICV	MW17628	03/21/2018	06/21/2018	Varies by Element
PQL	MW17629	03/21/2018	04/30/2018	Varies by Element
LRS1	MW17597	03/02/2018	06/02/2018	Varies by Element
LRS2	MW17634	03/26/2018	05/14/2018	Varies by Element
ICSA	MW17630	03/21/2018	03/27/2018	Varies by Element
ICSAB	MW17631	03/21/2018	03/27/2018	Varies by Element
CCV	MW17626	03/21/2018	04/26/2018	Varies by Element
Internal Standard	MW17633	03/26/2018	06/26/2018	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

- Used Ge for Int. Std. due to instability of Y
- CCB analyzed @ 170a failed for Fe, accepted bracketed results that were 10x the blank concentration

JS 3.28.18

Dilutions: Some samples were diluted based on history or due to interfering element concentrations. Dilution preparations are as follows:

20x diln.: 0.5mL of sample (pipet M18) + 9.5mL of MW17623 (pipet M18)

10x diln.: 1.0mL of sample (pipet M19) + 9.0mL of MW17623 (pipet M18)

25x serial diln.: 1.6mL of 5x diln. of sample(pipet M18) + 6.4mL of MW17623(pipet M18)

5x diln.: 1.6mL of sample(pipet M18) + 6.4mL ofMW17623(pipet M18)

Post Spike: 0.08mL of MW17555(pipet M16) into 5x diln. of sample(pipet M18)

(Unless otherwise specified)

INSTRUMENT RUNLOG

Instrument: AGILENT 7500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
6020 TUNE	1	JLC26B	3/26/2018	4:14:00 13:56	MD
200.8 TUNE	1	JLC26B	3/26/2018	4:14:00 13:59	MD
Cal Blank	1	JLC26B	3/26/2018	4:14:00 16:14	MD
Cal Std 6	1	JLC26B	3/26/2018	4:18:00 16:18	MD
ICV	1	JLC26B	3/26/2018	4:22:00 16:22	MD
ICB	1	JLC26B	3/26/2018	4:26:00 16:26	MD
PQL	1	JLC26B	3/26/2018	4:29:00 16:29	MD
RINSE	1	JLC26B	3/26/2018	4:33:00 16:33	MD
ICSA	1	JLC26B	3/26/2018	4:37:00 16:37	MD
ICSAB	1	JLC26B	3/26/2018	4:41:00 16:41	MD
RINSE	1	JLC26B	3/26/2018	4:46:00 16:46	MD
LRS1	1	JLC26B	3/26/2018	4:49:00 16:49	MD
LRS2	1	JLC26B	3/26/2018	4:53:00 16:53	MD
RINSE	1	JLC26B	3/26/2018	4:57:00 16:57	MD
RINSE	1	JLC26B	3/26/2018	5:01:00 17:01	MD
CCV	1	JLC26B	3/26/2018	5:05:00 17:05	MD
CCB	1	JLC26B	3/26/2018	5:09:00 17:09	MD
SL2287-001	1	JLC26B	3/26/2018	5:13:00 17:13	MD
SL2394-001	1	JLC26B	3/26/2018	5:17:00 17:17	MD
SL2395-001	1	JLC26B	3/26/2018	5:21:00 17:21	MD
SL2396-001	1	JLC26B	3/26/2018	5:25:00 17:25	MD
SL2412-001	1	JLC26B	3/26/2018	5:29:00 17:29	MD
SL2443-001	1	JLC26B	3/26/2018	5:33:00 17:33	MD
SL2465-001	1	JLC26B	3/26/2018	5:37:00 17:37	MD
SL2466-001	1	JLC26B	3/26/2018	5:41:00 17:41	MD
SL2079-002	5	JLC26B	3/26/2018	5:45:00 17:45	MD
SL2079-002	10	JLC26B	3/26/2018	5:49:00 17:49	MD
CCV	1	JLC26B	3/26/2018	5:53:00 17:53	MD
CCB	1	JLC26B	3/26/2018	5:57:00 17:57	MD
SL2079-002	20	JLC26B	3/26/2018	6:02:00 18:02	MD
SL2133-001	5	JLC26B	3/26/2018	6:06:00 18:06	MD
SL2133-001	10	JLC26B	3/26/2018	6:10:00 18:10	MD
SL2133-001	20	JLC26B	3/26/2018	6:14:00 18:14	MD
RINSE	1	JLC26B	3/26/2018	6:18:00 18:18	MD
PBWLC23IMW1	1	JLC26B	3/26/2018	6:22:00 18:22	MD
LCSWLC23IMW1	5	JLC26B	3/26/2018	6:26:00 18:26	MD
SL2210-1	1	JLC26B	3/26/2018	6:30:00 18:30	MD
SL2290-001	1	JLC26B	3/26/2018	6:34:00 18:34	MD
SL2308-001	1	JLC26B	3/26/2018	6:38:00 18:38	MD
CCV	1	JLC26B	3/26/2018	6:42:00 18:42	MD
CCB	1	JLC26B	3/26/2018	6:46:00 18:46	MD
SL2347-001	5	JLC26B	3/26/2018	6:50:00 18:50	MD
SL2348-001	1	JLC26B	3/26/2018	6:54:00 18:54	MD
RINSE	5	JLC26B	3/26/2018	6:58:00 18:58	MD

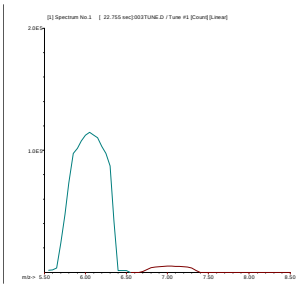
SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
PBWLC23IMW2	5	JLC26B	3/26/2018	7:02:00 19:02	MD
LCSWLC23IMW2	5	JLC26B	3/26/2018	7:07:00 19:07	MD
SL2329-016	5	JLC26B	3/26/2018	7:11:00 19:11	MD
RINSE	1	JLC26B	3/26/2018	7:15:00 19:15	MD
PBWLC26IMW1	1	JLC26B	3/26/2018	7:19:00 19:19	MD
LCSWLC26IMW1	5	JLC26B	3/26/2018	7:23:00 19:23	MD
SL2416-001	1	JLC26B	3/26/2018	7:27:00 19:27	MD
CCV	1	JLC26B	3/26/2018	7:31:00 19:31	MD
CCB	1	JLC26B	3/26/2018	7:35:00 19:35	MD
SL2417-001	1	JLC26B	3/26/2018	7:40:00 19:40	MD
SL2438-001	1	JLC26B	3/26/2018	7:44:00 19:44	MD
SL2438-002	1	JLC26B	3/26/2018	7:48:00 19:48	MD
SL2446-001	1	JLC26B	3/26/2018	7:52:00 19:52	MD
SL2447-001	1	JLC26B	3/26/2018	7:56:00 19:56	MD
SL2449-001	1	JLC26B	3/26/2018	8:01:00 20:01	MD
SL2454-001	1	JLC26B	3/26/2018	8:05:00 20:05	MD
SL2464-001	1	JLC26B	3/26/2018	8:09:00 20:09	MD
SL2210-001	1	JLC26B	3/26/2018	8:13:00 20:13	MD
CCV	1	JLC26B	3/26/2018	8:17:00 20:17	MD
CCB	1	JLC26B	3/26/2018	8:21:00 20:21	MD
PQL	1	JLC26B	3/26/2018	8:26:00 20:26	MD
CCV	1	JLC26B	3/26/2018	8:30:00 20:30	MD
CCB	1	JLC26B	3/26/2018	8:34:00 20:34	MD

6020 QC Tune Report

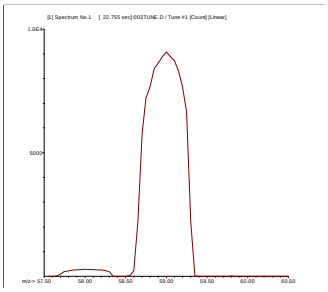
Data File: C:\ICPCHEM\1\DATA\JLC26A.B\003TUNE.D
Date Acquired: Mar 26 2018 01:56 pm
Acq. Method: TN6020E.M
Operator: MD
Sample Name: 6020 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

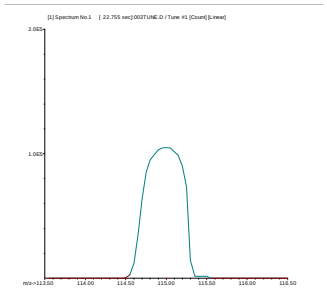
Element	Actual	Required	Flag
7 Li	1.71	5.00	
59 Co	1.52	5.00	
115 In	0.81	5.00	
205 Tl	1.99	5.00	



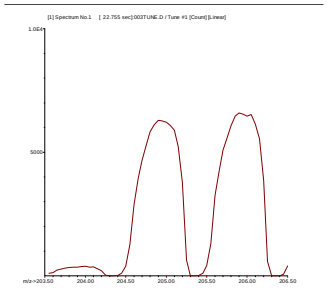
7 Li
Mass Calib.
Actual: 7.05
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.60
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



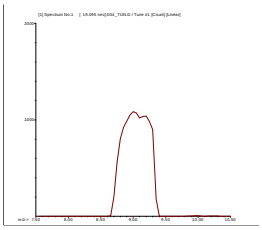
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

200.8 QC Tune Report

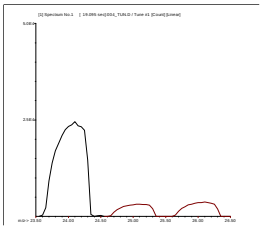
Data File: C:\ICPCHEM\1\DATA\JLC26A.B\004_TUN.D
Date Acquired: Mar 26 2018 01:59 pm
Acq. Method: TN200_8E.M
Operator: MD
Sample Name: 200.8 TUNE
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\TN200_8E.M

RSD (%)

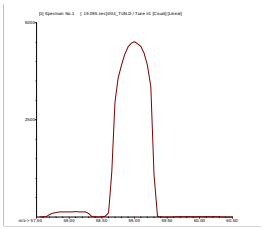
Element	Actual	Required	Flag
9 Be	2.98	5.00	
24 Mg	3.08	5.00	
59 Co	1.18	5.00	
115 In	0.95	5.00	
208 Pb	3.81	5.00	



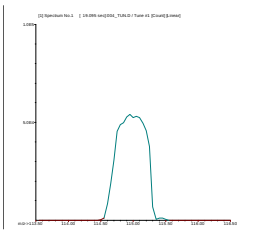
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90 - 9.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



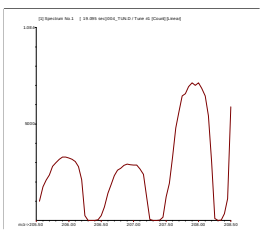
24 Mg
Mass Calib.
Actual: 24.10
Required: 23.90 - 24.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width
Actual: 0.70
Required: 1.00
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90 - 208.10
Flag:
Peak Width
Actual: 0.65
Required: 1.00
Flag:

Tune Result: Pass

Katahdin Analytical Services 4000402

Calibration Blank QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.I
Date Acquired: Mar 26 2018 04:14 pm
Operator: MD
Sample Name: Cal Blank
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 26 2018 04:16 pm
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	2473849.00	A	8959.00	0.36
9	Be	12.22	P	3.33	27.27
11	B	274.46	P	22.20	8.09
23	Na	51235.59	P	2246.00	4.38
25	Mg	471.15	P	85.99	18.25
27	Al	4235.25	P	416.60	9.84
28	Si	7539261.00	A	161400.00	2.14
29	Si	455305.59	P	3101.00	0.68
39	K	953015.00	A	12640.00	1.33
43	Ca	259.29	P	12.83	4.95
44	Ca	11045.52	P	105.90	0.96
45	Sc	2284758.00	A	15920.00	0.70
51	V	1403.03	P	453.20	32.30
52	Cr	5407.80	P	53.65	0.99
53	Cr	3722.81	P	119.80	3.22
55	Mn	1337.88	P	30.98	2.32
56	Fe	1274380.00	A	22310.00	1.75
57	Fe	12153.97	P	39.83	0.33
59	Co	100.01	P	29.06	29.06
60	Ni	70.04	P	13.48	19.25
63	Cu	182.23	P	42.21	23.16
65	Cu	92.22	P	5.09	5.52
66	Zn	627.81	P	57.39	9.14
68	Zn	2689.23	P	122.20	4.54
72	Ge	440097.91	P	5379.00	1.22
75	As	-164.01	P	109.60	66.83
82	Se	-18.04	P	15.11	83.77
88	Sr	85.20	P	12.83	15.06
89	Y	2975680.00	A	20190.00	0.68
98	Mo	63.01	P	3.35	5.31
107	Ag	30.00	P	5.77	19.25
109	Ag	18.89	P	12.62	66.81
111	Cd	677.96	P	48.55	7.16
114	Cd	-11.76	P	6.42	54.58
115	In	2691134.00	A	6773.00	0.25
118	Sn	341.13	P	13.88	4.07
120	Sn	584.48	P	65.01	11.12
121	Sb	30.00	P	11.55	38.50
123	Sb	27.78	P	10.71	38.55
135	Ba	20.00	P	12.02	60.10
137	Ba	28.89	P	12.62	43.68
159	Tb	3175870.00	A	30520.00	0.96
182	W	47.78	P	13.47	28.19
203	Tl	53.34	P	3.33	6.25
205	Tl	111.12	P	20.37	18.33
208	Pb	255.57	P	9.62	3.77
209	Bi	1777464.00	A	16340.00	0.92
232	Th	21.11	P	11.71	55.47
238	U	14.44	P	8.39	58.08

Calibration Standard QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\016CALI.D\016CALI.D#
Date Acquired: Mar 26 2018 04:18 pm
Operator: MD
Sample Name: Cal Std 6
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal Update: Mar 26 2018 04:17 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	2681788.00	A	905.40	0.03
9 Be	87096.46	P	360.90	0.41
11 B	47879.23	P	1871.00	3.91
23 Na	58302288.00	A	312200.00	0.54
25 Mg	5022105.00	A	66580.00	1.33
27 Al	4906729.00	A	37400.00	0.76
28 Si	10234750.00	A	212000.00	2.07
29 Si	599871.63	P	2526.00	0.42
39 K	66228248.00	A	388500.00	0.59
43 Ca	120387.50	P	1336.00	1.11
44 Ca	1972732.00	A	12090.00	0.61
45 Sc	2498219.00	A	42510.00	1.70
51 V	426029.50	P	6586.00	1.55
52 Cr	366109.59	P	3219.00	0.88
53 Cr	46366.25	P	616.30	1.33
55 Mn	458450.31	P	834.10	0.18
56 Fe	74326488.00	A	1260000.00	1.70
57 Fe	1813827.00	A	36220.00	2.00
59 Co	389735.50	P	4343.00	1.11
60 Ni	86330.28	P	1030.00	1.19
63 Cu	202205.91	P	1238.00	0.61
65 Cu	93872.69	P	1049.00	1.12
66 Zn	47959.70	P	389.70	0.81
68 Zn	36543.28	P	250.80	0.69
72 Ge	470476.50	P	4984.00	1.06
75 As	46968.64	P	411.20	0.88
82 Se	3194.78	P	33.48	1.05
88 Sr	476432.19	P	3865.00	0.81
89 Y	3267937.00	A	25690.00	0.79
98 Mo	153117.80	P	1136.00	0.74
107 Ag	230630.80	P	1793.00	0.78
109 Ag	220132.59	P	1855.00	0.84
111 Cd	45095.26	P	532.40	1.18
114 Cd	97116.70	P	608.00	0.63
115 In	2931492.00	A	32490.00	1.11
118 Sn	132452.70	P	1300.00	0.98
120 Sn	181898.09	P	1175.00	0.65
121 Sb	169528.30	P	1281.00	0.76
123 Sb	128567.80	P	1153.00	0.90
135 Ba	38160.71	P	365.30	0.96
137 Ba	65532.24	P	232.00	0.35
159 Tb	3502280.00	A	55670.00	1.59
182 W	139840.41	P	655.60	0.47
203 Tl	124072.30	P	941.20	0.76
205 Tl	297058.00	P	1317.00	0.44
208 Pb	407122.91	P	2023.00	0.50
209 Bi	1897230.00	A	31040.00	1.64
232 Th	455860.50	P	416.90	0.09
238 U	422354.31	P	4275.00	1.01

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2681787.80	0.03	2473849.30	108.4	79.5 - 120.4	
45 Sc	2498219.30	1.70	2284758.30	109.3	79.5 - 120.4	
72 Ge	470476.47	1.06	440097.94	106.9	79.5 - 120.4	
159 Tb	3502279.50	1.59	3175870.30	110.3	79.5 - 120.4	
209 Bi	1897230.10	1.64	1777464.10	106.7	79.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000404

ICV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\017_ICV.D\017_ICV.D#
Date Acquired: Mar 26 2018 04:22 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICV
Misc Info:
Vial Number: 1202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.499998 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	19.12	ppb	1.59	20	95.6	
11 B	20.84	ppb	4.10	20	104.2	
23 Na	3,930.	ppb	1.08	4,000	98.25	
25 Mg	4,012.	ppb	0.60	4,000	100.3	
27 Al	403.	ppb	1.31	400	100.75	
28 Si	166.8	ppb	103.30	400	41.7	
29 Si	155.1	ppb	77.37	400	38.775	Fail
39 K	3,930.	ppb	1.19	4,000	98.25	
43 Ca	3,924.	ppb	1.56	4,000	98.1	
44 Ca	4,003.	ppb	1.63	4,000	100.075	
51 V	19.4	ppb	0.66	20	97	
52 Cr	19.4	ppb	1.66	20	97	
53 Cr	18.79	ppb	2.39	20	93.95	
55 Mn	19.46	ppb	1.14	20	97.3	
56 Fe	3,925.	ppb	1.68	4,000	98.125	
57 Fe	3,993.	ppb	1.31	4,000	99.825	
59 Co	19.52	ppb	1.16	20	97.6	
60 Ni	19.67	ppb	1.31	20	98.35	
63 Cu	19.42	ppb	1.06	20	97.1	
65 Cu	19.59	ppb	0.57	20	97.95	
66 Zn	20.16	ppb	1.13	20	100.8	
68 Zn	19.58	ppb	1.34	20	97.9	
75 As	19.53	ppb	2.40	20	97.65	
82 Se	19.96	ppb	2.73	20	99.8	
88 Sr	19.15	ppb	2.21	20	95.75	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	38.12	ppb	1.50	40	95.3	
107 Ag	19.61	ppb	0.53	20	98.05	
109 Ag	19.47	ppb	0.19	20	97.35	
111 Cd	19.8	ppb	0.78	20	99	
114 Cd	19.96	ppb	0.86	20	99.8	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	19.97	ppb	1.31	20	99.85	
120 Sn	19.63	ppb	0.96	20	98.15	
121 Sb	19.73	ppb	1.03	20	98.65	
123 Sb	19.47	ppb	0.77	20	97.35	
135 Ba	19.67	ppb	3.10	20	98.35	
137 Ba	19.75	ppb	1.83	20	98.75	
182 W	19.76	ppb	1.02	20	98.8	
203 Tl	20.08	ppb	1.08	20	100.4	
205 Tl	19.96	ppb	0.87	20	99.8	
208 Pb	19.59	ppb	0.85	20	97.95	
232 Th	19.49	ppb	0.97	20	97.45	
238 U	19.45	ppb	1.59	20	97.25	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2713370.50	1.36	2473849.30	109.7	80 - 120.4	
45 Sc	2469661.00	1.36	2284758.30	108.1	80 - 120.4	
72 Ge	469300.03	1.68	440097.94	106.6	80 - 120.4	
159 Tb	3439755.80	1.60	3175870.30	108.3	80 - 120.4	
209 Bi	1908344.10	0.77	1777464.10	107.4	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000405

ICB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\018_ICB.D\018_ICB.D#
Date Acquired: Mar 26 2018 04:26 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICB
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-ICB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0014	ppb	14.73	1.00	
11 B	0.7993	ppb	14.24	1.00	
23 Na	-0.3832	ppb	103.68	1.00	
25 Mg	-0.4978	ppb	13.63	1.00	
27 Al	-0.6092	ppb	12.45	1.00	
28 Si	-55.5	ppb	126.22	1.00	
29 Si	-5.027	ppb	810.22	1.00	
39 K	-0.1783	ppb	660.12	1.00	
43 Ca	2.034	ppb	222.07	1.00	
44 Ca	-1.685	ppb	198.99	1.00	
51 V	-0.055	ppb	119.00	1.00	
52 Cr	-0.0058	ppb	503.13	1.00	
53 Cr	-0.2759	ppb	74.56	1.00	
55 Mn	-0.0091	ppb	123.50	1.00	
56 Fe	-5.857	ppb	40.98	1.00	
57 Fe	0.8475	ppb	269.14	1.00	
59 Co	0.0035	ppb	50.10	1.00	
60 Ni	-0.0038	ppb	324.37	1.00	
63 Cu	0.01	ppb	43.13	1.00	
65 Cu	-0.0061	ppb	78.44	1.00	
66 Zn	0.0404	ppb	195.19	1.00	
68 Zn	-0.2269	ppb	111.02	1.00	
75 As	-0.0421	ppb	51.96	1.00	
82 Se	0.0742	ppb	404.29	1.00	
88 Sr	0.0034	ppb	108.51	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0123	ppb	48.65	1.00	
107 Ag	-0.0005	ppb	1059.00	1.00	
109 Ag	-0.0008	ppb	311.97	1.00	
111 Cd	-0.0161	ppb	65.26	1.00	
114 Cd	0.0056	ppb	41.41	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0364	ppb	50.49	1.00	
120 Sn	0.0031	ppb	246.46	1.00	
121 Sb	0.0033	ppb	95.90	1.00	
123 Sb	-0.0009	ppb	496.28	1.00	
135 Ba	-0.0144	ppb	89.19	1.00	
137 Ba	-0.0027	ppb	67.06	1.00	
182 W	0.0213	ppb	12.18	1.00	
203 Tl	0.003	ppb	209.22	1.00	
205 Tl	0.0036	ppb	61.33	1.00	
208 Pb	-0.0041	ppb	56.27	1.00	
232 Th	0.0069	ppb	19.69	1.00	
238 U	0.0028	ppb	30.48	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2468161.00	2.33	2473849.30	99.8	79.5 - 120	
45 Sc	2280775.30	1.48	2284758.30	99.8	79.5 - 120	
72 Ge	437485.88	1.00	440097.94	99.4	79.5 - 120	
159 Tb	3153444.80	0.78	3175870.30	99.3	79.5 - 120	
209 Bi	1766749.10	0.55	1777464.10	99.4	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000406

PQL QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\019_PQL.D\019_PQL.D#
Date Acquired: Mar 26 2018 04:29 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PQL
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 69.599998 - 130.4

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	0.1959	ppb	9.60	0.20	97.95	
11 B	4.723	ppb	2.61	4.00	118.075	
23 Na	210.1	ppb	1.58	200.00	105.05	
25 Mg	20.22	ppb	2.14	20.00	101.1	
27 Al	19.04	ppb	0.73	20.00	95.2	
28 Si	199.1	ppb	87.85	100.00	199.1	
29 Si	172.1	ppb	61.77	100.00	172.1	Fail
39 K	201.3	ppb	0.92	200.00	100.65	
43 Ca	18.38	ppb	32.99	20.00	91.9	
44 Ca	19.97	ppb	12.54	20.00	99.85	
51 V	0.9747	ppb	1.82	1.00	97.47	
52 Cr	1.019	ppb	4.12	1.00	101.9	
53 Cr	0.6684	ppb	10.00	---	#VALUE!	
55 Mn	0.3965	ppb	0.99	0.40	99.125	
56 Fe	16.76	ppb	22.28	20.00	83.8	
57 Fe	17.4	ppb	8.30	20.00	87	
59 Co	0.2156	ppb	3.90	0.20	107.8	
60 Ni	0.3874	ppb	11.92	0.40	96.85	
63 Cu	0.615	ppb	3.08	0.60	102.5	
65 Cu	0.6415	ppb	6.39	0.60	106.917	
66 Zn	2.06	ppb	4.17	2.00	103	
68 Zn	1.805	ppb	3.99	2.00	90.25	
75 As	1.04	ppb	11.72	1.00	104	
82 Se	1.19	ppb	2.06	1.00	119	
88 Sr	0.9476	ppb	3.76	1.00	94.76	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	0.9518	ppb	3.69	1.00	95.18	
107 Ag	0.1958	ppb	9.57	0.20	97.9	
109 Ag	0.1999	ppb	1.99	0.20	99.95	
111 Cd	0.1721	ppb	23.14	0.20	86.05	
114 Cd	0.1857	ppb	2.09	0.20	92.85	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	1.075	ppb	4.80	1.00	107.5	
120 Sn	1.044	ppb	0.89	1.00	104.4	
121 Sb	0.1983	ppb	9.35	0.20	99.15	
123 Sb	0.196	ppb	5.71	0.20	98	
135 Ba	0.3942	ppb	8.21	0.40	98.55	
137 Ba	0.4109	ppb	8.77	0.40	102.725	
182 W	1.022	ppb	4.82	1.00	102.2	
203 Tl	0.1736	ppb	8.38	0.20	86.8	
205 Tl	0.1854	ppb	2.52	0.20	92.7	
208 Pb	0.1996	ppb	10.00	0.20	99.8	
232 Th	0.2021	ppb	2.98	0.20	101.05	
238 U	0.2146	ppb	2.25	0.20	107.3	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2496821.30	0.70	2473849.30	100.9	80 - 120.4	
45 Sc	2258857.80	0.87	2284758.30	98.9	80 - 120.4	
72 Ge	434237.97	1.66	440097.94	98.7	80 - 120.4	
159 Tb	3143283.30	1.99	3175870.30	99.0	80 - 120.4	
209 Bi	1764185.80	1.06	1777464.10	99.3	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000407

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\020SMPL.D\020SMPL.D#
Date Acquired: Mar 26 2018 04:33 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0053	0.0053	ppb	43.85	100.	
11 B	0.4797	0.4797	ppb	9.34	1000.	
23 Na	-0.6155	-0.6155	ppb	35.19	200000.	
25 Mg	-0.6643	-0.6643	ppb	7.25	200000.	
27 Al	-0.5831	-0.5831	ppb	3.49	200000.	
28 Si	-40.43	-40.43	ppb	289.39	#VALUE!	
29 Si	1.692	1.692	ppb	3881.20	10000.	
39 K	-1.344	-1.344	ppb	97.69	200000.	
43 Ca	-6.053	-6.053	ppb	57.94	#VALUE!	
44 Ca	0.0607	0.0607	ppb	2587.30	200000.	
51 V	-0.0301	-0.0301	ppb	161.71	1000.	
52 Cr	0.003	0.003	ppb	728.59	2000.	
53 Cr	-0.198	-0.198	ppb	5.14	#VALUE!	
55 Mn	0.0036	0.0036	ppb	76.43	2000.	
56 Fe	-4.712	-4.712	ppb	51.72	#VALUE!	
57 Fe	-2.842	-2.842	ppb	134.13	100000.	
59 Co	0.0021	0.0021	ppb	97.67	1000.	
60 Ni	0.0007	0.0007	ppb	1512.60	1000.	
63 Cu	0.0056	0.0056	ppb	134.38	#VALUE!	
65 Cu	-0.0028	-0.0028	ppb	174.31	2000.	
66 Zn	0.0631	0.0631	ppb	116.90	2000.	
68 Zn	0.0924	0.0924	ppb	70.29	#VALUE!	
75 As	0.0901	0.0901	ppb	248.11	1000.	
82 Se	0.0426	0.0426	ppb	1596.10	1000.	
88 Sr	0.0033	0.0033	ppb	82.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0059	-0.0059	ppb	24.13	1000.	
107 Ag	0.0013	0.0013	ppb	253.06	100.	
109 Ag	-0.0009	-0.0009	ppb	293.89	#VALUE!	
111 Cd	0.0189	0.0189	ppb	72.94	#VALUE!	
114 Cd	0.0034	0.0034	ppb	197.72	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0365	0.0365	ppb	19.43	1000.	
120 Sn	0.0056	0.0056	ppb	412.53	#VALUE!	
121 Sb	-0.0007	-0.0007	ppb	544.63	#VALUE!	
123 Sb	-0.0014	-0.0014	ppb	115.23	1000.	
135 Ba	-0.0081	-0.0081	ppb	123.58	2000.	
137 Ba	-0.0075	-0.0075	ppb	38.41	#VALUE!	
182 W	0.0014	0.0014	ppb	220.63	1000.	
203 Tl	-0.0014	-0.0014	ppb	301.90	1000.	
205 Tl	0.0008	0.0008	ppb	319.72	#VALUE!	
208 Pb	0.	0.	ppb	23323.00	2000.	
232 Th	0.0013	0.0013	ppb	74.07	1000.	
238 U	-0.0001	-0.0001	ppb	620.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2517944.50	0.69	2473849.30	101.8	69.5 - 120	
45 Sc	2287181.80	1.34	2284758.30	100.1	69.5 - 120	
72 Ge	441612.97	1.40	440097.94	100.3	69.5 - 120	
159 Tb	3168971.00	0.34	3175870.30	99.8	69.5 - 120	
209 Bi	1775954.80	0.95	1777464.10	99.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000408

ICS-A QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\021ICSA.D\021ICSA.D#
Date Acquired: Mar 26 2018 04:37 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSA
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0031	ppb	64.45		
11 B	0.7686	ppb	6.29		
23 Na	96,140.	ppb	1.53		
25 Mg	95,140.	ppb	0.23		
27 Al	95,400.	ppb	0.55		
28 Si	-382.9	ppb	17.00		
29 Si	-644.2	ppb	4.30		Fail
39 K	96,960.	ppb	0.40		
43 Ca	101,200.	ppb	1.43		
44 Ca	94,520.	ppb	0.82		
51 V	0.2016	ppb	18.44		
52 Cr	0.7437	ppb	4.02		
53 Cr	-0.3622	ppb	26.22		
55 Mn	0.2949	ppb	6.44		
56 Fe	92,080.	ppb	0.46		
57 Fe	89,940.	ppb	0.50		
59 Co	0.0875	ppb	6.57		
60 Ni	-0.1092	ppb	46.88		
63 Cu	2.983	ppb	1.71		
65 Cu	0.8759	ppb	10.23		
66 Zn	2.262	ppb	4.96		
68 Zn	-0.2107	ppb	52.30		
75 As	0.3822	ppb	34.38		
82 Se	0.1772	ppb	294.24		
88 Sr	0.8633	ppb	4.06		
89 Y	--------	---	--------		
98 Mo	1,802.	ppb	1.16		
107 Ag	0.0224	ppb	21.47		
109 Ag	0.024	ppb	28.64		
111 Cd	0.0217	ppb	203.04		
114 Cd	0.0768	ppb	34.68		
115 In	--------	---	--------		
118 Sn	0.0735	ppb	31.22		
120 Sn	0.0411	ppb	24.40		
121 Sb	0.0519	ppb	17.21		
123 Sb	0.0512	ppb	21.45		
135 Ba	0.0965	ppb	22.20		
137 Ba	0.0632	ppb	13.09		
182 W	0.2354	ppb	2.73		
203 Tl	0.0024	ppb	307.22		
205 Tl	0.0032	ppb	65.56		
208 Pb	0.0878	ppb	5.11		
232 Th	0.0076	ppb	73.32		
238 U	0.0018	ppb	60.24		

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2669873.00	0.73	2473849.30	107.9	69.5 - 120.4	
45 Sc	2560636.50	0.83	2284758.30	112.1	69.5 - 120.4	
72 Ge	501293.03	0.57	440097.94	113.9	69.5 - 120.4	
159 Tb	3497923.30	0.60	3175870.30	110.1	69.5 - 120.4	
209 Bi	1808060.60	0.87	1777464.10	101.7	69.5 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000409

ICS-AB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\022ICSB.D\022ICSB.D#
Date Acquired: Mar 26 2018 04:41 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: ICSAB
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	Expected	QC Range(%)	Flag
9 Be	19.92	ppb	0.87	20.00	79.5 - 120	
11 B	20.1	ppb	2.89	20.00	79.5 - 120	
23 Na	96,010.	ppb	0.71	#########	79.5 - 120	
25 Mg	95,310.	ppb	0.44	#########	79.5 - 120	
27 Al	96,870.	ppb	1.57	#########	79.5 - 120	
28 Si	352.8	ppb	28.32	---	##### - #####	
29 Si	66.41	ppb	85.89	---	##### - #####	
39 K	98,350.	ppb	1.13	#########	79.5 - 120	
43 Ca	101,300.	ppb	1.65	#########	79.5 - 120	
44 Ca	96,200.	ppb	1.76	#########	79.5 - 120	
51 V	19.84	ppb	0.74	20.00	79.5 - 120	
52 Cr	20.08	ppb	0.97	20.00	79.5 - 120	
53 Cr	19.53	ppb	0.80	---	##### - #####	
55 Mn	19.49	ppb	0.54	20.00	79.5 - 120	
56 Fe	92,920.	ppb	1.41	#########	79.5 - 120	
57 Fe	89,700.	ppb	1.34	#########	79.5 - 120	
59 Co	19.01	ppb	0.99	20.00	79.5 - 120	
60 Ni	18.54	ppb	1.21	20.00	79.5 - 120	
63 Cu	21.11	ppb	0.68	20.00	79.5 - 120	
65 Cu	19.1	ppb	0.27	20.00	79.5 - 120	
66 Zn	20.51	ppb	0.93	20.00	79.5 - 120	
68 Zn	18.22	ppb	1.56	20.00	79.5 - 120	
75 As	19.72	ppb	1.47	20.00	79.5 - 120	
82 Se	19.21	ppb	2.08	20.00	79.5 - 120	
88 Sr	20.47	ppb	0.28	20.00	79.5 - 120	
89 Y	--------	---	--------	---	##### - #####	
98 Mo	1,839.	ppb	0.56	2000.00	79.5 - 120	
107 Ag	18.49	ppb	0.94	20.00	79.5 - 120	
109 Ag	18.28	ppb	1.41	20.00	79.5 - 120	
111 Cd	18.62	ppb	0.75	20.00	79.5 - 120	
114 Cd	18.64	ppb	0.69	20.00	79.5 - 120	
115 In	--------	---	--------	---	##### - #####	
118 Sn	20.08	ppb	0.95	20.00	79.5 - 120	
120 Sn	20.12	ppb	1.52	20.00	79.5 - 120	
121 Sb	20.3	ppb	0.73	20.00	79.5 - 120	
123 Sb	20.2	ppb	0.67	20.00	79.5 - 120	
135 Ba	20.38	ppb	0.72	20.00	79.5 - 120	
137 Ba	20.67	ppb	1.08	20.00	79.5 - 120	
182 W	20.75	ppb	0.84	20.00	79.5 - 120	
203 Tl	21.31	ppb	0.48	20.00	79.5 - 120	
205 Tl	21.03	ppb	0.30	20.00	79.5 - 120	
208 Pb	21.25	ppb	0.30	20.00	79.5 - 120	
232 Th	21.98	ppb	0.51	20.00	79.5 - 120	
238 U	21.75	ppb	0.18	20.00	79.5 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2621262.50	0.59	2473849.30	106.0	69.5 - 120	
45 Sc	2526395.30	0.84	2284758.30	110.6	69.5 - 120	
72 Ge	494145.91	0.35	440097.94	112.3	69.5 - 120	
159 Tb	3545330.00	0.50	3175870.30	111.6	69.5 - 120	
209 Bi	1806664.50	0.51	1777464.10	101.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000410

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\023SMPL.D\023SMPL.D#
Date Acquired: Mar 26 2018 04:46 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0016	0.0016	ppb	187.13	100.	
11 B	0.479	0.479	ppb	25.05	1000.	
23 Na	1.928	1.928	ppb	21.19	200000.	
25 Mg	0.5367	0.5367	ppb	44.44	200000.	
27 Al	0.1678	0.1678	ppb	95.05	200000.	
28 Si	-5.102	-5.102	ppb	2093.30	#VALUE!	
29 Si	-190.4	-190.4	ppb	41.89	10000.	LOW
39 K	-5.378	-5.378	ppb	21.92	200000.	
43 Ca	-5.666	-5.666	ppb	21.96	#VALUE!	
44 Ca	1.788	1.788	ppb	130.03	200000.	
51 V	-0.0279	-0.0279	ppb	18.45	1000.	
52 Cr	0.	0.	ppb	53598.00	2000.	
53 Cr	0.0062	0.0062	ppb	2136.30	#VALUE!	
55 Mn	-0.0087	-0.0087	ppb	106.08	2000.	
56 Fe	-1.779	-1.779	ppb	253.18	#VALUE!	
57 Fe	-3.99	-3.99	ppb	54.71	100000.	
59 Co	-0.0029	-0.0029	ppb	61.19	1000.	
60 Ni	0.0026	0.0026	ppb	351.05	1000.	
63 Cu	0.0236	0.0236	ppb	33.32	#VALUE!	
65 Cu	0.0045	0.0045	ppb	119.13	2000.	
66 Zn	0.0927	0.0927	ppb	43.12	2000.	
68 Zn	-0.2335	-0.2335	ppb	27.61	#VALUE!	
75 As	0.1617	0.1617	ppb	116.51	1000.	
82 Se	0.0775	0.0775	ppb	894.45	1000.	
88 Sr	0.0009	0.0009	ppb	396.94	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.3326	0.3326	ppb	27.08	1000.	
107 Ag	0.0001	0.0001	ppb	5031.40	100.	
109 Ag	-0.0005	-0.0005	ppb	163.96	#VALUE!	
111 Cd	-0.048	-0.048	ppb	31.92	#VALUE!	
114 Cd	0.0047	0.0047	ppb	111.59	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0183	0.0183	ppb	110.14	1000.	
120 Sn	-0.0123	-0.0123	ppb	73.52	#VALUE!	
121 Sb	0.0041	0.0041	ppb	135.08	#VALUE!	
123 Sb	0.0049	0.0049	ppb	131.62	1000.	
135 Ba	-0.0116	-0.0116	ppb	85.47	2000.	
137 Ba	-0.0114	-0.0114	ppb	109.75	#VALUE!	
182 W	-0.0038	-0.0038	ppb	196.71	1000.	
203 Tl	-0.0005	-0.0005	ppb	418.01	1000.	
205 Tl	0.0074	0.0074	ppb	20.47	#VALUE!	
208 Pb	0.0003	0.0003	ppb	1170.20	2000.	
232 Th	0.0039	0.0039	ppb	13.91	1000.	
238 U	0.001	0.001	ppb	108.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2362184.30	0.26	2473849.30	95.5	69.5 - 120	
45 Sc	2234187.50	0.54	2284758.30	97.8	69.5 - 120	
72 Ge	434373.56	1.62	440097.94	98.7	69.5 - 120	
159 Tb	3231878.00	0.91	3175870.30	101.8	69.5 - 120	
209 Bi	1778775.60	0.84	1777464.10	100.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000411

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\024SMPL.D\024SMPL.D#
Date Acquired: Mar 26 2018 04:49 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS1
Misc Info:
Vial Number: 3511
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	102.8	102.8	ppb	1.96	100.	>LDR
11 B	526.7	526.7	ppb	6.29	1000.	
23 Na	1.138	1.138	ppb	21.23	200000.	
25 Mg	0.6745	0.6745	ppb	18.50	200000.	
27 Al	0.6478	0.6478	ppb	29.30	200000.	
28 Si	-459.9	-459.9	ppb	7.32	#VALUE!	
29 Si	-543.	-543.	ppb	6.36	10000.	LOW
39 K	-16.09	-16.09	ppb	16.50	200000.	
43 Ca	1,497.	1,497.	ppb	1.56	#VALUE!	
44 Ca	112.1	112.1	ppb	15.89	200000.	
51 V	1,016.	1,016.	ppb	1.16	1000.	>LDR
52 Cr	2,034.	2,034.	ppb	1.22	2000.	>LDR
53 Cr	2,107.	2,107.	ppb	0.84	#VALUE!	
55 Mn	2,035.	2,035.	ppb	1.60	2000.	>LDR
56 Fe	-12.66	-12.66	ppb	20.32	#VALUE!	
57 Fe	-8.398	-8.398	ppb	5.04	100000.	
59 Co	1,017.	1,017.	ppb	1.09	1000.	>LDR
60 Ni	1,036.	1,036.	ppb	0.91	1000.	>LDR
63 Cu	2,032.	2,032.	ppb	0.91	#VALUE!	
65 Cu	2,044.	2,044.	ppb	1.40	2000.	>LDR
66 Zn	2,095.	2,095.	ppb	1.47	2000.	>LDR
68 Zn	2,111.	2,111.	ppb	1.24	#VALUE!	
75 As	1,048.	1,048.	ppb	1.99	1000.	>LDR
82 Se	1,065.	1,065.	ppb	0.68	1000.	>LDR
88 Sr	2,026.	2,026.	ppb	2.05	2000.	>LDR
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1,027.	1,027.	ppb	2.26	1000.	>LDR
107 Ag	107.6	107.6	ppb	1.17	100.	>LDR
109 Ag	106.9	106.9	ppb	0.50	#VALUE!	
111 Cd	1,074.	1,074.	ppb	2.15	#VALUE!	
114 Cd	1,063.	1,063.	ppb	1.48	1000.	>LDR
115 In	----	--------	--- ---		#VALUE!	
118 Sn	1,046.	1,046.	ppb	0.50	1000.	>LDR
120 Sn	1,026.	1,026.	ppb	0.30	#VALUE!	
121 Sb	1,025.	1,025.	ppb	0.70	#VALUE!	
123 Sb	1,035.	1,035.	ppb	1.13	1000.	>LDR
135 Ba	2,126.	2,126.	ppb	0.69	2000.	>LDR
137 Ba	2,091.	2,091.	ppb	0.69	#VALUE!	
182 W	1,036.	1,036.	ppb	0.65	1000.	>LDR
203 Tl	1,014.	1,014.	ppb	0.54	1000.	>LDR
205 Tl	982.8	982.8	ppb	0.41	#VALUE!	
208 Pb	2,023.	2,023.	ppb	0.77	2000.	>LDR
232 Th	988.2	988.2	ppb	1.13	1000.	
238 U	1,001.	1,001.	ppb	1.20	1000.	>LDR

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2571521.00	2.06	2473849.30	103.9	69.5 - 120	
45 Sc	2391839.80	0.90	2284758.30	104.7	69.5 - 120	
72 Ge	457407.63	1.52	440097.94	103.9	69.5 - 120	
159 Tb	3424780.00	0.35	3175870.30	107.8	69.5 - 120	
209 Bi	1900717.00	0.54	1777464.10	106.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

21 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000412

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\025SMPL.D\025SMPL.D#
Date Acquired: Mar 26 2018 04:53 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LRS2
Misc Info:
Vial Number: 3512
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0142	0.0142	ppb	27.53	100.	
11 B	6.977	6.977	ppb	14.63	1000.	
23 Na	191,200.	191,200.	ppb	0.36	200000.	
25 Mg	183,800.	183,800.	ppb	0.61	200000.	
27 Al	188,800.	188,800.	ppb	0.63	200000.	
28 Si	13,350.	13,350.	ppb	0.96	#VALUE!	
29 Si	14,840.	14,840.	ppb	1.48	10000.	>LDR
39 K	193,900.	193,900.	ppb	1.02	200000.	
43 Ca	193,700.	193,700.	ppb	0.80	#VALUE!	
44 Ca	186,800.	186,800.	ppb	0.72	200000.	
51 V	0.1345	0.1345	ppb	52.11	1000.	
52 Cr	2.857	2.857	ppb	2.27	2000.	
53 Cr	1.549	1.549	ppb	12.95	#VALUE!	
55 Mn	7.292	7.292	ppb	1.13	2000.	
56 Fe	94,260.	94,260.	ppb	0.98	#VALUE!	
57 Fe	91,650.	91,650.	ppb	0.71	100000.	
59 Co	2.651	2.651	ppb	1.10	1000.	
60 Ni	3.196	3.196	ppb	3.14	1000.	
63 Cu	7.663	7.663	ppb	1.18	#VALUE!	
65 Cu	2.664	2.664	ppb	3.05	2000.	
66 Zn	2.669	2.669	ppb	1.65	2000.	
68 Zn	0.4436	0.4436	ppb	30.79	#VALUE!	
75 As	0.5415	0.5415	ppb	5.42	1000.	
82 Se	0.3635	0.3635	ppb	82.94	1000.	
88 Sr	6.37	6.37	ppb	0.73	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.5504	0.5504	ppb	13.31	1000.	
107 Ag	0.3462	0.3462	ppb	3.95	100.	
109 Ag	0.3291	0.3291	ppb	8.72	#VALUE!	
111 Cd	-0.0357	-0.0357	ppb	60.68	#VALUE!	
114 Cd	-0.0035	-0.0035	ppb	122.77	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2518	0.2518	ppb	9.13	1000.	
120 Sn	0.2359	0.2359	ppb	5.06	#VALUE!	
121 Sb	0.1127	0.1127	ppb	14.74	#VALUE!	
123 Sb	0.1184	0.1184	ppb	8.47	1000.	
135 Ba	0.2501	0.2501	ppb	10.33	2000.	
137 Ba	0.2128	0.2128	ppb	4.69	#VALUE!	
182 W	0.4259	0.4259	ppb	11.64	1000.	
203 Tl	0.0585	0.0585	ppb	5.00	1000.	
205 Tl	0.0535	0.0535	ppb	1.56	#VALUE!	
208 Pb	0.4652	0.4652	ppb	2.76	2000.	
232 Th	0.2262	0.2262	ppb	17.72	1000.	
238 U	0.1371	0.1371	ppb	15.46	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2620866.00	1.63	2473849.30	105.9	69.5 - 120	
45 Sc	2562419.30	2.86	2284758.30	112.2	69.5 - 120	
72 Ge	480073.59	1.19	440097.94	109.1	69.5 - 120	
159 Tb	3344739.30	0.49	3175870.30	105.3	69.5 - 120	
209 Bi	1648656.00	1.12	1777464.10	92.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000413

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\026SMPL.D\026SMPL.D#
Date Acquired: Mar 26 2018 04:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0024	0.0024	ppb	89.16	100.	
11 B	3.709	3.709	ppb	5.04	1000.	
23 Na	9.534	9.534	ppb	29.29	200000.	
25 Mg	3.806	3.806	ppb	48.84	200000.	
27 Al	3.381	3.381	ppb	62.20	200000.	
28 Si	-80.34	-80.34	ppb	151.73	#VALUE!	
29 Si	-221.1	-221.1	ppb	53.55	10000.	LOW
39 K	-1.88	-1.88	ppb	87.82	200000.	
43 Ca	1.125	1.125	ppb	672.80	#VALUE!	
44 Ca	3.041	3.041	ppb	62.38	200000.	
51 V	0.0058	0.0058	ppb	281.15	1000.	
52 Cr	0.006	0.006	ppb	393.61	2000.	
53 Cr	0.5273	0.5273	ppb	20.14	#VALUE!	
55 Mn	0.001	0.001	ppb	1591.60	2000.	
56 Fe	-3.83	-3.83	ppb	25.04	#VALUE!	
57 Fe	-1.472	-1.472	ppb	7.23	100000.	
59 Co	0.0062	0.0062	ppb	84.25	1000.	
60 Ni	0.0151	0.0151	ppb	150.26	1000.	
63 Cu	0.0314	0.0314	ppb	35.05	#VALUE!	
65 Cu	0.0327	0.0327	ppb	80.83	2000.	
66 Zn	0.067	0.067	ppb	95.24	2000.	
68 Zn	-0.0672	-0.0672	ppb	34.17	#VALUE!	
75 As	0.132	0.132	ppb	22.56	1000.	
82 Se	0.1452	0.1452	ppb	226.65	1000.	
88 Sr	0.0067	0.0067	ppb	20.22	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0691	0.0691	ppb	38.87	1000.	
107 Ag	-0.0017	-0.0017	ppb	122.71	100.	
109 Ag	0.0007	0.0007	ppb	420.05	#VALUE!	
111 Cd	-0.0374	-0.0374	ppb	38.87	#VALUE!	
114 Cd	0.0025	0.0025	ppb	166.83	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0689	0.0689	ppb	7.40	1000.	
120 Sn	0.0354	0.0354	ppb	35.59	#VALUE!	
121 Sb	0.0158	0.0158	ppb	19.88	#VALUE!	
123 Sb	0.0152	0.0152	ppb	15.35	1000.	
135 Ba	0.0214	0.0214	ppb	30.83	2000.	
137 Ba	0.0077	0.0077	ppb	128.08	#VALUE!	
182 W	0.0856	0.0856	ppb	31.49	1000.	
203 Tl	0.0061	0.0061	ppb	184.15	1000.	
205 Tl	0.0014	0.0014	ppb	350.28	#VALUE!	
208 Pb	0.0133	0.0133	ppb	52.00	2000.	
232 Th	0.0094	0.0094	ppb	14.90	1000.	
238 U	0.0135	0.0135	ppb	21.75	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2501744.30	0.54	2473849.30	101.1	69.5 - 120	
45 Sc	2333975.50	0.60	2284758.30	102.2	69.5 - 120	
72 Ge	450031.59	0.94	440097.94	102.3	69.5 - 120	
159 Tb	3233799.00	1.48	3175870.30	101.8	69.5 - 120	
209 Bi	1810722.50	0.32	1777464.10	101.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000414

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\027SMPL.D\027SMPL.D#
Date Acquired: Mar 26 2018 05:01 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 1303
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0058	0.0058	ppb	97.53	100.	
11 B	2.436	2.436	ppb	7.04	1000.	
23 Na	3.005	3.005	ppb	13.38	200000.	
25 Mg	0.2549	0.2549	ppb	14.62	200000.	
27 Al	-0.2384	-0.2384	ppb	20.45	200000.	
28 Si	7.905	7.905	ppb	1329.50	#VALUE!	
29 Si	-100.9	-100.9	ppb	96.89	10000.	LOW
39 K	-3.049	-3.049	ppb	36.14	200000.	
43 Ca	-1.953	-1.953	ppb	152.07	#VALUE!	
44 Ca	-0.879	-0.879	ppb	286.46	200000.	
51 V	-0.0266	-0.0266	ppb	159.89	1000.	
52 Cr	-0.0042	-0.0042	ppb	294.26	2000.	
53 Cr	0.4	0.4	ppb	55.38	#VALUE!	
55 Mn	-0.0038	-0.0038	ppb	179.86	2000.	
56 Fe	-3.425	-3.425	ppb	84.12	#VALUE!	
57 Fe	-3.228	-3.228	ppb	92.35	100000.	
59 Co	0.0028	0.0028	ppb	123.59	1000.	
60 Ni	0.0076	0.0076	ppb	135.10	1000.	
63 Cu	0.0266	0.0266	ppb	26.18	#VALUE!	
65 Cu	0.007	0.007	ppb	93.81	2000.	
66 Zn	0.0605	0.0605	ppb	29.90	2000.	
68 Zn	-0.16	-0.16	ppb	105.50	#VALUE!	
75 As	0.0188	0.0188	ppb	961.68	1000.	
82 Se	0.179	0.179	ppb	455.98	1000.	
88 Sr	0.0034	0.0034	ppb	151.70	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	0.0268	0.0268	ppb	58.13	1000.	
107 Ag	-0.0021	-0.0021	ppb	175.28	100.	
109 Ag	-0.0003	-0.0003	ppb	667.11	#VALUE!	
111 Cd	-0.0301	-0.0301	ppb	67.08	#VALUE!	
114 Cd	0.004	0.004	ppb	73.39	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.059	0.059	ppb	17.00	1000.	
120 Sn	0.0174	0.0174	ppb	52.39	#VALUE!	
121 Sb	0.0096	0.0096	ppb	28.79	#VALUE!	
123 Sb	0.0051	0.0051	ppb	101.44	1000.	
135 Ba	0.0013	0.0013	ppb	833.84	2000.	
137 Ba	0.0017	0.0017	ppb	580.54	#VALUE!	
182 W	0.0417	0.0417	ppb	15.05	1000.	
203 Tl	0.0018	0.0018	ppb	43.35	1000.	
205 Tl	0.0027	0.0027	ppb	111.04	#VALUE!	
208 Pb	0.0049	0.0049	ppb	67.97	2000.	
232 Th	0.0057	0.0057	ppb	41.96	1000.	
238 U	0.0036	0.0036	ppb	52.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2464335.50	1.37	2473849.30	99.6	69.5 - 120	
45 Sc	2278116.50	1.16	2284758.30	99.7	69.5 - 120	
72 Ge	439439.00	1.14	440097.94	99.9	69.5 - 120	
159 Tb	3196002.80	0.52	3175870.30	100.6	69.5 - 120	
209 Bi	1785365.10	0.23	1777464.10	100.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000415

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\028_CCV.D\028_CCV.D#
Date Acquired: Mar 26 2018 05:05 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.65	ppb	2.28	25	98.6	
11 B	26.56	ppb	3.65	25	106.24	
23 Na	5,011.	ppb	1.22	5,000	100.22	
25 Mg	5,127.	ppb	1.46	5,000	102.54	
27 Al	510.1	ppb	1.92	500	102.02	
28 Si	391.2	ppb	28.12	500	78.24	
29 Si	271.	ppb	29.10	500	54.2	Fail
39 K	5,053.	ppb	0.15	5,000	101.06	
43 Ca	5,040.	ppb	2.03	5,000	100.8	
44 Ca	5,134.	ppb	1.13	5,000	102.68	
51 V	24.8	ppb	1.74	25	99.2	
52 Cr	25.17	ppb	0.93	25	100.68	
53 Cr	25.39	ppb	1.18	25	101.56	
55 Mn	25.18	ppb	1.89	25	100.72	
56 Fe	4,978.	ppb	1.28	5,000	99.56	
57 Fe	5,116.	ppb	1.03	5,000	102.32	
59 Co	25.09	ppb	1.11	25	100.36	
60 Ni	25.33	ppb	1.91	25	101.32	
63 Cu	25.15	ppb	0.19	25	100.6	
65 Cu	25.34	ppb	1.30	25	101.36	
66 Zn	25.62	ppb	0.40	25	102.48	
68 Zn	25.1	ppb	0.86	25	100.4	
75 As	25.14	ppb	1.32	25	100.56	
82 Se	25.5	ppb	1.90	25	102	
88 Sr	25.2	ppb	2.03	25	100.8	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	24.97	ppb	1.83	25	99.88	
107 Ag	25.53	ppb	0.59	25	102.12	
109 Ag	25.79	ppb	0.91	25	103.16	
111 Cd	25.35	ppb	1.06	25	101.4	
114 Cd	25.64	ppb	1.43	25	102.56	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.48	ppb	1.06	25	101.92	
120 Sn	25.72	ppb	0.57	25	102.88	
121 Sb	25.49	ppb	1.33	25	101.96	
123 Sb	25.75	ppb	1.26	25	103	
135 Ba	25.35	ppb	1.72	25	101.4	
137 Ba	25.75	ppb	1.52	25	103	
182 W	25.69	ppb	1.43	25	102.76	
203 Tl	25.03	ppb	0.42	25	100.12	
205 Tl	25.13	ppb	1.01	25	100.52	
208 Pb	25.27	ppb	0.89	25	101.08	
232 Th	25.02	ppb	0.71	25	100.08	
238 U	24.81	ppb	0.61	25	99.24	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2702401.00	1.16	2473849.30	109.2	80 - 120.4	
45 Sc	2461381.80	0.39	2284758.30	107.7	80 - 120.4	
72 Ge	468578.88	0.87	440097.94	106.5	80 - 120.4	
159 Tb	3467931.00	0.41	3175870.30	109.2	80 - 120.4	
209 Bi	1918468.90	0.54	1777464.10	107.9	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000416

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\029_CCB.D\029_CCB.D#
Date Acquired: Mar 26 2018 05:09 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0197	ppb	151.60	1.00	
11 B	1.925	ppb	4.16	1.00	
23 Na	55.32	ppb	166.74	1.00	
25 Mg	67.07	ppb	173.70	1.00	Fail
27 Al	49.71	ppb	174.93	1.00	Fail
28 Si	-23.8	ppb	650.84	1.00	
29 Si	-39.17	ppb	226.40	1.00	
39 K	48.81	ppb	181.03	1.00	
43 Ca	49.34	ppb	169.74	1.00	
44 Ca	44.9	ppb	174.86	1.00	Fail
51 V	0.0976	ppb	248.87	1.00	
52 Cr	0.2006	ppb	185.39	1.00	
53 Cr	0.2379	ppb	155.74	1.00	
55 Mn	0.1996	ppb	177.81	1.00	
56 Fe	29.13	ppb	195.54	1.00	
57 Fe	27.73	ppb	208.80	1.00	Fail
59 Co	0.1098	ppb	171.58	1.00	
60 Ni	0.1217	ppb	161.22	1.00	
63 Cu	0.2051	ppb	158.46	1.00	
65 Cu	0.1882	ppb	160.84	1.00	
66 Zn	0.4299	ppb	70.88	1.00	
68 Zn	0.2149	ppb	184.88	1.00	
75 As	0.3504	ppb	88.30	1.00	
82 Se	0.4603	ppb	128.66	1.00	
88 Sr	0.1793	ppb	176.97	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.3604	ppb	165.73	1.00	
107 Ag	0.0154	ppb	168.27	1.00	
109 Ag	0.0147	ppb	169.83	1.00	
111 Cd	0.1135	ppb	128.46	1.00	
114 Cd	0.1049	ppb	167.97	1.00	
115 In	--------	---	--------	---	
118 Sn	0.1572	ppb	119.27	1.00	
120 Sn	0.1304	ppb	162.35	1.00	
121 Sb	0.1236	ppb	158.90	1.00	
123 Sb	0.1166	ppb	162.26	1.00	
135 Ba	0.2553	ppb	168.43	1.00	
137 Ba	0.2426	ppb	171.68	1.00	
182 W	0.1346	ppb	130.09	1.00	
203 Tl	0.1123	ppb	166.16	1.00	
205 Tl	0.1166	ppb	163.98	1.00	
208 Pb	0.2244	ppb	167.56	1.00	Fail
232 Th	0.1326	ppb	155.81	1.00	
238 U	0.1176	ppb	169.13	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2459057.50	1.90	2473849.30	99.4	79.5 - 120	
45 Sc	2245753.50	1.34	2284758.30	98.3	79.5 - 120	
72 Ge	434446.72	1.94	440097.94	98.7	79.5 - 120	
159 Tb	3189679.50	1.32	3175870.30	100.4	79.5 - 120	
209 Bi	1789456.60	1.47	1777464.10	100.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000417

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\030SMPL.D\030SMPL.D#
Date Acquired: Mar 26 2018 05:13 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2287-001
Misc Info: DW
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0161	0.0161	ppb	23.96	100.	
11 B	4.321	4.321	ppb	0.78	1000.	
23 Na	9,331.	9,331.	ppb	0.60	200000.	
25 Mg	565.5	565.5	ppb	1.97	200000.	
27 Al	54.79	54.79	ppb	1.38	200000.	
28 Si	4,439.	4,439.	ppb	1.65	#VALUE!	
29 Si	5,898.	5,898.	ppb	1.72	10000.	
39 K	593.8	593.8	ppb	1.20	200000.	
43 Ca	5,094.	5,094.	ppb	1.50	#VALUE!	
44 Ca	5,160.	5,160.	ppb	0.27	200000.	
51 V	0.2154	0.2154	ppb	13.03	1000.	
52 Cr	0.0926	0.0926	ppb	22.25	2000.	
53 Cr	-0.5909	-0.5909	ppb	16.06	#VALUE!	
55 Mn	8.525	8.525	ppb	1.26	2000.	
56 Fe	2.407	2.407	ppb	52.64	#VALUE!	
57 Fe	13.77	13.77	ppb	7.27	100000.	
59 Co	0.0497	0.0497	ppb	27.27	1000.	
60 Ni	0.2254	0.2254	ppb	12.76	1000.	
63 Cu	44.29	44.29	ppb	0.28	#VALUE!	
65 Cu	44.09	44.09	ppb	0.75	2000.	
66 Zn	65.39	65.39	ppb	0.75	2000.	
68 Zn	62.87	62.87	ppb	0.49	#VALUE!	
75 As	0.2161	0.2161	ppb	75.24	1000.	
82 Se	0.1878	0.1878	ppb	165.97	1000.	
88 Sr	23.51	23.51	ppb	0.97	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1534	0.1534	ppb	7.80	1000.	
107 Ag	0.0057	0.0057	ppb	32.93	100.	
109 Ag	0.0043	0.0043	ppb	11.53	#VALUE!	
111 Cd	0.0075	0.0075	ppb	343.15	#VALUE!	
114 Cd	0.0083	0.0083	ppb	102.08	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0449	0.0449	ppb	10.38	1000.	
120 Sn	-0.003	-0.003	ppb	146.21	#VALUE!	
121 Sb	0.0227	0.0227	ppb	6.36	#VALUE!	
123 Sb	0.023	0.023	ppb	9.64	1000.	
135 Ba	3.289	3.289	ppb	3.19	2000.	
137 Ba	3.348	3.348	ppb	4.16	#VALUE!	
182 W	0.0238	0.0238	ppb	14.57	1000.	
203 Tl	0.0034	0.0034	ppb	320.01	1000.	
205 Tl	0.0104	0.0104	ppb	49.75	#VALUE!	
208 Pb	0.31	0.31	ppb	2.76	2000.	
232 Th	0.044	0.044	ppb	22.88	1000.	
238 U	0.0187	0.0187	ppb	13.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2602214.80	1.07	2473849.30	105.2	69.5 - 120	
45 Sc	2414874.00	0.73	2284758.30	105.7	69.5 - 120	
72 Ge	464997.03	0.70	440097.94	105.7	69.5 - 120	
159 Tb	3428656.50	0.92	3175870.30	108.0	69.5 - 120	
209 Bi	1904753.80	0.84	1777464.10	107.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000418

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\031SMPL.D\031SMPL.D#
Date Acquired: Mar 26 2018 05:17 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2394-001
Misc Info: DW
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.003	0.003	ppb	81.60	100.	
11 B	10.71	10.71	ppb	1.96	1000.	
23 Na	9,923.	9,923.	ppb	1.44	200000.	
25 Mg	4,345.	4,345.	ppb	1.80	200000.	
27 Al	7.71	7.71	ppb	5.16	200000.	
28 Si	6,685.	6,685.	ppb	2.14	#VALUE!	
29 Si	8,286.	8,286.	ppb	1.96	10000.	
39 K	3,545.	3,545.	ppb	0.95	200000.	
43 Ca	22,540.	22,540.	ppb	0.53	#VALUE!	
44 Ca	21,690.	21,690.	ppb	0.96	200000.	
51 V	0.8285	0.8285	ppb	3.42	1000.	
52 Cr	0.9171	0.9171	ppb	2.12	2000.	
53 Cr	-0.4577	-0.4577	ppb	40.35	#VALUE!	
55 Mn	0.3049	0.3049	ppb	2.37	2000.	
56 Fe	-4.927	-4.927	ppb	29.35	#VALUE!	
57 Fe	27.91	27.91	ppb	4.26	100000.	
59 Co	0.0348	0.0348	ppb	14.51	1000.	
60 Ni	0.0185	0.0185	ppb	165.69	1000.	
63 Cu	3.426	3.426	ppb	0.35	#VALUE!	
65 Cu	3.176	3.176	ppb	2.48	2000.	
66 Zn	2.546	2.546	ppb	6.81	2000.	
68 Zn	2.201	2.201	ppb	7.49	#VALUE!	
75 As	43.08	43.08	ppb	0.74	1000.	
82 Se	0.6266	0.6266	ppb	48.93	1000.	
88 Sr	85.21	85.21	ppb	0.37	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.593	1.593	ppb	3.05	1000.	
107 Ag	0.0388	0.0388	ppb	12.26	100.	
109 Ag	0.0386	0.0386	ppb	18.08	#VALUE!	
111 Cd	0.0071	0.0071	ppb	454.11	#VALUE!	
114 Cd	0.0035	0.0035	ppb	14.68	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0467	0.0467	ppb	20.93	1000.	
120 Sn	0.0227	0.0227	ppb	48.88	#VALUE!	
121 Sb	0.1899	0.1899	ppb	4.20	#VALUE!	
123 Sb	0.1984	0.1984	ppb	7.63	1000.	
135 Ba	1.59	1.59	ppb	3.46	2000.	
137 Ba	1.646	1.646	ppb	3.18	#VALUE!	
182 W	0.2525	0.2525	ppb	10.63	1000.	
203 Tl	0.0081	0.0081	ppb	13.77	1000.	
205 Tl	0.0029	0.0029	ppb	150.55	#VALUE!	
208 Pb	0.1489	0.1489	ppb	5.22	2000.	
232 Th	0.0049	0.0049	ppb	22.16	1000.	
238 U	2.192	2.192	ppb	2.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2674336.50	1.24	2473849.30	108.1	69.5 - 120	
45 Sc	2475513.30	1.82	2284758.30	108.3	69.5 - 120	
72 Ge	475847.53	1.03	440097.94	108.1	69.5 - 120	
159 Tb	3512392.50	0.42	3175870.30	110.6	69.5 - 120	
209 Bi	1942766.40	1.28	1777464.10	109.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000419

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\032SMPL.D\032SMPL.D#
Date Acquired: Mar 26 2018 05:21 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2395-001
Misc Info: DW
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.014	0.014	ppb	40.67	100.	
11 B	18.5	18.5	ppb	4.46	1000.	
23 Na	61,310.	61,310.	ppb	2.33	200000.	
25 Mg	9,534.	9,534.	ppb	1.45	200000.	
27 Al	0.5784	0.5784	ppb	11.11	200000.	
28 Si	8,091.	8,091.	ppb	1.87	#VALUE!	
29 Si	10,220.	10,220.	ppb	1.14	10000.	>LDR
39 K	2,042.	2,042.	ppb	0.41	200000.	
43 Ca	60,710.	60,710.	ppb	0.73	#VALUE!	
44 Ca	57,050.	57,050.	ppb	0.80	200000.	
51 V	1.029	1.029	ppb	2.80	1000.	
52 Cr	3.528	3.528	ppb	4.22	2000.	
53 Cr	-0.622	-0.622	ppb	4.34	#VALUE!	
55 Mn	33.44	33.44	ppb	0.97	2000.	
56 Fe	49.92	49.92	ppb	7.02	#VALUE!	
57 Fe	123.1	123.1	ppb	4.60	100000.	
59 Co	0.0557	0.0557	ppb	10.69	1000.	
60 Ni	-0.0118	-0.0118	ppb	163.82	1000.	
63 Cu	3.146	3.146	ppb	1.36	#VALUE!	
65 Cu	1.528	1.528	ppb	2.33	2000.	
66 Zn	2.5	2.5	ppb	4.20	2000.	
68 Zn	2.059	2.059	ppb	3.33	#VALUE!	
75 As	5.459	5.459	ppb	2.71	1000.	
82 Se	0.2015	0.2015	ppb	133.35	1000.	
88 Sr	359.8	359.8	ppb	1.74	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.2583	0.2583	ppb	3.44	1000.	
107 Ag	0.0297	0.0297	ppb	2.70	100.	
109 Ag	0.0325	0.0325	ppb	3.25	#VALUE!	
111 Cd	-0.0247	-0.0247	ppb	129.08	#VALUE!	
114 Cd	-0.0658	-0.0658	ppb	97.70	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	68.47	68.47	ppb	3.09	1000.	
120 Sn	68.19	68.19	ppb	3.14	#VALUE!	
121 Sb	0.0334	0.0334	ppb	11.08	#VALUE!	
123 Sb	0.0372	0.0372	ppb	25.69	1000.	
135 Ba	9.488	9.488	ppb	3.36	2000.	
137 Ba	9.309	9.309	ppb	0.16	#VALUE!	
182 W	0.6731	0.6731	ppb	5.56	1000.	
203 Tl	0.0008	0.0008	ppb	586.77	1000.	
205 Tl	0.004	0.004	ppb	107.53	#VALUE!	
208 Pb	0.0559	0.0559	ppb	6.08	2000.	
232 Th	0.003	0.003	ppb	43.99	1000.	
238 U	0.4005	0.4005	ppb	1.59	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2642236.80	0.79	2473849.30	106.8	69.5 - 120	
45 Sc	2518081.50	0.96	2284758.30	110.2	69.5 - 120	
72 Ge	479568.69	0.86	440097.94	109.0	69.5 - 120	
159 Tb	3539972.50	0.64	3175870.30	111.5	69.5 - 120	
209 Bi	1895555.60	0.23	1777464.10	106.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000420

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\033SMPL.D\033SMPL.D#
Date Acquired: Mar 26 2018 05:25 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2396-001
Misc Info: DW
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0097	0.0097	ppb	127.40	100.	
11 B	9.306	9.306	ppb	5.44	1000.	
23 Na	14,460.	14,460.	ppb	0.59	200000.	
25 Mg	4,591.	4,591.	ppb	0.68	200000.	
27 Al	11.81	11.81	ppb	161.30	200000.	
28 Si	7,077.	7,077.	ppb	1.67	#VALUE!	
29 Si	8,711.	8,711.	ppb	1.40	10000.	
39 K	3,587.	3,587.	ppb	0.55	200000.	
43 Ca	24,910.	24,910.	ppb	0.38	#VALUE!	
44 Ca	24,130.	24,130.	ppb	0.42	200000.	
51 V	0.2305	0.2305	ppb	17.82	1000.	
52 Cr	0.7164	0.7164	ppb	11.29	2000.	
53 Cr	-0.4716	-0.4716	ppb	25.51	#VALUE!	
55 Mn	117.3	117.3	ppb	0.80	2000.	
56 Fe	32.32	32.32	ppb	44.96	#VALUE!	
57 Fe	65.43	65.43	ppb	14.89	100000.	
59 Co	0.0571	0.0571	ppb	55.15	1000.	
60 Ni	0.1708	0.1708	ppb	35.90	1000.	
63 Cu	1.24	1.24	ppb	6.90	#VALUE!	
65 Cu	0.8993	0.8993	ppb	4.77	2000.	
66 Zn	4.787	4.787	ppb	1.63	2000.	
68 Zn	4.63	4.63	ppb	2.54	#VALUE!	
75 As	42.86	42.86	ppb	0.38	1000.	
82 Se	0.2295	0.2295	ppb	59.39	1000.	
88 Sr	82.61	82.61	ppb	1.69	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.615	5.615	ppb	2.50	1000.	
107 Ag	0.0079	0.0079	ppb	134.38	100.	
109 Ag	0.0102	0.0102	ppb	115.88	#VALUE!	
111 Cd	0.0531	0.0531	ppb	122.67	#VALUE!	
114 Cd	0.0367	0.0367	ppb	113.88	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2821	0.2821	ppb	39.92	1000.	
120 Sn	0.2571	0.2571	ppb	30.19	#VALUE!	
121 Sb	0.0583	0.0583	ppb	104.48	#VALUE!	
123 Sb	0.0734	0.0734	ppb	73.44	1000.	
135 Ba	8.275	8.275	ppb	1.72	2000.	
137 Ba	8.366	8.366	ppb	1.78	#VALUE!	
182 W	0.8269	0.8269	ppb	9.11	1000.	
203 Tl	0.0374	0.0374	ppb	113.06	1000.	
205 Tl	0.0345	0.0345	ppb	152.97	#VALUE!	
208 Pb	0.0967	0.0967	ppb	91.40	2000.	
232 Th	0.0289	0.0289	ppb	150.05	1000.	
238 U	0.4698	0.4698	ppb	9.17	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2673300.30	0.81	2473849.30	108.1	69.5 - 120	
45 Sc	2455836.30	1.18	2284758.30	107.5	69.5 - 120	
72 Ge	474954.78	0.89	440097.94	107.9	69.5 - 120	
159 Tb	3462206.50	0.76	3175870.30	109.0	69.5 - 120	
209 Bi	1894575.60	0.80	1777464.10	106.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000421

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\034SMPL.D\034SMPL.D#
Date Acquired: Mar 26 2018 05:29 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2412-001
Misc Info: DW
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0047	0.0047	ppb	73.47	100.	
11 B	106.1	106.1	ppb	4.07	1000.	
23 Na	67,710.	67,710.	ppb	0.38	200000.	
25 Mg	3.955	3.955	ppb	5.09	200000.	
27 Al	4.252	4.252	ppb	8.97	200000.	
28 Si	6,026.	6,026.	ppb	2.01	#VALUE!	
29 Si	7,523.	7,523.	ppb	2.23	10000.	
39 K	233.	233.	ppb	1.50	200000.	
43 Ca	8.008	8.008	ppb	24.20	#VALUE!	
44 Ca	24.22	24.22	ppb	11.38	200000.	
51 V	0.0601	0.0601	ppb	18.30	1000.	
52 Cr	0.206	0.206	ppb	9.39	2000.	
53 Cr	-0.4365	-0.4365	ppb	22.44	#VALUE!	
55 Mn	0.7879	0.7879	ppb	2.20	2000.	
56 Fe	-4.292	-4.292	ppb	18.61	#VALUE!	
57 Fe	4.053	4.053	ppb	25.69	100000.	
59 Co	0.0094	0.0094	ppb	40.81	1000.	
60 Ni	0.1775	0.1775	ppb	13.73	1000.	
63 Cu	16.33	16.33	ppb	1.24	#VALUE!	
65 Cu	14.63	14.63	ppb	0.44	2000.	
66 Zn	1.643	1.643	ppb	5.91	2000.	
68 Zn	1.339	1.339	ppb	32.73	#VALUE!	
75 As	15.91	15.91	ppb	0.87	1000.	
82 Se	0.0842	0.0842	ppb	415.47	1000.	
88 Sr	0.0808	0.0808	ppb	17.57	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0049	0.0049	ppb	121.82	1000.	
107 Ag	0.0007	0.0007	ppb	377.49	100.	
109 Ag	0.0019	0.0019	ppb	219.13	#VALUE!	
111 Cd	0.0023	0.0023	ppb	406.70	#VALUE!	
114 Cd	0.0012	0.0012	ppb	395.21	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	4.317	4.317	ppb	5.83	1000.	
120 Sn	4.376	4.376	ppb	2.34	#VALUE!	
121 Sb	0.0254	0.0254	ppb	31.47	#VALUE!	
123 Sb	0.0169	0.0169	ppb	60.37	1000.	
135 Ba	0.0447	0.0447	ppb	33.32	2000.	
137 Ba	0.0125	0.0125	ppb	63.72	#VALUE!	
182 W	0.0218	0.0218	ppb	9.39	1000.	
203 Tl	0.0052	0.0052	ppb	117.97	1000.	
205 Tl	0.0055	0.0055	ppb	99.87	#VALUE!	
208 Pb	0.1625	0.1625	ppb	11.93	2000.	
232 Th	0.0094	0.0094	ppb	10.77	1000.	
238 U	0.0004	0.0004	ppb	53.42	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2645308.30	0.54	2473849.30	106.9	69.5 - 120	
45 Sc	2510307.80	0.43	2284758.30	109.9	69.5 - 120	
72 Ge	475494.91	0.42	440097.94	108.0	69.5 - 120	
159 Tb	3464369.50	1.41	3175870.30	109.1	69.5 - 120	
209 Bi	1870315.00	0.58	1777464.10	105.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000422

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\035SMPL.D\035SMPL.D#
Date Acquired: Mar 26 2018 05:33 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2443-001
Misc Info: DW
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.1025	0.1025	ppb	12.07	100.	
11 B	4.417	4.417	ppb	5.33	1000.	
23 Na	3,475.	3,475.	ppb	1.26	200000.	
25 Mg	1,152.	1,152.	ppb	1.79	200000.	
27 Al	10.87	10.87	ppb	2.13	200000.	
28 Si	7,271.	7,271.	ppb	3.31	#VALUE!	
29 Si	9,011.	9,011.	ppb	3.74	10000.	
39 K	362.	362.	ppb	2.56	200000.	
43 Ca	5,200.	5,200.	ppb	1.11	#VALUE!	
44 Ca	5,176.	5,176.	ppb	1.62	200000.	
51 V	0.3016	0.3016	ppb	9.91	1000.	
52 Cr	0.7937	0.7937	ppb	1.22	2000.	
53 Cr	0.3362	0.3362	ppb	13.93	#VALUE!	
55 Mn	2.561	2.561	ppb	0.75	2000.	
56 Fe	-8.041	-8.041	ppb	42.18	#VALUE!	
57 Fe	3.507	3.507	ppb	3.33	100000.	
59 Co	0.0219	0.0219	ppb	42.21	1000.	
60 Ni	0.0528	0.0528	ppb	9.98	1000.	
63 Cu	10.43	10.43	ppb	0.95	#VALUE!	
65 Cu	10.39	10.39	ppb	0.28	2000.	
66 Zn	6.473	6.473	ppb	1.19	2000.	
68 Zn	6.451	6.451	ppb	5.73	#VALUE!	
75 As	0.0908	0.0908	ppb	82.10	1000.	
82 Se	0.0404	0.0404	ppb	613.90	1000.	
88 Sr	31.04	31.04	ppb	1.52	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	2.426	2.426	ppb	0.23	1000.	
107 Ag	0.0063	0.0063	ppb	67.36	100.	
109 Ag	0.009	0.009	ppb	27.61	#VALUE!	
111 Cd	0.023	0.023	ppb	68.74	#VALUE!	
114 Cd	0.0143	0.0143	ppb	21.64	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.5454	0.5454	ppb	6.69	1000.	
120 Sn	0.5189	0.5189	ppb	11.57	#VALUE!	
121 Sb	0.0067	0.0067	ppb	63.97	#VALUE!	
123 Sb	0.0086	0.0086	ppb	42.64	1000.	
135 Ba	1.616	1.616	ppb	2.86	2000.	
137 Ba	1.607	1.607	ppb	1.04	#VALUE!	
182 W	0.0028	0.0028	ppb	185.25	1000.	
203 Tl	0.0049	0.0049	ppb	276.44	1000.	
205 Tl	0.0102	0.0102	ppb	22.06	#VALUE!	
208 Pb	0.2531	0.2531	ppb	5.66	2000.	
232 Th	0.0014	0.0014	ppb	106.30	1000.	
238 U	25.11	25.11	ppb	0.96	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2590441.00	0.36	2473849.30	104.7	69.5 - 120	
45 Sc	2417849.30	1.25	2284758.30	105.8	69.5 - 120	
72 Ge	462881.19	1.18	440097.94	105.2	69.5 - 120	
159 Tb	3403810.50	1.69	3175870.30	107.2	69.5 - 120	
209 Bi	1897836.40	0.69	1777464.10	106.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000423

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\036SMPL.D\036SMPL.D#
Date Acquired: Mar 26 2018 05:37 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2465-001
Misc Info: DW
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0043	0.0043	ppb	70.84	100.	
11 B	93.3	93.3	ppb	4.65	1000.	
23 Na	3,238.	3,238.	ppb	2.02	200000.	
25 Mg	10.41	10.41	ppb	117.39	200000.	
27 Al	44.26	44.26	ppb	17.64	200000.	
28 Si	447.5	447.5	ppb	42.91	#VALUE!	
29 Si	474.6	474.6	ppb	19.81	10000.	
39 K	168.5	168.5	ppb	4.44	200000.	
43 Ca	26.58	26.58	ppb	97.93	#VALUE!	
44 Ca	25.39	25.39	ppb	101.65	200000.	
51 V	0.1775	0.1775	ppb	33.18	1000.	
52 Cr	0.1141	0.1141	ppb	23.01	2000.	
53 Cr	0.3779	0.3779	ppb	6.78	#VALUE!	
55 Mn	0.1115	0.1115	ppb	66.17	2000.	
56 Fe	11.45	11.45	ppb	59.92	#VALUE!	
57 Fe	12.88	12.88	ppb	51.94	100000.	
59 Co	0.0095	0.0095	ppb	198.38	1000.	
60 Ni	0.0848	0.0848	ppb	14.28	1000.	
63 Cu	0.3281	0.3281	ppb	14.72	#VALUE!	
65 Cu	0.2558	0.2558	ppb	22.14	2000.	
66 Zn	1.231	1.231	ppb	10.22	2000.	
68 Zn	0.9358	0.9358	ppb	14.37	#VALUE!	
75 As	0.0843	0.0843	ppb	225.28	1000.	
82 Se	0.0708	0.0708	ppb	616.45	1000.	
88 Sr	0.4829	0.4829	ppb	35.95	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0552	0.0552	ppb	127.01	1000.	
107 Ag	0.005	0.005	ppb	86.47	100.	
109 Ag	0.0061	0.0061	ppb	108.76	#VALUE!	
111 Cd	0.0546	0.0546	ppb	118.91	#VALUE!	
114 Cd	0.0134	0.0134	ppb	149.63	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0353	0.0353	ppb	75.40	1000.	
120 Sn	0.0113	0.0113	ppb	318.85	#VALUE!	
121 Sb	0.0203	0.0203	ppb	126.88	#VALUE!	
123 Sb	0.0227	0.0227	ppb	85.39	1000.	
135 Ba	0.2475	0.2475	ppb	22.25	2000.	
137 Ba	0.2797	0.2797	ppb	36.68	#VALUE!	
182 W	0.0367	0.0367	ppb	76.23	1000.	
203 Tl	0.0169	0.0169	ppb	155.47	1000.	
205 Tl	0.0223	0.0223	ppb	123.41	#VALUE!	
208 Pb	0.0568	0.0568	ppb	61.66	2000.	
232 Th	0.0126	0.0126	ppb	155.00	1000.	
238 U	0.0189	0.0189	ppb	154.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2573777.30	2.51	2473849.30	104.0	69.5 - 120	
45 Sc	2353255.80	1.79	2284758.30	103.0	69.5 - 120	
72 Ge	452993.97	1.56	440097.94	102.9	69.5 - 120	
159 Tb	3282668.80	0.41	3175870.30	103.4	69.5 - 120	
209 Bi	1826808.50	0.82	1777464.10	102.8	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000424

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\037SMPL.D\037SMPL.D#
Date Acquired: Mar 26 2018 05:41 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2466-001
Misc Info: DW
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0022	0.0022	ppb	86.38	100.	
11 B	67.58	67.58	ppb	2.31	1000.	
23 Na	50,420.	50,420.	ppb	0.80	200000.	
25 Mg	678.7	678.7	ppb	1.47	200000.	
27 Al	9.315	9.315	ppb	3.73	200000.	
28 Si	5,611.	5,611.	ppb	0.76	#VALUE!	
29 Si	7,468.	7,468.	ppb	1.08	10000.	
39 K	2,840.	2,840.	ppb	0.37	200000.	
43 Ca	2,720.	2,720.	ppb	0.78	#VALUE!	
44 Ca	2,729.	2,729.	ppb	2.07	200000.	
51 V	0.6883	0.6883	ppb	8.49	1000.	
52 Cr	1.746	1.746	ppb	7.22	2000.	
53 Cr	0.1213	0.1213	ppb	135.37	#VALUE!	
55 Mn	13.06	13.06	ppb	1.13	2000.	
56 Fe	-17.85	-17.85	ppb	22.70	#VALUE!	
57 Fe	-3.736	-3.736	ppb	52.14	100000.	
59 Co	0.0233	0.0233	ppb	42.79	1000.	
60 Ni	0.1232	0.1232	ppb	16.14	1000.	
63 Cu	3.671	3.671	ppb	2.43	#VALUE!	
65 Cu	2.34	2.34	ppb	4.84	2000.	
66 Zn	0.7545	0.7545	ppb	9.59	2000.	
68 Zn	0.4158	0.4158	ppb	2.92	#VALUE!	
75 As	212.2	212.2	ppb	1.41	1000.	
82 Se	0.2074	0.2074	ppb	111.67	1000.	
88 Sr	19.11	19.11	ppb	2.39	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.038	1.038	ppb	1.91	1000.	
107 Ag	0.0228	0.0228	ppb	31.58	100.	
109 Ag	0.0251	0.0251	ppb	30.15	#VALUE!	
111 Cd	0.0165	0.0165	ppb	83.42	#VALUE!	
114 Cd	0.0035	0.0035	ppb	54.26	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0427	0.0427	ppb	34.84	1000.	
120 Sn	0.0138	0.0138	ppb	87.27	#VALUE!	
121 Sb	0.1336	0.1336	ppb	1.98	#VALUE!	
123 Sb	0.1472	0.1472	ppb	10.18	1000.	
135 Ba	2.28	2.28	ppb	3.79	2000.	
137 Ba	2.126	2.126	ppb	2.69	#VALUE!	
182 W	4.484	4.484	ppb	2.59	1000.	
203 Tl	0.0039	0.0039	ppb	137.49	1000.	
205 Tl	0.0007	0.0007	ppb	686.70	#VALUE!	
208 Pb	0.2705	0.2705	ppb	5.74	2000.	
232 Th	0.0045	0.0045	ppb	38.63	1000.	
238 U	1.389	1.389	ppb	3.89	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2842592.30	3.43	2473849.30	114.9	69.5 - 120	
45 Sc	2617613.00	2.19	2284758.30	114.6	69.5 - 120	
72 Ge	499409.22	1.64	440097.94	113.5	69.5 - 120	
159 Tb	3579852.50	1.85	3175870.30	112.7	69.5 - 120	
209 Bi	1936577.30	1.92	1777464.10	109.0	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000425

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\038SMPL.D\038SMPL.D#
Date Acquired: Mar 26 2018 05:45 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.445	2.689	ppb	1.34	100.	
11 B	115.1	23.02	ppb	3.59	1000.	
23 Na	32,475.	6,495.	ppb	0.31	200000.	
25 Mg	86,750.	17,350.	ppb	0.86	200000.	
27 Al	233,650.	46,730.	ppb	0.33	200000.	
28 Si	121.05	24.21	ppb	406.40	#VALUE!	
29 Si	-772.	-154.4	ppb	25.75	10000.	LOW
39 K	66,150.	13,230.	ppb	0.23	200000.	
43 Ca	168,200.	33,640.	ppb	1.45	#VALUE!	
44 Ca	161,900.	32,380.	ppb	0.50	200000.	
51 V	524.	104.8	ppb	1.54	1000.	
52 Cr	222.9	44.58	ppb	0.25	2000.	
53 Cr	246.95	49.39	ppb	2.42	#VALUE!	
55 Mn	1,823.	364.6	ppb	0.31	2000.	
56 Fe	245,600.	49,120.	ppb	1.05	#VALUE!	
57 Fe	239,300.	47,860.	ppb	1.43	100000.	
59 Co	107.55	21.51	ppb	0.22	1000.	
60 Ni	274.2	54.84	ppb	0.52	1000.	
63 Cu	210.2	42.04	ppb	0.76	#VALUE!	
65 Cu	211.65	42.33	ppb	0.71	2000.	
66 Zn	738.	147.6	ppb	0.87	2000.	
68 Zn	778.5	155.7	ppb	0.99	#VALUE!	
75 As	209.75	41.95	ppb	0.17	1000.	
82 Se	5.425	1.085	ppb	13.05	1000.	
88 Sr	953.	190.6	ppb	1.82	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.92	1.984	ppb	0.30	1000.	
107 Ag	1.6705	0.3341	ppb	1.79	100.	
109 Ag	1.555	0.311	ppb	7.47	#VALUE!	
111 Cd	3.2185	0.6437	ppb	3.12	#VALUE!	
114 Cd	-0.2036	-0.0407	ppb	36.71	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	51.9	10.38	ppb	0.88	1000.	
120 Sn	52.3	10.46	ppb	0.55	#VALUE!	
121 Sb	2.853	0.5706	ppb	5.25	#VALUE!	
123 Sb	2.8955	0.5791	ppb	4.90	1000.	
135 Ba	2,059.5	411.9	ppb	0.41	2000.	
137 Ba	2,074.	414.8	ppb	1.00	#VALUE!	
182 W	1.0355	0.2071	ppb	12.17	1000.	
203 Tl	4.0695	0.8139	ppb	2.76	1000.	
205 Tl	4.0925	0.8185	ppb	1.66	#VALUE!	
208 Pb	199.95	39.99	ppb	0.36	2000.	
232 Th	119.55	23.91	ppb	0.45	1000.	
238 U	25.17	5.034	ppb	0.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2748004.50	0.81	2473849.30	111.1	69.5 - 120	
45 Sc	2619827.80	0.95	2284758.30	114.7	69.5 - 120	
72 Ge	495184.97	1.10	440097.94	112.5	69.5 - 120	
159 Tb	3677223.30	0.36	3175870.30	115.8	69.5 - 120	
209 Bi	1926307.60	0.33	1777464.10	108.4	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000426

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\039SMPL.D\039SMPL.D#
Date Acquired: Mar 26 2018 05:49 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	15.	1.5	ppb	1.69	100.	
11 B	129.6	12.96	ppb	3.22	1000.	
23 Na	36,020.	3,602.	ppb	1.76	200000.	
25 Mg	96,270.	9,627.	ppb	0.72	200000.	
27 Al	260,400.	26,040.	ppb	0.32	200000.	
28 Si	-448.5	-44.85	ppb	140.00	#VALUE!	
29 Si	-3,219.	-321.9	ppb	14.65	10000.	LOW
39 K	72,930.	7,293.	ppb	0.80	200000.	
43 Ca	186,700.	18,670.	ppb	0.80	#VALUE!	
44 Ca	180,600.	18,060.	ppb	1.14	200000.	
51 V	571.4	57.14	ppb	0.05	1000.	
52 Cr	248.1	24.81	ppb	0.51	2000.	
53 Cr	265.	26.5	ppb	1.10	#VALUE!	
55 Mn	2,054.	205.4	ppb	0.56	2000.	
56 Fe	272,300.	27,230.	ppb	0.22	#VALUE!	
57 Fe	265,000.	26,500.	ppb	0.19	100000.	
59 Co	120.9	12.09	ppb	1.22	1000.	
60 Ni	306.7	30.67	ppb	0.40	1000.	
63 Cu	234.1	23.41	ppb	0.95	#VALUE!	
65 Cu	237.1	23.71	ppb	1.13	2000.	
66 Zn	829.9	82.99	ppb	0.20	2000.	
68 Zn	868.9	86.89	ppb	1.04	#VALUE!	
75 As	235.5	23.55	ppb	1.91	1000.	
82 Se	8.811	0.8811	ppb	53.01	1000.	
88 Sr	1,070.	107.	ppb	0.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.71	1.071	ppb	1.73	1000.	
107 Ag	1.937	0.1937	ppb	7.03	100.	
109 Ag	1.731	0.1731	ppb	12.15	#VALUE!	
111 Cd	2.728	0.2728	ppb	14.78	#VALUE!	
114 Cd	-0.373	-0.0373	ppb	44.24	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.88	5.788	ppb	1.68	1000.	
120 Sn	58.31	5.831	ppb	0.80	#VALUE!	
121 Sb	2.978	0.2978	ppb	6.47	#VALUE!	
123 Sb	3.095	0.3095	ppb	7.91	1000.	
135 Ba	2,252.	225.2	ppb	0.62	2000.	
137 Ba	2,275.	227.5	ppb	0.45	#VALUE!	
182 W	1.153	0.1153	ppb	15.77	1000.	
203 Tl	4.545	0.4545	ppb	6.03	1000.	
205 Tl	4.441	0.4441	ppb	1.74	#VALUE!	
208 Pb	213.8	21.38	ppb	0.75	2000.	
232 Th	126.3	12.63	ppb	1.12	1000.	
238 U	26.77	2.677	ppb	2.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2683479.00	0.72	2473849.30	108.5	69.5 - 120	
45 Sc	2552411.50	0.81	2284758.30	111.7	69.5 - 120	
72 Ge	484060.19	0.95	440097.94	110.0	69.5 - 120	
159 Tb	3601572.00	0.40	3175870.30	113.4	69.5 - 120	
209 Bi	1938564.10	0.54	1777464.10	109.1	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000427

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\040_CCV.D\040_CCV.D#
Date Acquired: Mar 26 2018 05:53 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.73	ppb	1.54	25	98.92	
11 B	26.06	ppb	3.14	25	104.24	
23 Na	4,974.	ppb	0.75	5,000	99.48	
25 Mg	5,057.	ppb	1.06	5,000	101.14	
27 Al	518.1	ppb	5.27	500	103.62	
28 Si	425.5	ppb	27.29	500	85.1	
29 Si	226.1	ppb	38.15	500	45.22	Fail
39 K	5,014.	ppb	0.38	5,000	100.28	
43 Ca	5,096.	ppb	0.77	5,000	101.92	
44 Ca	5,144.	ppb	0.78	5,000	102.88	
51 V	24.93	ppb	1.70	25	99.72	
52 Cr	25.14	ppb	1.64	25	100.56	
53 Cr	25.06	ppb	2.04	25	100.24	
55 Mn	25.38	ppb	0.46	25	101.52	
56 Fe	5,026.	ppb	0.41	5,000	100.52	
57 Fe	5,142.	ppb	0.76	5,000	102.84	
59 Co	25.12	ppb	0.78	25	100.48	
60 Ni	25.29	ppb	1.09	25	101.16	
63 Cu	25.16	ppb	1.29	25	100.64	
65 Cu	25.39	ppb	0.29	25	101.56	
66 Zn	25.79	ppb	0.92	25	103.16	
68 Zn	25.25	ppb	0.59	25	101	
75 As	25.5	ppb	0.49	25	102	
82 Se	25.57	ppb	0.84	25	102.28	
88 Sr	25.39	ppb	0.31	25	101.56	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.05	ppb	0.83	25	100.2	
107 Ag	25.7	ppb	0.95	25	102.8	
109 Ag	25.4	ppb	0.78	25	101.6	
111 Cd	25.29	ppb	0.15	25	101.16	
114 Cd	25.38	ppb	0.84	25	101.52	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.17	ppb	0.13	25	100.68	
120 Sn	25.43	ppb	1.73	25	101.72	
121 Sb	25.38	ppb	1.60	25	101.52	
123 Sb	25.41	ppb	0.73	25	101.64	
135 Ba	25.71	ppb	0.70	25	102.84	
137 Ba	25.61	ppb	0.66	25	102.44	
182 W	25.03	ppb	1.74	25	100.12	
203 Tl	24.99	ppb	1.60	25	99.96	
205 Tl	24.89	ppb	1.23	25	99.56	
208 Pb	24.97	ppb	1.39	25	99.88	
232 Th	24.54	ppb	2.17	25	98.16	
238 U	23.97	ppb	2.03	25	95.88	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2653831.50	0.60	2473849.30	107.3	80 - 120.4	
45 Sc	2458954.50	1.06	2284758.30	107.6	80 - 120.4	
72 Ge	468456.09	1.29	440097.94	106.4	80 - 120.4	
159 Tb	3471402.50	0.58	3175870.30	109.3	80 - 120.4	
209 Bi	1912669.40	0.50	1777464.10	107.6	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000428

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\041_CCB.D\041_CCB.D#
Date Acquired: Mar 26 2018 05:57 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.001	ppb	295.56	1.00	
11 B	1.417	ppb	1.51	1.00	
23 Na	1.079	ppb	20.54	1.00	
25 Mg	-0.5471	ppb	2.47	1.00	
27 Al	-0.5125	ppb	16.55	1.00	
28 Si	-100.1	ppb	170.43	1.00	
29 Si	-143.	ppb	54.05	1.00	
39 K	-4.951	ppb	24.32	1.00	
43 Ca	-3.906	ppb	179.37	1.00	
44 Ca	-1.967	ppb	107.07	1.00	
51 V	0.0311	ppb	160.77	1.00	
52 Cr	-0.0142	ppb	153.73	1.00	
53 Cr	-0.1794	ppb	72.13	1.00	
55 Mn	0.0021	ppb	500.24	1.00	
56 Fe	-3.546	ppb	86.94	1.00	
57 Fe	0.7701	ppb	238.15	1.00	
59 Co	0.0039	ppb	72.60	1.00	
60 Ni	0.0054	ppb	137.46	1.00	
63 Cu	0.015	ppb	44.66	1.00	
65 Cu	-0.0072	ppb	228.53	1.00	
66 Zn	0.2388	ppb	28.64	1.00	
68 Zn	0.2048	ppb	117.48	1.00	
75 As	-0.0155	ppb	1199.10	1.00	
82 Se	0.0387	ppb	1521.80	1.00	
88 Sr	0.	ppb	2997.70	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0022	ppb	112.85	1.00	
107 Ag	0.0007	ppb	456.14	1.00	
109 Ag	0.0013	ppb	160.68	1.00	
111 Cd	0.0094	ppb	272.59	1.00	
114 Cd	0.0023	ppb	129.65	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0357	ppb	42.46	1.00	
120 Sn	-0.0105	ppb	200.10	1.00	
121 Sb	0.0012	ppb	51.98	1.00	
123 Sb	-0.0012	ppb	376.76	1.00	
135 Ba	-0.0007	ppb	2332.70	1.00	
137 Ba	0.0123	ppb	90.75	1.00	
182 W	0.0168	ppb	64.05	1.00	
203 Tl	0.0069	ppb	41.28	1.00	
205 Tl	0.007	ppb	31.75	1.00	
208 Pb	-0.0021	ppb	121.96	1.00	
232 Th	0.0133	ppb	4.42	1.00	
238 U	0.0042	ppb	30.58	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2465997.80	0.56	2473849.30	99.7	79.5 - 120	
45 Sc	2306372.50	0.84	2284758.30	100.9	79.5 - 120	
72 Ge	441874.81	1.44	440097.94	100.4	79.5 - 120	
159 Tb	3242415.80	0.40	3175870.30	102.1	79.5 - 120	
209 Bi	1790471.60	0.86	1777464.10	100.7	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000429

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\042SMPL.D\042SMPL.D#
Date Acquired: Mar 26 2018 06:02 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2079-002
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 20.00
Autodil Factor: Undiluted
Final Dil Factor: 20.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	6.044	0.3022	ppb	4.60	100.	
11 B	65.98	3.299	ppb	3.07	1000.	
23 Na	14,476.	723.8	ppb	0.78	200000.	
25 Mg	40,360.	2,018.	ppb	1.16	200000.	
27 Al	104,140.	5,207.	ppb	1.49	200000.	
28 Si	-7,450.	-372.5	ppb	12.09	#VALUE!	
29 Si	-10,440.	-522.	ppb	11.65	10000.	LOW
39 K	28,660.	1,433.	ppb	1.50	200000.	
43 Ca	74,800.	3,740.	ppb	2.59	#VALUE!	
44 Ca	74,800.	3,740.	ppb	1.69	200000.	
51 V	225.	11.25	ppb	1.76	1000.	
52 Cr	98.72	4.936	ppb	1.71	2000.	
53 Cr	98.88	4.944	ppb	4.52	#VALUE!	
55 Mn	841.6	42.08	ppb	0.20	2000.	
56 Fe	108,460.	5,423.	ppb	1.68	#VALUE!	
57 Fe	110,780.	5,539.	ppb	1.46	100000.	
59 Co	48.88	2.444	ppb	2.13	1000.	
60 Ni	125.9	6.295	ppb	1.58	1000.	
63 Cu	96.7	4.835	ppb	1.72	#VALUE!	
65 Cu	97.6	4.88	ppb	1.89	2000.	
66 Zn	343.8	17.19	ppb	2.00	2000.	
68 Zn	353.6	17.68	ppb	0.99	#VALUE!	
75 As	97.06	4.853	ppb	1.84	1000.	
82 Se	0.7866	0.0393	ppb	469.87	1000.	
88 Sr	424.2	21.21	ppb	0.58	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.84	0.192	ppb	3.35	1000.	
107 Ag	0.6416	0.0321	ppb	8.81	100.	
109 Ag	0.716	0.0358	ppb	5.12	#VALUE!	
111 Cd	1.3804	0.069	ppb	17.84	#VALUE!	
114 Cd	0.2436	0.0122	ppb	20.87	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	23.26	1.163	ppb	2.68	1000.	
120 Sn	23.4	1.17	ppb	3.83	#VALUE!	
121 Sb	1.437	0.0719	ppb	19.79	#VALUE!	
123 Sb	1.1936	0.0597	ppb	13.43	1000.	
135 Ba	897.6	44.88	ppb	1.02	2000.	
137 Ba	903.8	45.19	ppb	1.45	#VALUE!	
182 W	0.3746	0.0187	ppb	24.82	1000.	
203 Tl	1.7146	0.0857	ppb	24.85	1000.	
205 Tl	1.7652	0.0883	ppb	6.39	#VALUE!	
208 Pb	83.9	4.195	ppb	0.86	2000.	
232 Th	47.78	2.389	ppb	1.21	1000.	
238 U	9.898	0.4949	ppb	1.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2735205.50	0.88	2473849.30	110.6	69.5 - 120	
45 Sc	2538840.30	1.53	2284758.30	111.1	69.5 - 120	
72 Ge	481949.63	0.08	440097.94	109.5	69.5 - 120	
159 Tb	3485584.00	1.57	3175870.30	109.8	69.5 - 120	
209 Bi	1948444.50	1.00	1777464.10	109.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000430

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\043SMPL.D\043SMPL.D#
Date Acquired: Mar 26 2018 06:06 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.315	2.263	ppb	1.64	100.	
11 B	98.4	19.68	ppb	3.88	1000.	
23 Na	5,935.	1,187.	ppb	0.37	200000.	
25 Mg	84,350.	16,870.	ppb	1.98	200000.	
27 Al	209,250.	41,850.	ppb	2.19	200000.	
28 Si	1,474.	294.8	ppb	39.99	#VALUE!	
29 Si	311.75	62.35	ppb	102.63	10000.	
39 K	43,950.	8,790.	ppb	0.80	200000.	
43 Ca	110,700.	22,140.	ppb	1.08	#VALUE!	
44 Ca	106,000.	21,200.	ppb	0.36	200000.	
51 V	418.55	83.71	ppb	2.19	1000.	
52 Cr	235.95	47.19	ppb	1.50	2000.	
53 Cr	262.15	52.43	ppb	1.42	#VALUE!	
55 Mn	4,560.5	912.1	ppb	1.17	2000.	
56 Fe	251,500.	50,300.	ppb	1.13	#VALUE!	
57 Fe	242,650.	48,530.	ppb	1.23	100000.	
59 Co	66.25	13.25	ppb	1.86	1000.	
60 Ni	204.4	40.88	ppb	0.68	1000.	
63 Cu	191.	38.2	ppb	1.62	#VALUE!	
65 Cu	193.55	38.71	ppb	0.95	2000.	
66 Zn	701.	140.2	ppb	0.75	2000.	
68 Zn	808.5	161.7	ppb	1.88	#VALUE!	
75 As	81.95	16.39	ppb	2.54	1000.	
82 Se	6.13	1.226	ppb	22.72	1000.	
88 Sr	714.	142.8	ppb	1.72	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.162	0.6324	ppb	2.40	1000.	
107 Ag	1.0775	0.2155	ppb	6.94	100.	
109 Ag	0.9285	0.1857	ppb	7.65	#VALUE!	
111 Cd	5.76	1.152	ppb	0.87	#VALUE!	
114 Cd	2.2665	0.4533	ppb	11.27	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	52.9	10.58	ppb	3.01	1000.	
120 Sn	52.8	10.56	ppb	1.88	#VALUE!	
121 Sb	1.6315	0.3263	ppb	7.59	#VALUE!	
123 Sb	1.68	0.336	ppb	2.92	1000.	
135 Ba	3,832.5	766.5	ppb	2.09	2000.	
137 Ba	3,857.	771.4	ppb	1.33	#VALUE!	
182 W	0.768	0.1536	ppb	13.25	1000.	
203 Tl	3.9245	0.7849	ppb	4.63	1000.	
205 Tl	3.8095	0.7619	ppb	1.25	#VALUE!	
208 Pb	175.55	35.11	ppb	0.91	2000.	
232 Th	110.85	22.17	ppb	0.59	1000.	
238 U	11.2	2.24	ppb	0.84	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2727966.50	0.58	2473849.30	110.3	69.5 - 120	
45 Sc	2607481.00	0.79	2284758.30	114.1	69.5 - 120	
72 Ge	496678.41	0.94	440097.94	112.9	69.5 - 120	
159 Tb	3646117.50	1.72	3175870.30	114.8	69.5 - 120	
209 Bi	1929713.30	0.78	1777464.10	108.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000431

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\044SMPL.D\044SMPL.D#
Date Acquired: Mar 26 2018 06:10 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	12.74	1.274	ppb	1.40	100.	
11 B	108.8	10.88	ppb	5.11	1000.	
23 Na	6,637.	663.7	ppb	1.02	200000.	
25 Mg	94,170.	9,417.	ppb	1.00	200000.	
27 Al	232,200.	23,220.	ppb	1.11	200000.	
28 Si	174.7	17.47	ppb	960.50	#VALUE!	
29 Si	-2,371.	-237.1	ppb	33.72	10000.	LOW
39 K	48,600.	4,860.	ppb	1.00	200000.	
43 Ca	122,100.	12,210.	ppb	1.15	#VALUE!	
44 Ca	119,500.	11,950.	ppb	0.81	200000.	
51 V	461.4	46.14	ppb	1.63	1000.	
52 Cr	266.	26.6	ppb	1.31	2000.	
53 Cr	288.3	28.83	ppb	1.76	#VALUE!	
55 Mn	5,084.	508.4	ppb	1.19	2000.	
56 Fe	281,800.	28,180.	ppb	1.45	#VALUE!	
57 Fe	271,400.	27,140.	ppb	1.31	100000.	
59 Co	72.79	7.279	ppb	2.12	1000.	
60 Ni	229.7	22.97	ppb	1.98	1000.	
63 Cu	218.5	21.85	ppb	0.47	#VALUE!	
65 Cu	218.4	21.84	ppb	1.07	2000.	
66 Zn	803.3	80.33	ppb	1.10	2000.	
68 Zn	920.4	92.04	ppb	1.25	#VALUE!	
75 As	92.85	9.285	ppb	1.51	1000.	
82 Se	6.072	0.6072	ppb	38.62	1000.	
88 Sr	792.3	79.23	ppb	1.29	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.383	0.3383	ppb	8.69	1000.	
107 Ag	1.145	0.1145	ppb	6.70	100.	
109 Ag	1.096	0.1096	ppb	1.75	#VALUE!	
111 Cd	6.395	0.6395	ppb	3.97	#VALUE!	
114 Cd	2.828	0.2828	ppb	5.57	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	57.85	5.785	ppb	1.75	1000.	
120 Sn	57.24	5.724	ppb	1.28	#VALUE!	
121 Sb	1.781	0.1781	ppb	7.61	#VALUE!	
123 Sb	1.633	0.1633	ppb	13.42	1000.	
135 Ba	4,203.	420.3	ppb	1.04	2000.	
137 Ba	4,222.	422.2	ppb	0.71	#VALUE!	
182 W	0.8434	0.0843	ppb	16.16	1000.	
203 Tl	3.914	0.3914	ppb	5.55	1000.	
205 Tl	4.046	0.4046	ppb	4.27	#VALUE!	
208 Pb	189.1	18.91	ppb	0.27	2000.	
232 Th	117.4	11.74	ppb	0.51	1000.	
238 U	11.79	1.179	ppb	1.04	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2764515.80	3.00	2473849.30	111.7	69.5 - 120	
45 Sc	2609643.50	1.50	2284758.30	114.2	69.5 - 120	
72 Ge	493929.56	1.66	440097.94	112.2	69.5 - 120	
159 Tb	3639668.80	1.25	3175870.30	114.6	69.5 - 120	
209 Bi	1958241.40	0.76	1777464.10	110.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000432

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\045SMPL.D\045SMPL.D#
Date Acquired: Mar 26 2018 06:14 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2133-001
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 20.00
Autodil Factor: Undiluted
Final Dil Factor: 20.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.666	0.2333	ppb	5.56	100.	
11 B	53.06	2.653	ppb	5.07	1000.	
23 Na	2,618.	130.9	ppb	0.66	200000.	
25 Mg	37,180.	1,859.	ppb	1.32	200000.	
27 Al	86,780.	4,339.	ppb	1.74	200000.	
28 Si	-3,420.	-171.	ppb	42.11	#VALUE!	
29 Si	-8,094.	-404.7	ppb	12.71	10000.	LOW
39 K	18,060.	903.	ppb	2.25	200000.	
43 Ca	46,380.	2,319.	ppb	1.96	#VALUE!	
44 Ca	45,360.	2,268.	ppb	1.91	200000.	
51 V	171.18	8.559	ppb	0.59	1000.	
52 Cr	99.76	4.988	ppb	1.09	2000.	
53 Cr	104.8	5.24	ppb	3.41	#VALUE!	
55 Mn	2,000.	100.	ppb	0.69	2000.	
56 Fe	105,080.	5,254.	ppb	0.82	#VALUE!	
57 Fe	106,680.	5,334.	ppb	0.51	100000.	
59 Co	28.18	1.409	ppb	1.66	1000.	
60 Ni	88.12	4.406	ppb	0.73	1000.	
63 Cu	84.14	4.207	ppb	1.96	#VALUE!	
65 Cu	85.28	4.264	ppb	0.26	2000.	
66 Zn	311.	15.55	ppb	2.64	2000.	
68 Zn	350.4	17.52	ppb	1.51	#VALUE!	
75 As	34.46	1.723	ppb	5.28	1000.	
82 Se	1.3958	0.0698	ppb	506.23	1000.	
88 Sr	297.	14.85	ppb	0.21	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.0398	0.052	ppb	15.86	1000.	
107 Ag	0.5044	0.0252	ppb	31.17	100.	
109 Ag	0.3168	0.0158	ppb	39.68	#VALUE!	
111 Cd	2.466	0.1233	ppb	23.20	#VALUE!	
114 Cd	1.0694	0.0535	ppb	21.00	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	21.96	1.098	ppb	4.77	1000.	
120 Sn	21.34	1.067	ppb	4.75	#VALUE!	
121 Sb	0.6738	0.0337	ppb	6.18	#VALUE!	
123 Sb	0.733	0.0367	ppb	11.78	1000.	
135 Ba	1,572.2	78.61	ppb	2.79	2000.	
137 Ba	1,574.2	78.71	ppb	2.11	#VALUE!	
182 W	0.2622	0.0131	ppb	68.16	1000.	
203 Tl	1.5128	0.0756	ppb	9.58	1000.	
205 Tl	1.6092	0.0805	ppb	18.93	#VALUE!	
208 Pb	69.26	3.463	ppb	1.59	2000.	
232 Th	42.9	2.145	ppb	1.99	1000.	
238 U	4.114	0.2057	ppb	3.06	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2722567.80	1.03	2473849.30	110.1	69.5 - 120	
45 Sc	2502122.30	1.80	2284758.30	109.5	69.5 - 120	
72 Ge	475825.69	0.41	440097.94	108.1	69.5 - 120	
159 Tb	3485936.30	2.22	3175870.30	109.8	69.5 - 120	
209 Bi	1931303.30	2.03	1777464.10	108.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000433

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\046SMPL.D\046SMPL.D#
Date Acquired: Mar 26 2018 06:18 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: RINSE
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0019	0.0019	ppb	54.39	100.	
11 B	0.746	0.746	ppb	6.15	1000.	
23 Na	0.5769	0.5769	ppb	12.61	200000.	
25 Mg	-0.4813	-0.4813	ppb	13.10	200000.	
27 Al	0.014	0.014	ppb	545.88	200000.	
28 Si	253.1	253.1	ppb	48.36	#VALUE!	
29 Si	79.55	79.55	ppb	75.05	10000.	
39 K	0.2782	0.2782	ppb	46.59	200000.	
43 Ca	-2.021	-2.021	ppb	186.99	#VALUE!	
44 Ca	1.441	1.441	ppb	123.46	200000.	
51 V	-0.03	-0.03	ppb	136.80	1000.	
52 Cr	-0.02	-0.02	ppb	105.16	2000.	
53 Cr	-0.1947	-0.1947	ppb	24.43	#VALUE!	
55 Mn	0.0254	0.0254	ppb	32.40	2000.	
56 Fe	-1.018	-1.018	ppb	446.17	#VALUE!	
57 Fe	-2.026	-2.026	ppb	111.20	100000.	
59 Co	0.0026	0.0026	ppb	263.97	1000.	
60 Ni	0.0027	0.0027	ppb	363.72	1000.	
63 Cu	0.0224	0.0224	ppb	25.53	#VALUE!	
65 Cu	0.0027	0.0027	ppb	205.14	2000.	
66 Zn	0.0857	0.0857	ppb	38.51	2000.	
68 Zn	-0.1118	-0.1118	ppb	137.39	#VALUE!	
75 As	0.1716	0.1716	ppb	154.14	1000.	
82 Se	0.1324	0.1324	ppb	262.01	1000.	
88 Sr	0.0028	0.0028	ppb	156.66	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	-0.0078	-0.0078	ppb	93.48	1000.	
107 Ag	0.0023	0.0023	ppb	123.10	100.	
109 Ag	-0.0007	-0.0007	ppb	71.67	#VALUE!	
111 Cd	-0.0319	-0.0319	ppb	7.85	#VALUE!	
114 Cd	0.0029	0.0029	ppb	118.33	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0457	0.0457	ppb	44.03	1000.	
120 Sn	0.0108	0.0108	ppb	65.54	#VALUE!	
121 Sb	0.0028	0.0028	ppb	97.16	#VALUE!	
123 Sb	-0.0002	-0.0002	ppb	2449.30	1000.	
135 Ba	0.0005	0.0005	ppb	2538.50	2000.	
137 Ba	0.0129	0.0129	ppb	109.56	#VALUE!	
182 W	-0.0027	-0.0027	ppb	220.23	1000.	
203 Tl	0.0015	0.0015	ppb	655.82	1000.	
205 Tl	0.0048	0.0048	ppb	40.63	#VALUE!	
208 Pb	-0.0008	-0.0008	ppb	165.67	2000.	
232 Th	0.0035	0.0035	ppb	10.78	1000.	
238 U	0.	0.	ppb	1439.40	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2392631.80	0.67	2473849.30	96.7	69.5 - 120	
45 Sc	2249963.00	0.86	2284758.30	98.5	69.5 - 120	
72 Ge	428817.09	1.25	440097.94	97.4	69.5 - 120	
159 Tb	3109806.80	0.69	3175870.30	97.9	69.5 - 120	
209 Bi	1736237.40	0.87	1777464.10	97.7	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000434

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\047SMPL.D\047SMPL.D#
Date Acquired: Mar 26 2018 06:22 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: PBWLC23IMW1
Misc Info:
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0009	0.0009	ppb	380.24	100.	
11 B	0.5495	0.5495	ppb	12.73	1000.	
23 Na	7.039	7.039	ppb	5.27	200000.	
25 Mg	6.521	6.521	ppb	4.42	200000.	
27 Al	3.374	3.374	ppb	0.93	200000.	
28 Si	33.78	33.78	ppb	550.62	#VALUE!	
29 Si	-80.38	-80.38	ppb	77.73	10000.	
39 K	-4.996	-4.996	ppb	19.34	200000.	
43 Ca	8.119	8.119	ppb	101.22	#VALUE!	
44 Ca	6.083	6.083	ppb	14.17	200000.	
51 V	-0.0321	-0.0321	ppb	259.58	1000.	
52 Cr	0.0137	0.0137	ppb	115.58	2000.	
53 Cr	-0.2851	-0.2851	ppb	95.44	#VALUE!	
55 Mn	0.0192	0.0192	ppb	20.90	2000.	
56 Fe	-6.719	-6.719	ppb	35.99	#VALUE!	
57 Fe	-0.535	-0.535	ppb	429.16	100000.	
59 Co	0.0005	0.0005	ppb	532.78	1000.	
60 Ni	-0.002	-0.002	ppb	154.98	1000.	
63 Cu	0.0043	0.0043	ppb	108.08	#VALUE!	
65 Cu	0.0118	0.0118	ppb	69.30	2000.	
66 Zn	0.107	0.107	ppb	29.31	2000.	
68 Zn	-0.0615	-0.0615	ppb	253.38	#VALUE!	
75 As	0.0863	0.0863	ppb	71.13	1000.	
82 Se	-0.0045	-0.0045	ppb	10620.00	1000.	
88 Sr	0.0195	0.0195	ppb	17.71	2000.	
89 Y	----	--------	---	---	#VALUE!	
98 Mo	-0.0121	-0.0121	ppb	7.51	1000.	
107 Ag	0.0004	0.0004	ppb	657.04	100.	
109 Ag	-0.0006	-0.0006	ppb	248.76	#VALUE!	
111 Cd	-0.0015	-0.0015	ppb	950.70	#VALUE!	
114 Cd	0.006	0.006	ppb	56.64	1000.	
115 In	----	--------	---	---	#VALUE!	
118 Sn	0.0035	0.0035	ppb	354.88	1000.	
120 Sn	-0.0298	-0.0298	ppb	56.15	#VALUE!	
121 Sb	0.0038	0.0038	ppb	63.97	#VALUE!	
123 Sb	0.0031	0.0031	ppb	249.47	1000.	
135 Ba	0.0092	0.0092	ppb	162.04	2000.	
137 Ba	0.0108	0.0108	ppb	156.07	#VALUE!	
182 W	-0.0015	-0.0015	ppb	324.71	1000.	
203 Tl	0.0028	0.0028	ppb	261.31	1000.	
205 Tl	0.0038	0.0038	ppb	78.51	#VALUE!	
208 Pb	0.0039	0.0039	ppb	88.60	2000.	
232 Th	0.0016	0.0016	ppb	90.39	1000.	
238 U	0.0007	0.0007	ppb	156.52	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2566804.30	1.72	2473849.30	103.8	69.5 - 120	
45 Sc	2351391.50	1.08	2284758.30	102.9	69.5 - 120	
72 Ge	446115.66	1.88	440097.94	101.4	69.5 - 120	
159 Tb	3221929.30	1.57	3175870.30	101.5	69.5 - 120	
209 Bi	1780705.60	0.97	1777464.10	100.2	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000435

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\048SMPL.D\048SMPL.D#
Date Acquired: Mar 26 2018 06:26 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: LCSWLC23IMW1
Misc Info:
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	44.84	8.968	ppb	0.59	100.	
11 B	496.6	99.32	ppb	4.13	1000.	
23 Na	7,560.	1,512.	ppb	1.92	200000.	
25 Mg	4,952.	990.4	ppb	1.70	200000.	
27 Al	1,903.5	380.7	ppb	1.26	200000.	
28 Si	-277.4	-55.48	ppb	22.73	#VALUE!	
29 Si	-951.	-190.2	ppb	16.86	10000.	LOW
39 K	10,010.	2,002.	ppb	1.25	200000.	
43 Ca	2,859.5	571.9	ppb	5.02	#VALUE!	
44 Ca	2,465.5	493.1	ppb	0.89	200000.	
51 V	467.	93.4	ppb	1.81	1000.	
52 Cr	182.6	36.52	ppb	0.91	2000.	
53 Cr	182.5	36.5	ppb	2.07	#VALUE!	
55 Mn	466.	93.2	ppb	1.71	2000.	
56 Fe	873.	174.6	ppb	3.11	#VALUE!	
57 Fe	925.5	185.1	ppb	3.22	100000.	
59 Co	469.05	93.81	ppb	1.14	1000.	
60 Ni	468.3	93.66	ppb	0.98	1000.	
63 Cu	233.3	46.66	ppb	1.39	#VALUE!	
65 Cu	234.1	46.82	ppb	0.97	2000.	
66 Zn	471.4	94.28	ppb	0.88	2000.	
68 Zn	529.5	105.9	ppb	0.24	#VALUE!	
75 As	103.5	20.7	ppb	1.57	1000.	
82 Se	102.5	20.5	ppb	0.92	1000.	
88 Sr	501.5	100.3	ppb	1.60	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	98.9	19.78	ppb	0.15	1000.	
107 Ag	45.99	9.198	ppb	1.05	100.	
109 Ag	45.91	9.182	ppb	1.04	#VALUE!	
111 Cd	254.85	50.97	ppb	0.55	#VALUE!	
114 Cd	253.7	50.74	ppb	0.42	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	510.5	102.1	ppb	1.99	1000.	
120 Sn	509.	101.8	ppb	1.47	#VALUE!	
121 Sb	103.95	20.79	ppb	2.09	#VALUE!	
123 Sb	103.7	20.74	ppb	1.60	1000.	
135 Ba	1,874.	374.8	ppb	1.83	2000.	
137 Ba	1,883.	376.6	ppb	1.84	#VALUE!	
182 W	100.35	20.07	ppb	2.76	1000.	
203 Tl	99.35	19.87	ppb	0.34	1000.	
205 Tl	99.4	19.88	ppb	1.32	#VALUE!	
208 Pb	102.	20.4	ppb	1.77	2000.	
232 Th	96.75	19.35	ppb	0.66	1000.	
238 U	92.85	18.57	ppb	1.99	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2805872.80	0.63	2473849.30	113.4	69.5 - 120	
45 Sc	2534968.00	0.94	2284758.30	111.0	69.5 - 120	
72 Ge	475389.84	0.72	440097.94	108.0	69.5 - 120	
159 Tb	3450916.50	0.98	3175870.30	108.7	69.5 - 120	
209 Bi	1907312.90	0.45	1777464.10	107.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000436

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\049SMPL.D\049SMPL.D#
Date Acquired: Mar 26 2018 06:30 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2210-001
Misc Info: 50mL
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	307.7	307.7	ppb	0.41	100.	>LDR
11 B	1,187.	1,187.	ppb	5.59	1000.	>LDR
23 Na	115.	115.	ppb	0.17	200000.	
25 Mg	8.6	8.6	ppb	8.25	200000.	
27 Al	1,277.	1,277.	ppb	0.59	200000.	
28 Si	578.2	578.2	ppb	4.27	#VALUE!	
29 Si	338.1	338.1	ppb	10.39	10000.	
39 K	-13.78	-13.78	ppb	0.89	200000.	
43 Ca	87.	87.	ppb	6.53	#VALUE!	
44 Ca	14.42	14.42	ppb	29.50	200000.	
51 V	917.3	917.3	ppb	1.57	1000.	
52 Cr	913.5	913.5	ppb	2.25	2000.	
53 Cr	951.7	951.7	ppb	2.99	#VALUE!	
55 Mn	1,554.	1,554.	ppb	1.40	2000.	
56 Fe	3,924.	3,924.	ppb	1.64	#VALUE!	
57 Fe	3,890.	3,890.	ppb	2.00	100000.	
59 Co	704.6	704.6	ppb	2.31	1000.	
60 Ni	341.8	341.8	ppb	1.45	1000.	
63 Cu	551.2	551.2	ppb	1.24	#VALUE!	
65 Cu	562.3	562.3	ppb	1.81	2000.	
66 Zn	1,415.	1,415.	ppb	1.54	2000.	
68 Zn	1,418.	1,418.	ppb	1.89	#VALUE!	
75 As	329.7	329.7	ppb	0.73	1000.	
82 Se	521.3	521.3	ppb	0.85	1000.	
88 Sr	93.28	93.28	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	287.2	287.2	ppb	1.25	1000.	
107 Ag	154.4	154.4	ppb	0.75	100.	>LDR
109 Ag	153.5	153.5	ppb	1.12	#VALUE!	
111 Cd	656.9	656.9	ppb	0.68	#VALUE!	
114 Cd	658.7	658.7	ppb	0.50	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.1055	0.1055	ppb	15.76	1000.	
120 Sn	0.0704	0.0704	ppb	3.78	#VALUE!	
121 Sb	485.	485.	ppb	1.24	#VALUE!	
123 Sb	484.	484.	ppb	1.22	1000.	
135 Ba	1,203.	1,203.	ppb	0.47	2000.	
137 Ba	1,198.	1,198.	ppb	0.33	#VALUE!	
182 W	0.0584	0.0584	ppb	7.72	1000.	
203 Tl	745.6	745.6	ppb	0.64	1000.	
205 Tl	718.3	718.3	ppb	0.45	#VALUE!	
208 Pb	937.6	937.6	ppb	0.54	2000.	
232 Th	0.0405	0.0405	ppb	46.87	1000.	
238 U	0.0047	0.0047	ppb	32.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2682703.30	0.27	2473849.30	108.4	69.5 - 120	
45 Sc	2437718.30	0.40	2284758.30	106.7	69.5 - 120	
72 Ge	455066.00	1.05	440097.94	103.4	69.5 - 120	
159 Tb	3387182.80	0.86	3175870.30	106.7	69.5 - 120	
209 Bi	1877548.10	0.47	1777464.10	105.6	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000437

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\050SMPL.D\050SMPL.D#
Date Acquired: Mar 26 2018 06:34 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2290-001
Misc Info:
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0184	0.0184	ppb	19.13	100.	
11 B	25.41	25.41	ppb	4.19	1000.	
23 Na	50,260.	50,260.	ppb	2.00	200000.	
25 Mg	19,380.	19,380.	ppb	1.45	200000.	
27 Al	5.506	5.506	ppb	2.16	200000.	
28 Si	2,610.	2,610.	ppb	4.20	#VALUE!	
29 Si	3,777.	3,777.	ppb	2.32	10000.	
39 K	1,635.	1,635.	ppb	1.31	200000.	
43 Ca	65,380.	65,380.	ppb	0.89	#VALUE!	
44 Ca	61,460.	61,460.	ppb	0.22	200000.	
51 V	0.0008	0.0008	ppb	1876.80	1000.	
52 Cr	0.2059	0.2059	ppb	12.75	2000.	
53 Cr	-0.3264	-0.3264	ppb	30.60	#VALUE!	
55 Mn	0.6589	0.6589	ppb	0.73	2000.	
56 Fe	-15.84	-15.84	ppb	1.83	#VALUE!	
57 Fe	77.44	77.44	ppb	5.87	100000.	
59 Co	0.1812	0.1812	ppb	1.67	1000.	
60 Ni	0.8588	0.8588	ppb	10.18	1000.	
63 Cu	1.735	1.735	ppb	1.77	#VALUE!	
65 Cu	0.4485	0.4485	ppb	7.30	2000.	
66 Zn	2.426	2.426	ppb	4.12	2000.	
68 Zn	3.406	3.406	ppb	14.64	#VALUE!	
75 As	0.3443	0.3443	ppb	27.24	1000.	
82 Se	0.5957	0.5957	ppb	20.11	1000.	
88 Sr	249.8	249.8	ppb	1.62	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.0653	0.0653	ppb	28.06	1000.	
107 Ag	0.01	0.01	ppb	37.42	100.	
109 Ag	0.0118	0.0118	ppb	29.41	#VALUE!	
111 Cd	0.0701	0.0701	ppb	9.99	#VALUE!	
114 Cd	0.0528	0.0528	ppb	2.45	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0102	0.0102	ppb	15.18	1000.	
120 Sn	-0.0252	-0.0252	ppb	26.89	#VALUE!	
121 Sb	0.0414	0.0414	ppb	15.30	#VALUE!	
123 Sb	0.0489	0.0489	ppb	26.24	1000.	
135 Ba	47.39	47.39	ppb	0.94	2000.	
137 Ba	48.08	48.08	ppb	1.11	#VALUE!	
182 W	0.0041	0.0041	ppb	228.50	1000.	
203 Tl	0.0463	0.0463	ppb	28.22	1000.	
205 Tl	0.0371	0.0371	ppb	12.97	#VALUE!	
208 Pb	0.0373	0.0373	ppb	9.99	2000.	
232 Th	0.0035	0.0035	ppb	29.61	1000.	
238 U	0.0027	0.0027	ppb	32.85	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2857453.00	1.77	2473849.30	115.5	69.5 - 120	
45 Sc	2686434.00	0.46	2284758.30	117.6	69.5 - 120	
72 Ge	507316.31	0.89	440097.94	115.3	69.5 - 120	
159 Tb	3658688.80	1.32	3175870.30	115.2	69.5 - 120	
209 Bi	1925024.40	1.13	1777464.10	108.3	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000438

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\051SMPL.D\051SMPL.D#
Date Acquired: Mar 26 2018 06:38 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: SL2308-001
Misc Info:
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0104	0.0104	ppb	7.44	100.	
11 B	39.96	39.96	ppb	1.05	1000.	
23 Na	45,650.	45,650.	ppb	1.12	200000.	
25 Mg	7,993.	7,993.	ppb	0.47	200000.	
27 Al	21.46	21.46	ppb	8.20	200000.	
28 Si	8,365.	8,365.	ppb	0.91	#VALUE!	
29 Si	9,972.	9,972.	ppb	1.42	10000.	
39 K	3,586.	3,586.	ppb	0.26	200000.	
43 Ca	15,780.	15,780.	ppb	0.49	#VALUE!	
44 Ca	15,300.	15,300.	ppb	0.99	200000.	
51 V	0.0408	0.0408	ppb	82.88	1000.	
52 Cr	1.063	1.063	ppb	2.53	2000.	
53 Cr	0.6051	0.6051	ppb	12.15	#VALUE!	
55 Mn	22.88	22.88	ppb	0.43	2000.	
56 Fe	105.3	105.3	ppb	2.42	#VALUE!	
57 Fe	143.3	143.3	ppb	5.56	100000.	
59 Co	0.2016	0.2016	ppb	4.74	1000.	
60 Ni	4.105	4.105	ppb	1.96	1000.	
63 Cu	7.078	7.078	ppb	0.95	#VALUE!	
65 Cu	5.856	5.856	ppb	1.22	2000.	
66 Zn	5.506	5.506	ppb	3.27	2000.	
68 Zn	7.004	7.004	ppb	3.64	#VALUE!	
75 As	27.07	27.07	ppb	0.81	1000.	
82 Se	0.0639	0.0639	ppb	544.05	1000.	
88 Sr	168.8	168.8	ppb	1.38	2000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	1.499	1.499	ppb	1.36	1000.	
107 Ag	-0.0008	-0.0008	ppb	263.78	100.	
109 Ag	0.0011	0.0011	ppb	190.43	#VALUE!	
111 Cd	0.0634	0.0634	ppb	24.84	#VALUE!	
114 Cd	0.0057	0.0057	ppb	124.32	1000.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.0345	0.0345	ppb	65.87	1000.	
120 Sn	-0.0164	-0.0164	ppb	48.22	#VALUE!	
121 Sb	6.512	6.512	ppb	1.55	#VALUE!	
123 Sb	6.534	6.534	ppb	1.57	1000.	
135 Ba	56.47	56.47	ppb	2.12	2000.	
137 Ba	56.21	56.21	ppb	1.84	#VALUE!	
182 W	0.3567	0.3567	ppb	7.85	1000.	
203 Tl	0.0137	0.0137	ppb	80.03	1000.	
205 Tl	0.0044	0.0044	ppb	52.96	#VALUE!	
208 Pb	0.1941	0.1941	ppb	5.12	2000.	
232 Th	0.0101	0.0101	ppb	14.98	1000.	
238 U	1.293	1.293	ppb	2.12	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2921206.00	2.33	2473849.30	118.1	69.5 - 120	
45 Sc	2724186.80	2.47	2284758.30	119.2	69.5 - 120	
72 Ge	518250.72	1.70	440097.94	117.8	69.5 - 120	
159 Tb	3668994.50	1.79	3175870.30	115.5	69.5 - 120	
209 Bi	1970473.80	0.80	1777464.10	110.9	69.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000439

CCV QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\052_CCV.D\052_CCV.D#
Date Acquired: Mar 26 2018 06:42 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCV
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Dilution Factor: 1.00
QC Range (%): 89.5 - 110.5

QC Elements

Element	Conc.		RSD(%)	Expected	Rec (%)	Flag
9 Be	24.57	ppb	1.57	25	98.28	
11 B	30.72	ppb	1.05	25	122.88	Fail
23 Na	4,934.	ppb	1.80	5,000	98.68	
25 Mg	5,106.	ppb	1.12	5,000	102.12	
27 Al	507.4	ppb	0.17	500	101.48	
28 Si	511.1	ppb	23.81	500	102.22	
29 Si	317.9	ppb	32.75	500	63.58	Fail
39 K	5,077.	ppb	0.63	5,000	101.54	
43 Ca	5,059.	ppb	1.54	5,000	101.18	
44 Ca	5,130.	ppb	1.27	5,000	102.6	
51 V	25.14	ppb	0.71	25	100.56	
52 Cr	25.41	ppb	1.29	25	101.64	
53 Cr	25.5	ppb	3.27	25	102	
55 Mn	25.22	ppb	0.59	25	100.88	
56 Fe	5,008.	ppb	1.72	5,000	100.16	
57 Fe	5,181.	ppb	1.62	5,000	103.62	
59 Co	25.42	ppb	0.73	25	101.68	
60 Ni	25.54	ppb	0.35	25	102.16	
63 Cu	25.18	ppb	0.93	25	100.72	
65 Cu	25.5	ppb	1.18	25	102	
66 Zn	25.72	ppb	0.66	25	102.88	
68 Zn	25.47	ppb	0.64	25	101.88	
75 As	25.74	ppb	0.17	25	102.96	
82 Se	25.63	ppb	1.41	25	102.52	
88 Sr	25.56	ppb	1.42	25	102.24	
89 Y	--------	---	--------	---	#VALUE!	
98 Mo	25.22	ppb	0.55	25	100.88	
107 Ag	25.58	ppb	0.68	25	102.32	
109 Ag	25.25	ppb	0.52	25	101	
111 Cd	25.62	ppb	1.67	25	102.48	
114 Cd	25.58	ppb	0.51	25	102.32	
115 In	--------	---	--------	---	#VALUE!	
118 Sn	25.68	ppb	0.75	25	102.72	
120 Sn	25.7	ppb	1.42	25	102.8	
121 Sb	25.41	ppb	1.52	25	101.64	
123 Sb	25.25	ppb	1.53	25	101	
135 Ba	25.59	ppb	1.18	25	102.36	
137 Ba	25.4	ppb	0.93	25	101.6	
182 W	25.29	ppb	0.61	25	101.16	
203 Tl	24.99	ppb	0.76	25	99.96	
205 Tl	24.87	ppb	0.79	25	99.48	
208 Pb	25.09	ppb	0.29	25	100.36	
232 Th	24.2	ppb	0.25	25	96.8	
238 U	22.72	ppb	0.35	25	90.88	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2690526.50	3.39	2473849.30	108.8	80 - 120.4	
45 Sc	2498134.30	2.21	2284758.30	109.3	80 - 120.4	
72 Ge	471609.75	1.38	440097.94	107.2	80 - 120.4	
159 Tb	3498066.30	1.45	3175870.30	110.1	80 - 120.4	
209 Bi	1920044.40	0.81	1777464.10	108.0	80 - 120.4	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000440

CCB QC Report

Data File: C:\ICPCHEM\1\DATA\JLC26B.B\053_CCB.D\053_CCB.D#
Date Acquired: Mar 26 2018 06:46 pm
Acq. Method: 1PTCALGe.M
Operator: MD
Sample Name: CCB
Misc Info:
Vial Number: 1207
Current Method: C:\ICPCHEM\1\METHODS\1PTCALGe.M
Calibration File: C:\ICPCHEM\1\CALIB\1PTCALGe.C
Last Cal. Update: Mar 26 2018 04:20 pm
Sample Type: 6-CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		RSD(%)	High Limit	Flag
9 Be	0.0036	ppb	79.86	1.00	
11 B	5.346	ppb	1.63	1.00	Fail
23 Na	0.6301	ppb	51.44	1.00	
25 Mg	-0.4771	ppb	21.59	1.00	
27 Al	-0.4751	ppb	9.21	1.00	
28 Si	84.42	ppb	404.52	1.00	
29 Si	2.504	ppb	8230.80	1.00	
39 K	-1.776	ppb	153.15	1.00	
43 Ca	-4.198	ppb	45.74	1.00	
44 Ca	0.3561	ppb	274.70	1.00	
51 V	-0.0051	ppb	1193.60	1.00	
52 Cr	0.0045	ppb	744.60	1.00	
53 Cr	-0.2029	ppb	50.32	1.00	
55 Mn	0.0297	ppb	58.87	1.00	
56 Fe	-1.932	ppb	211.34	1.00	
57 Fe	0.3522	ppb	544.01	1.00	
59 Co	0.0119	ppb	8.92	1.00	
60 Ni	0.0018	ppb	260.13	1.00	
63 Cu	0.0087	ppb	71.73	1.00	
65 Cu	-0.0042	ppb	355.38	1.00	
66 Zn	0.2336	ppb	44.69	1.00	
68 Zn	-0.022	ppb	751.37	1.00	
75 As	0.0607	ppb	44.01	1.00	
82 Se	0.0987	ppb	225.41	1.00	
88 Sr	0.0005	ppb	612.06	1.00	
89 Y	--------	---	--------	---	
98 Mo	0.0062	ppb	91.92	1.00	
107 Ag	0.0008	ppb	320.01	1.00	
109 Ag	0.	ppb	5735.30	1.00	
111 Cd	-0.0046	ppb	655.67	1.00	
114 Cd	0.0026	ppb	128.64	1.00	
115 In	--------	---	--------	---	
118 Sn	0.0542	ppb	47.64	1.00	
120 Sn	0.0067	ppb	242.81	1.00	
121 Sb	0.0045	ppb	70.34	1.00	
123 Sb	0.0073	ppb	83.89	1.00	
135 Ba	0.0052	ppb	414.20	1.00	
137 Ba	0.0124	ppb	5.98	1.00	
182 W	0.0138	ppb	50.47	1.00	
203 Tl	0.0072	ppb	91.60	1.00	
205 Tl	0.009	ppb	41.07	1.00	
208 Pb	0.0066	ppb	18.03	1.00	
232 Th	0.0105	ppb	3.89	1.00	
238 U	0.0025	ppb	67.98	1.00	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2414850.00	3.26	2473849.30	97.6	79.5 - 120	
45 Sc	2265240.50	3.27	2284758.30	99.1	79.5 - 120	
72 Ge	435288.41	3.37	440097.94	98.9	79.5 - 120	
159 Tb	3158230.50	2.03	3175870.30	99.4	79.5 - 120	
209 Bi	1777301.90	1.44	1777464.10	100.0	79.5 - 120	

ISTD Ref File : C:\ICPCHEM\1\DATA\JLC26B.B\015CALB.D\015CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000441

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR1971 Boiling Stones: MSR80 Method: 7471

KMNO4: MR1962 NH2OH-HCl: MR1957

REVIEWED
JS 3.20.18
KATAHDIN ANALYTICAL
METALS SECTION

Standards/Spiking Information:

1ppm A : MS2112

Pipet 1ppm B : MW17595

M15 LCSO = 500uL of 1ppm A to 100mL

M11 Spike(S/P) = 100uL of 1ppm A to 100mL

M15 ICV = 600uL of 1ppm B to 100 mL

M15 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: NA

Heat Source ID : B

Start Time: 0945 Temp. 93 °C

End Time: 1015 /Temp. 95 °C

Thermometer ID/Pos: AIC25 15.6

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLC19HGS1	LC19HGS1	0.6	g	0.1	L	SL	HG	AMJ	03/19/2018	
PBSLC19HGS1	LC19HGS1	0.6	g		L	SL	HG	AMJ	03/19/2018	
SL2133-001	LC19HGS1	0.80	g		L	SL	HG	AMJ	03/19/2018	A
SL2133-002	LC19HGS1	0.73	g		L	SL	HG	AMJ	03/19/2018	
SL2133-003	LC19HGS1	0.66	g		L	SL	HG	AMJ	03/19/2018	
SL2133-004	LC19HGS1	0.75	g		L	SL	HG	AMJ	03/19/2018	
SL2133-005	LC19HGS1	0.68	g		L	SL	HG	AMJ	03/19/2018	
SL2133-006	LC19HGS1	0.65	g		L	SL	HG	AMJ	03/19/2018	
SL2133-007	LC19HGS1	0.73	g		L	SL	HG	AMJ	03/19/2018	
SL2133-008	LC19HGS1	0.71	g		L	SL	HG	AMJ	03/19/2018	
SL2133-009	LC19HGS1	0.74	g		L	SL	HG	AMJ	03/19/2018	
SL2133-010	LC19HGS1	0.62	g		L	SL	HG	AMJ	03/19/2018	
SL2133-011	LC19HGS1	0.74	g		L	SL	HG	AMJ	03/19/2018	
SL2133-012	LC19HGS1	0.68	g		L	SL	HG	AMJ	03/19/2018	
SL2133-013	LC19HGS1	0.71	g		L	SL	HG	AMJ	03/19/2018	
SL2133-014	LC19HGS1	0.64	g		L	SL	HG	AMJ	03/19/2018	
SL2133-015	LC19HGS1	0.80	g		L	SL	HG	AMJ	03/19/2018	
SL2133-016	LC19HGS1	0.68	g		L	SL	HG	AMJ	03/19/2018	
SL2133-017	LC19HGS1	0.72	g		L	SL	HG	AMJ	03/19/2018	
SL2133-018	LC19HGS1	0.78	g		L	SL	HG	AMJ	03/19/2018	
SL2133-019	LC19HGS1	0.68	g		L	SL	HG	AMJ	03/19/2018	
SL2133-019P	LC19HGS1	0.68	g		L	SL	HG	AMJ	03/19/2018	
SL2133-019S	LC19HGS1	0.68	g		L	SL	HG	AMJ	03/19/2018	
SL2133-021	LC19HGS1	0.66	g		L	SL	HG	AMJ	03/19/2018	

JS 3-20-18

 Digestion performed by: AMJ On: 3/19/18 Page: LC060 Revision: 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information: **Method:** 7470

HNO3: MS1914 H2SO4: MS1934

KMNO4: MR1960 K2S2O8: MR1963 NH2OH-HCl: MR1957

REVIEWED
MD 3/20/18
KATAHDIN ANALYTICAL
METALS SECTION

Standards/Spiking Information:

1ppm A : MS2112
1ppm B : MW17595

Heat Source ID : B
Start Time: 1049 /Temp. 93 °C
End Time: 1249 /Temp. 21 °C
Thermometer ID/Pos: ALC25 11.6

Pipet	
M11	LCSW = 125uL of 1ppm A to 25mL
N14	Spike(S/P) = 25uL of 1ppm NA to 25mL
M15	ICV = 600uL of 1ppm B to 100 mL
2	S10.0 = 1000uL of 1ppm A to 100 mL

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLC19HGW2	LC19HGW2	0.025	L	0.025	L	AQ	HG	JS	03/19/2018	
PBWLC19HGW2	LC19HGW2	"	L	"	L	AQ	HG	JS	03/19/2018	
SL2133-020	LC19HGW2	"	L	"	L	AQ	HG	JS	03/19/2018	A
SL2137-002	LC19HGW2	"	L	"	L	AQ	HG	JS	03/19/2018	D

JS 3.20.18

Digestion performed by: JS On: 3.19.18

Katahdin Analytical Services 4000444

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MSR94 **HCL:** MSH87 **H2O2:** MSR95 **Filter Paper:** 10990048

Boiling Stones: MSR80

Pipet	LCS / Spike	LCS/Spiking Information:
M11	☑ ☑	CLPP-SPK-1 (ID/Vol): MS2088 / 0.1 mL
M15	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MW17611 / 1.0 mL
1	☑ ☑	CLPP-SPK-INT2 (ID/Vol): MW17612 / 1.0 mL
NA	☐ ☐	NA Spike (ID/Vol): NA / mL

LCSS: NA **Balance ID:** Bal/15

Heat Source ID : D

Start Time: 0751 **/Temp.** 90 °C

End Time: 1400 **/Temp.** 94 °C

Thermometer ID/Pos: AIC11 15.7

REVIEWED
ams 3/19/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLC19IMS1	LC19IMS1	1.0	g	0.1	L	SL	IM	JS	03/19/2018	
PBSLC19IMS1	LC19IMS1	1	g	1	L	SL	IM	JS	03/19/2018	
SL2079-001	LC19IMS1	1.90	g	1	L	SL	IM	JS	03/19/2018	E
SL2079-002	LC19IMS1	1.79	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-003	LC19IMS1	1.49	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-004	LC19IMS1	1.05	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-005	LC19IMS1	1.34	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-006	LC19IMS1	1.24	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-008	LC19IMS1	1.28	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-009	LC19IMS1	1.28	g	1	L	SL	IM	JS	03/19/2018	N
SL2079-009P	LC19IMS1	1.30	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-009S	LC19IMS1	1.30	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-010	LC19IMS1	1.20	g	1	L	SL	IM	JS	03/19/2018	E
SL2079-011	LC19IMS1	1.15	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-012	LC19IMS1	1.24	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-013	LC19IMS1	1.35	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-001	LC19IMS1	1.76	g	1	L	SL	IM	JS	03/19/2018	A
SL2133-002	LC19IMS1	1.41	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-003	LC19IMS1	1.34	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-004	LC19IMS1	1.56	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-005	LC19IMS1	1.61	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-006	LC19IMS1	1.19	g	1	L	SL	IM	JS	03/19/2018	1
SL2133-007	LC19IMS1	1.38	g	1	L	SL	IM	JS	03/19/2018	1
SL2079-007	1	1.489	g	0.1	L	1	1	1	1	AE

JS 3.2018

ams 3/19/18

QA-065-Revision 2 - 06/16/2017 **Digestion performed by:** JS **On:** 3.19.18 **Page:** LC055 **Revision:** 00

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagent Information:

Method: 3010-MS

HNO3: MSR94 **HCL:** MSR87

REVIEWED
AMJ 3/19/18
KATAHDIN ANALYTICAL
METALS SECTION

Pipet	LCS/Spiking Information:	
M11	CLPP-SPK-1 (ID/Vol):	MS2058 / 0.05 mL
M15	CLPP-SPK-INT1 (ID/Vol):	MW1701 / 0.5 mL
1	CLPP-SPK-INT2 (ID/Vol):	MW1702 / 0.5 mL
NA	NA Spike (ID/Vol):	N/A / mL

Heat Source ID : D
Start Time: 0807 **/Temp.** 94 °C
End Time: 1508 **/Temp.** 91 °C
Thermometer ID/Pos: ALC24 13:8

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSWLC19IMW2	LC19IMW2	0.05	L	0.05	L	AQ	IM	JS	03/19/2018	
PBWLC19IMW2	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	
SL2133-020	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	A
SL2138-001	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	D
SL2138-002	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	A
SL2138-003	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	D
SL2138-004	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	A
SL2138-005	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	D
SL2138-006	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	A
SL2138-007	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	D
SL2138-008	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	A
SL2138-009	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	D
SL2138-010	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	A
SL2138-011	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	D
SL2138-012	LC19IMW2		L		L	AQ	IM	JS	03/19/2018	A

AMJ 3/19/18

Digestion performed by: JS **On:** 3-19-18

Katahdin Analytical Services 4000446

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MR1972 Boiling Stones: MS680 Method: 7471

KMNO4: MR1962 NH2OH-HCl: MR1957

REVIEWED
MD 3/20/18
KATAHDIN ANALYTICAL
METALS SECTION

Standards/Spiking Information:

1ppm A : MS2112

1ppm B : MW17595

Heat Source ID : JS 3/20/18 B

Start Time: 1050 /Temp. 94 °C

End Time: 1120 /Temp. 91 °C

Thermometer ID/Pos: ALC25 14:8

Pipet	
M15	LCSO = 500uL of 1ppm A to 100mL
M11	Spike(S/P) = 100uL of 1ppm A to 100mL
M15	ICV = 600uL of 1ppm B to 100 mL
↓	S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: NA

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LC2OLC20HGS1	LC20HGS1	0.6	g	0.1	L	SL	HG	JS	03/20/2018	
LCSOLC20HGS1	LC20HGS1	↓	g	↓	L	SL	HG	JS	03/20/2018	
PBSLC20HGS1	LC20HGS1	↓	g	↓	L	SL	HG	JS	03/20/2018	
SL2133-022	LC20HGS1	0.68	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2135-001	LC20HGS1	1.08	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2135-002	LC20HGS1	0.76	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2188-001	LC20HGS1	0.67	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2188-001P	LC20HGS1	0.67	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2188-001S	LC20HGS1	0.67	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2291-001	LC20HGS1	0.78	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2291-002	LC20HGS1	0.65	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2292-001	LC20HGS1	0.73	g	↓	L	SL	HG	JS	03/20/2018	↓
SL2292-002	LC20HGS1	0.84	g	↓	L	SL	HG	JS	03/20/2018	↓

JS 3/20/18

QA-067-Revision 2 - 05/10/2017 Digestion performed by: JS On: 3.20.18 Page: LC067 Revision: 00

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet** **Method:** 3050H-MS

Reagent Information:

HNO3: MSR94 **HCL:** MSR87 **H2O2:** MSR85 **Filter Paper:** 10990048

Boiling Stones: MSA80

Pipet	LCS / Spike	LCS/Spiking Information:
M11	☑ ☑	CLPP-SPK-1 (ID/Vol): MS2088 / 0.1 mL
M15	☑ ☑	CLPP-SPK-INT1 (ID/Vol): MW17G11 / 1.0 mL
1	☑ ☐	CLPP-SPK-INT2 (ID/Vol): MW17G12 / 1.0 mL
N/A	☐ ☐	N/A Spike (ID/Vol): N/A / mL

LCSS: N/A **Balance ID:** Bal15

Heat Source ID : D

Start Time: 0721 **/Temp.** 94 °C

End Time: 1558 **/Temp.** 91 °C

Thermometer ID/Pos: ALC11 / 6.1 JS 3.19.18

REVIEWED
MD 3/20/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLC20IMS1	LC20IMS1	1.0	g	0.1	L	SL	IM	JS	03/20/2018	
PBSLC20IMS1	LC20IMS1	1	g		L	SL	IM	JS	03/20/2018	
SL2133-008	LC20IMS1	2.01	g		L	SL	IM	JS	03/20/2018	A
SL2133-009	LC20IMS1	1.82	g		L	SL	IM	JS	03/20/2018	
SL2133-010	LC20IMS1	1.83	g		L	SL	IM	JS	03/20/2018	
SL2133-011	LC20IMS1	1.68	g		L	SL	IM	JS	03/20/2018	
SL2133-012	LC20IMS1	2.01	g		L	SL	IM	JS	03/20/2018	
SL2133-013	LC20IMS1	1.55	g		L	SL	IM	JS	03/20/2018	
SL2133-014	LC20IMS1	1.38	g		L	SL	IM	JS	03/20/2018	
SL2133-015	LC20IMS1	1.43	g		L	SL	IM	JS	03/20/2018	
SL2133-016	LC20IMS1	1.38	g		L	SL	IM	JS	03/20/2018	
SL2133-017	LC20IMS1	1.22	g		L	SL	IM	JS	03/20/2018	
SL2133-018	LC20IMS1	1.35	g		L	SL	IM	JS	03/20/2018	
SL2133-019	LC20IMS1	1.60	g		L	SL	IM	JS	03/20/2018	
SL2133-019P	LC20IMS1	1.59	g		L	SL	IM	JS	03/20/2018	
SL2133-019S	LC20IMS1	1.59	g		L	SL	IM	JS	03/20/2018	
SL2133-021	LC20IMS1	1.29	g		L	SL	IM	JS	03/20/2018	
SL2133-022	LC20IMS1	1.52	g	1	L	SL	IM	JS	03/20/2018	

MD 3/20/18

Digestion performed by: JS **On:** 3/19/2018 3/20/2018

Katahdin Analytical Services 4000448

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

Aqua Regia: MK1973 Boiling Stones: MS RSO **Method:** 7471

KMNO4: MK1962 NH2OH-HCl: MK1957

Standards/Spiking Information:

1ppm A : MS2112

Pipet 1ppm B : MW17595

M15 LCSO = 500uL of 1ppm A to 100mL

M11 Spike(S/P) = 100uL of 1ppm A to 100mL

M15 ICV = 600uL of 1ppm B to 100 mL

2 S10.0 = 1000uL of 1ppm A to 100 mL

Balance ID: Bal15 LCSS: N/A

Heat Source ID : A

Start Time: 1022 /Temp. 95 °C

End Time: 1052 /Temp. 95 °C

Thermometer ID/Pos: Dig 81 15:6

REVIEWED
MD 3/22/18
KATAHDIN ANALYTICAL
METALS SECTION

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle
LCSOLC21HGS1	LC21HGS1	0.6	g	0.1	L	SL	HG	JS	03/21/2018	
PBSLC21HGS1	LC21HGS1	1	g		L	SL	HG	JS	03/21/2018	
SL2004-007	LC21HGS1	0.80	g		L	SL	HG	JS	03/21/2018	1
SL2004-007P	LC21HGS1	0.80	g		L	SL	HG	JS	03/21/2018	
SL2004-007S	LC21HGS1	0.81	g		L	SL	HG	JS	03/21/2018	
SL2005-005	LC21HGS1	0.64	g		L	SL	HG	JS	03/21/2018	
SL2006-005	LC21HGS1	0.82	g		L	SL	HG	JS	03/21/2018	
SL2006-006	LC21HGS1	0.78	g		L	SL	HG	JS	03/21/2018	
SL2133-019RP	LC21HGS1	0.69	g		L	SL	HG	JS	03/21/2018	
SL2133-019RS	LC21HGS1	0.68	g		L	SL	HG	JS	03/21/2018	
SL2302-001	LC21HGS1	0.81	g		L	SL	HG	JS	03/21/2018	
SL2310-001	LC21HGS1	0.79	g		L	SL	HG	JS	03/21/2018	

MD 3/22/18

QA-067-Revision 2 - 05/10/2017 Digestion performed by: JS On: 3.21.18 **Page:** LC071 **Revision:** 00

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Quality Control Report

Blank Sample Summary Report

Chromium, Hexavalent

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG225318	SW846 7196A	22-MAR-18	21-MAR-18	U 0.29 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29
MBLANK	WG225319	SW846 7196A	22-MAR-18	21-MAR-18	U 0.29 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29
MBLANK	WG225555	SW846 7196A	27-MAR-18	26-MAR-18	J 0.26 mg/Kgdrywt	0.48 mg/Kgdrywt	0.29

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG224928	SW3540C	19-MAR-18	16-MAR-18	100 %	1 %	N/A
MBLANK	WG224935	SW3540C	19-MAR-18	16-MAR-18	100 %	1 %	N/A

Quality Control Report

Laboratory Control Sample Summary Report

Chromium, Hexavalent

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG225318-2	LCS	WG225318	22-MAR-18	21-MAR-18	mg/Kgdrywt	40	38.	94	80-120	
WG225319-2	LCS	WG225319	22-MAR-18	21-MAR-18	mg/Kgdrywt	40	36.	91	80-120	
WG225555-2	LCS	WG225555	27-MAR-18	26-MAR-18	mg/Kgdrywt	40	38.	95	80-120	

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG224928-2	LCS	WG224928	19-MAR-18	16-MAR-18	%	90	90.	100	90-110	
WG224935-2	LCS	WG224935	19-MAR-18	16-MAR-18	%	90	90.	100	90-110	

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG224928-4	SL2133-19	WG224928	19-MAR-18	%	78.	79.	0	20
WG224928-3	SL2133-18	WG224928	19-MAR-18	%	77.	80.	3	20

Quality Control Report

Matrix Spike Sample Summary Report

Chromium, Hexavalent

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG225319-4	MS	SL2133-19	WG225319	22-MAR-18	mg/Kgdrywt	1210.69	J 0.41	1200	99	75 - 125
WG225319-3	MS	SL2133-19	WG225319	22-MAR-18	mg/Kgdrywt	52.91	J 0.41	36.	68*	75 - 125

Sample Data Section

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-1
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB01-11	SL	15-MAR-18 11:45:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:32:24	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000009

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-2
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB01-4	SL	15-MAR-18 11:35:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.38 mg/Kgdrywt	0.63	0.19	0.38	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	80. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:32:49	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000010

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-3
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB01-8	SL	15-MAR-18 11:40:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:32:57	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000011

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-4
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB02-4	SL	15-MAR-18 12:25:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.35 mg/Kgdrywt	0.58	0.17	0.35	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	81. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:03	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000012

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-5
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB02-8	SL	15-MAR-18 12:30:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	74. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:11	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000013

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-6
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB03-4	SL	15-MAR-18 13:10:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.19 mg/Kgdrywt	0.64	0.19	0.39	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:20	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000014

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-7
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB03-8	SL	15-MAR-18 13:15:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:27	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000015

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-8
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB04-4	SL	15-MAR-18 10:35:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.40 mg/Kgdrywt	0.59	0.18	0.35	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	79. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:38	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000016

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-9
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB04-8	SL	15-MAR-18 10:40:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:47	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000017

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-10
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB05-4	SL	15-MAR-18 09:55:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.42 mg/Kgdrywt	0.63	0.19	0.38	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:33:55	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000018

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-11
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB05-8	SL	15-MAR-18 10:05:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	76. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:03	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000019

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-12
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB06-4	SL	15-MAR-18 12:05:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	79. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:12	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000020

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-13
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SB06-8	SL	15-MAR-18 12:10:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	75. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:20	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000021

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-14
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS01	SL	15-MAR-18 10:45:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.34 mg/Kgdrywt	0.56	0.17	0.34	SW846 7196A	WG225555	27-MAR-18 16:36:00	SW846 3060A	26-MAR-18	
Total Solids	85. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:28	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000022

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-15
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS02	SL	15-MAR-18 12:40:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.36 mg/Kgdrywt	0.60	0.18	0.36	SW846 7196A	WG225318	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	80. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:37	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000023

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-16
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS03	SL	15-MAR-18 12:45:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.57 mg/Kgdrywt	0.61	0.18	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:46	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000024

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-17
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS04	SL	15-MAR-18 10:25:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.37 mg/Kgdrywt	0.62	0.19	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:34:53	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000025

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-18
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS05	SL	15-MAR-18 09:50:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	77. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:38:02	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000026

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-19
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS06	SL	15-MAR-18 11:10:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.41 mg/Kgdrywt	0.61	0.18	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	78. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:37:49	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000027

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-21
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS102	SL	15-MAR-18 12:00:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	J0.33 mg/Kgdrywt	0.59	0.18	0.36	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	81. %	1		N/A	SW3540C	WG224928	19-MAR-18 09:37:41	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000028

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: David Nelson
ATI, Inc.
9220 Rumsey Road
Columbia,MD 21045

Lab Sample ID: SL2133-22
Report Date: 02-APR-18
Client PO: PN:16-027
Project: Cornhusker Army Ammu
SDG: SL2133

Sample Description	Matrix	Date Sampled	Date Received
CHAAP-20B-SS104	SL	15-MAR-18 12:00:00	16-MAR-18

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Chromium, Hexavalent	U0.37 mg/Kgdrywt	0.62	0.19	0.37	SW846 7196A	WG225319	22-MAR-18 15:28:00	SW846 3060A	21-MAR-18	
Total Solids	79. %	1		N/A	SW3540C	WG224935	19-MAR-18 09:44:36	SW3540C	16-MAR-18	

Katahdin Analytical Services 5000029

Raw Data Section

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 01:40 pm
Batch: WG225318

Parameter: Chromium, Hexavalent

Prep Date: 21-MAR-18

Date Analyzed: 22-MAR-18

Prep Method: SW846 3060A

Analyst Initials: AP

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL2079-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.11	U0.36 mg/Kgdrywt	81.	.4	0.18	0.60		
SL2079-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	2.64	2.6 mg/Kgdrywt	81.	.4	0.17	0.58		
SL2079-11	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.19	U0.36 mg/Kgdrywt	78.	.4	0.18	0.60		
SL2079-12	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-1	U0.36 mg/Kgdrywt	78.	.4	0.18	0.60		
SL2079-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.32	J0.32 mg/Kgdrywt	86.	.4	0.17	0.58		
SL2079-3	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.17	U0.17 mg/Kgdrywt	84.	.4	0.17	0.58		
SL2079-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.04	U0.36 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2079-5	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.1	U0.33 mg/Kgdrywt	83.	.4	0.17	0.56		
SL2079-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.36 mg/Kgdrywt	80.	.4	0.18	0.61		
SL2079-7	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.42	U0.36 mg/Kgdrywt	79.	.4	0.18	0.60		
SL2079-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.34 mg/Kgdrywt	83.	.4	0.17	0.56		
SL2079-9	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-1	U0.38 mg/Kgdrywt	75.	.4	0.19	0.64		
SL2133-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.42	J0.42 mg/Kgdrywt	78.	.4	0.19	0.63		
SL2133-15	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-1.01	U0.36 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2133-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.38 mg/Kgdrywt	80.	.4	0.19	0.63		
SL2133-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.03	U0.35 mg/Kgdrywt	81.	.4	0.17	0.58		
SL2133-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	U0.19 mg/Kgdrywt	77.	.4	0.19	0.64		
SL2133-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.4	J0.40 mg/Kgdrywt	79.	.4	0.18	0.59		
WG225318-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	-.09	U0.29 mg/Kgdrywt	NA	.4	0.14	0.48		
WG225318-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	37.59	38. mg/Kgdrywt	NA	.4	0.14	0.48		94
WG225318-3	MS	SW846 7196A	20.000mL	25.000mL	1.2	37.35	37. mg/Kgdrywt	NA	.4	0.20	0.66		68
WG225318-4	MS	SW846 7196A	1.0000mL	25.000mL	25	1025.44	1000 mg/Kgdrywt	NA	.4	4.1	14.		71

Comments:

SL2079-9	MS/MSD
WG225318-1	SL2133-2
WG225318-2	SL2133-2
WG225318-3	SL2079-9
WG225318-4	SL2079-9

Entered by: for AP Date: 04/02/18 Accepted by: Date: 04/02/18

Katahdin Analytical Services 5000031

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 01:43 pm
Batch: WG225319

Parameter: Chromium, Hexavalent

Prep Date: 21-MAR-18

Date Analyzed: 22-MAR-18

Prep Method: SW846 3060A

Analyst Initials: AP

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL2133-16	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.57	J0.57 mg/Kgdrywt	77.	.4	0.18	0.61		
SL2133-17	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.2	U0.37 mg/Kgdrywt	78.	.4	0.19	0.62		
SL2133-19	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.41	J0.41 mg/Kgdrywt	78.	.4	0.18	0.61		
SL2133-21	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.33	J0.33 mg/Kgdrywt	81.	.4	0.18	0.59		
SL2133-22	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.11	U0.37 mg/Kgdrywt	79.	.4	0.19	0.62		
WG225319-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	-.09	U0.29 mg/Kgdrywt	NA	.4	0.14	0.48		
WG225319-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	36.52	36. mg/Kgdrywt	NA	.4	0.14	0.48		91
WG225319-3	MS	SW846 7196A	20.000mL	25.000mL	1.2	36.58	36. mg/Kgdrywt	NA	.4	0.19	0.63		68
WG225319-4	MS	SW846 7196A	1.0000mL	25.000mL	25	1194.85	1200 mg/Kgdrywt	NA	.4	4.0	13.		99

Comments:

SL2133-19	MS/MSD
WG225319-1	SL2133-16
WG225319-2	SL2133-16
WG225319-3	SL2133-19
WG225319-4	SL2133-19

Entered by: for AP Date: 04/02/18 Accepted by: Date: 04/02/18

Katahdin Analytical Services 5000032

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

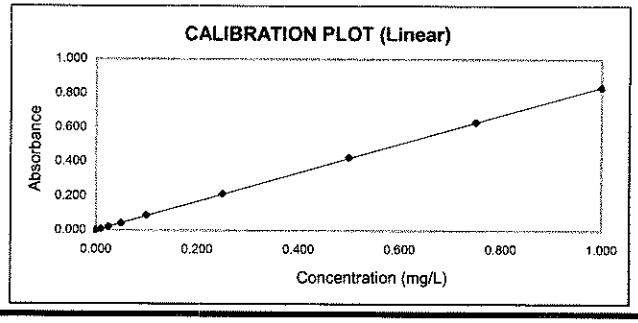
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



Katahdin Analytical Services 5000033

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

SAMPLE ANALYSIS		Spreadsheet File Name:	3/22/18.xls
CCV Source Standard ID:	W16186	Sample Anal. Date:	3/22/2018
CCV Source Std. Conc. (mg/L):	25	Sample Analyst:	AP

	ANALYSIS INFORMATION								DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.426		0.426	0.504	0.504							100.8%
CCV	25.0	25.0	1.000	0.423		0.423	0.501	0.501							100.1%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.001		0.001	-0.002	-0.002	2.5000	0.100	100.000%		-0.09		
LCS A	20.0	25.0	1.250	0.634		0.634	0.752	0.940	2.5000	0.100	100.000%	0.100	37.59	40.00	94.0%
SL2079-1	20.0	25.0	1.250	0.004		0.004	0.002	0.002	2.4493	0.100	81.061%		0.11		
SL2079-2	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.4200	0.100	86.094%		0.32		
SL2079-3	20.0	25.0	1.250	0.005		0.005	0.003	0.004	2.4806	0.100	83.644%		0.17		
SL2079-4	20.0	25.0	1.250	0.002		0.002	-0.001	-0.001	2.4887	0.100	79.677%		-0.04		
SL2079-5	20.0	25.0	1.250	0.004		0.004	0.002	0.002	2.5947	0.100	83.030%		0.10		
SL2079-6	20.0	25.0	1.250	0.003		0.003	0.001	0.001	2.4717	0.100	79.823%		0.03		
SL2079-7	20.0	25.0	1.250	0.170	0.173	-0.003	-0.007	-0.008	2.5181	0.100	78.799%		-0.42		
SL2079-8	20.0	25.0	1.250	0.400	0.397	0.003	0.001	0.001	2.5669	0.100	82.852%		0.03		
CCV	25.0	25.0	1.000	0.423		0.423	0.501	0.501							100.1%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2079-9	20.0	25.0	1.250	0.280	0.290	-0.010	-0.015	-0.019	2.5133	0.100	74.610%		-1.00		
SL2079-9 Post-Dig MS	20.0	25.0	1.250	0.623	0.290	0.333	0.393								78.7%
SL2079-9 Serial Dilution	4.0	25.0	6.250	0.060	0.062	-0.002	-0.005	-0.034	2.5133	0.100	74.610%		-1.81		
SL2079-9 Insoluble MS	1.0	25.0	25.000	0.637		0.637	0.755	18.886	2.4685	0.100	74.610%	2.655	1025.44	1441.37	71.1%
SL2079-9 Soluble MS	20.0	25.0	1.250	0.674	0.214	0.460	0.545	0.681	2.4430	0.100	74.610%	0.100	37.35	54.86	68.0%
SL2079-10	20.0	25.0	1.250	0.373	0.334	0.039	0.043	0.054	2.5301	0.100	81.336%		2.64		
SL2079-11	20.0	25.0	1.250	0.189	0.189	0.000	-0.003	-0.004	2.5542	0.100	78.549%		-0.19		
SL2079-12	20.0	25.0	1.250	0.186	0.197	-0.011	-0.016	-0.020	2.5784	0.100	77.967%		-1.00		
SL2133-2	20.0	25.0	1.250	0.003		0.003	0.001	0.001	2.4022	0.100	79.502%		0.03		
SL2133-4	20.0	25.0	1.250	0.003		0.003	0.001	0.001	2.5575	0.100	80.709%		0.03		
CCV	25.0	25.0	1.000	0.418		0.418	0.495	0.495							98.9%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-6	20.0	25.0	1.250	0.005		0.005	0.003	0.004	2.4223	0.100	76.982%		0.19		
SL2133-8	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.5693	0.100	79.407%		0.40		
SL2133-10	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.4626	0.100	77.523%		0.42		
SL2133-15	20.0	25.0	1.250	0.152	0.163	-0.011	-0.016	-0.020	2.4777	0.100	80.517%		-1.01		
SL2133-16	20.0	25.0	1.250	0.143	0.133	0.010	0.009	0.011	2.5307	0.100	77.228%		0.57		
SL2133-17	20.0	25.0	1.250	0.151	0.151	0.000	-0.003	-0.004	2.4659	0.100	78.289%		-0.20		
SL2133-19	20.0	25.0	1.250	0.142	0.134	0.008	0.006	0.008	2.5021	0.100	78.532%		0.41		
SL2133-19 Post-Dig MS	20.0	25.0	1.250	0.469	0.134	0.335	0.396								79.2%
SL2133-19 Serial Dilution	4.0	25.0	6.250	0.032	0.032	0.000	-0.003	-0.019	2.5021	0.100	78.532%		-0.97		
SL2133-19 Insoluble MS	1.0	25.0	25.000	0.760		0.760	0.902	22.547	2.4029	0.100	78.532%	2.285	1194.85	1210.69	98.7%
CCV	25.0	25.0	1.000	0.421		0.421	0.498	0.498							99.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-19 Soluble MS	20.0	25.0	1.250	0.612	0.145	0.467	0.553	0.691	2.4065	0.100	78.532%	0.100	36.58	52.91	68.3%
SL2133-21	20.0	25.0	1.250	0.092	0.085	0.007	0.005	0.007	2.4801	0.100	81.370%		0.33		
SL2133-22	20.0	25.0	1.250	0.133	0.129	0.004	0.002	0.002	2.4317	0.100	79.049%		0.11		
METHOD BLANK B	20.0	25.0	1.250	0.001		0.001	-0.002	-0.002	2.5000	0.100	100.000%		-0.09		
LCS B	20.0	25.0	1.250	0.616		0.616	0.730	0.913	2.5000	0.100	100.000%	0.100	36.52	40.00	91.3%
CCV	25.0	25.0	1.000	0.419		0.419	0.496	0.496							99.2%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000034

KATAHDIN ANALYTICAL SERVICES

WG22 5318 R465593
WG22 5319 R465594

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): 25 ug/mL	**CCV ID:** W16186 25 ug/mL
LCS Stock ID: SW24101 1000 ~~25~~ ug/mL	**ICV ID:** W16187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** W14990 WS
Diphenylcarbazide Solution ID: W16304	**10% H2SO4 ID:** W16317
Alkaline Digestion Reagent ID: W16195/W16301	**Alkaline Digestion Reagent pH:** 13.43
SW 3060A Leachate Generation Date: 3/21/18	**Filtration End Time:** 1345

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1416		✓	✓	25	25		0.426
CCV								0.423
CCB								0.000
Blank 1					20			0.001
LCS 1								0.634
SL2079-1								0.004
-2								0.007
-3								0.005
-4								0.002
-5								0.004
-6								0.003
-7							0.173	0.170
-8							0.397	0.400
CCV					25			0.423
CCB					1			0.000
SL2079-9					20		0.290	0.280
-9 P.D.S					1			0.623
-9 S.D					4		0.062	0.060
-9 InsolMS					1.0			0.637
-9 SolMS					20		0.214	0.674
-10	1438				1		0.33~~4~~ AP	0.373

Notes:

Analyst: ZF / AP	**Date:** 3/22/18
Checked By:	**Date:** 03/29/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID — **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:			
Cal Std. Source ID (K2Cr2O7):	P4 ug/mL	**CCV ID:**	P4 ug/mL
LCS Stock ID:	ug/mL	**ICV ID:**	ug/mL
Reagents:		**Phosphate Buffer ID:**	
Diphenylcarbazide Solution ID:		**10% H2SO4 ID:**	
Alkaline Digestion Reagent ID:		**Alkaline Digestion Reagent pH:**	
SW 3060A Leachate Generation Date:		**Filtration End Time:**	

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL2079-11	1439		✓	✓	20	25	0.189	0.189
1 -12							0.197	0.186
SL2133-2								0.003
1 -4					1			0.003
CCV					25			0.418
CCB					1			0.000
SL2133-6					20			0.005
-8								0.008
-10								0.008
-15							0.163	0.152
-16							0.133	0.143
-17							0.151	0.151
-19							0.134	0.142
-19 P.D.S					1			0.469
-19 S.D.					4		0.032	0.032
2 -19 Insolms					1.0			0.760
CCV					25			0.421
CCB					1			0.000
SL2133-19 Solms					20		0.145	0.612
-21							0.085	0.092
AP ~~B~~ 1 -22	15:21		1	1	1	1	0.129	0.133

Notes:

Analyst: ZF/AP	**Date:** 3/22/18
Checked By:	**Date:** 03/29/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): P4 **ug/mL**	**CCV ID:** P4 **ug/mL**
LCS Stock ID: **ug/mL**	**ICV ID:** **ug/mL**
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
Blank 2	15:22		✓	✓	20	25		0.001
LCS 2	"		"	"	"	"		0.616
CCV	"		"	"	25	"		0.419
0.000 / CCB	15:24		"	"	"	"		0.000
0.010	"		✓	✓	25	"		0.009
0.025	"		"	"	"	"		0.023
0.050	"		"	"	"	"		0.044
0.10	"		"	"	"	"		0.068
0.250	"		"	"	"	"		0.215
0.500	"		"	"	"	"		0.427
0.750	"		"	"	"	"		0.633
1.000	1528		"	"	"	"		0.839

Notes:

Analyst: ZF / AP	**Date:** 3/22/18
Checked By:	**Date:** 03/29/18

W7,W8

Katahdin Analytical Services, Inc. — **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike — **LCS/Spiking Information:**

- ☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
- ☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
- ☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
- ☐ ☐ _____ Spike (ID/Vol):_____/_____mL
- ☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID: 1124016031

Hot Plate/Block ID : 0

Start Time/Temp.: 1215 / 90.0 °C

End Time/Temp. : 1315 / 92.2 °C

Thermometer ID/Pos.:_____/_____

Filter Paper:_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC21CRS1	2.5	g	0.1	L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
LCS	LC21CRS1	1	g		L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
SL2079-1	LC21CRS1	2.4493	g		L	SL	CR	AP	03/21/2018						
SL2079-10	LC21CRS1	2.5301	g		L	SL	CR	AP	03/21/2018						
SL2079-11	LC21CRS1	2.5542	g		L	SL	CR	AP	03/21/2018						
SL2079-12	LC21CRS1	2.5784	g		L	SL	CR	AP	03/21/2018						
SL2079-13	LC21CRS1	2.5734	g	N/A *Prediget	SL	CR	AP	03/21/2018							
SL2079-2	LC21CRS1	2.4200	g	0.1	L	SL	CR	AP	03/21/2018						
SL2079-3	LC21CRS1	2.4806	g		L	SL	CR	AP	03/21/2018						
SL2079-4	LC21CRS1	2.4887	g		L	SL	CR	AP	03/21/2018						
SL2079-5	LC21CRS1	2.5947	g		L	SL	CR	AP	03/21/2018						
SL2079-6	LC21CRS1	2.4717	g		L	SL	CR	AP	03/21/2018						
SL2079-7	LC21CRS1	2.5181	g		L	SL	CR	AP	03/21/2018						
SL2079-8	LC21CRS1	2.5669	g		L	SL	CR	AP	03/21/2018						
SL2079-9	LC21CRS1	2.5133	g		L	SL	CR	AP	03/21/2018						
SL2079-9 INSOL MS	LC21CRS1	2.4685	g		L	SL	CR	AP	03/21/2018						
SL2079-9 SOL MS	LC21CRS1	2.4430	g		L	SL	CR	AP	03/21/2018						
SL2133-10	LC21CRS1	2.4626	g		L	SL	CR	AP	03/21/2018						
SL2133-14	LC21CRS1	2.5022	g	*	L	SL	CR	AP	03/21/2018						
SL2133-15	LC21CRS1	2.4777	g		L	SL	CR	AP	03/21/2018						
SL2133-2	LC21CRS1	2.4622	g		L	SL	CR	AP	03/21/2018						
SL2133-4	LC21CRS1	2.5375	g		L	SL	CR	AP	03/21/2018						
SL2133-6	LC21CRS1	2.4223	g		L	SL	CR	AP	03/21/2018						
SL2133-8	LC21CRS1	2.5693	g		L	SL	CR	AP	03/21/2018						

Insoluble MS spiked w/ 0.0165g $PbCrO_4$ (SLC3761)

LCS & Soluble MS spiked w/ 0.10mL 1000 mg/L Cr6+ Std (SLC 4101)

* Prediget

QA-065-Revision 1 - 09/23/2010

Digestion performed by: ZF/AP On: 3/21/18

Reviewed 03/09/18

Page: LC075 Revision: 00

Katahdin Analytical Services 5000038

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
☐ ☐ _____ Spike (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID: 1124016031

Hot Plate/Block ID : O
Start Time/Temp.: 1215 / 90.0 °C
End Time/Temp. : 1315 / 92.2 °C
Thermometer ID/Pos.:_____/_____

Filter Paper:_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC21CRS2	2.5	g	0.10	L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
LCS	LC21CRS2	1	g		L	SL	CR	AP	03/21/2018	N/A	N/A	N/A	N/A		
SL2133-16	LC21CRS2	2.5307	g		L	SL	CR	AP	03/21/2018						
SL2133-17	LC21CRS2	2.4659	g		L	SL	CR	AP	03/21/2018						
SL2133-19	LC21CRS2	2.5021	g		L	SL	CR	AP	03/21/2018						
SL2133-19 INSOL MS	LC21CRS2	2.4029	g		L	SL	CR	AP	03/21/2018						
SL2133-19 SOL MS	LC21CRS2	2.4065	g		L	SL	CR	AP	03/21/2018						
SL2133-21	LC21CRS2	2.4801	g		L	SL	CR	AP	03/21/2018						
SL2133-22	LC21CRS2	2.4317	g		L	SL	CR	AP	03/21/2018						

Insoluble MS spiked w/ 0.0142g $PbCrO_4$ (SLC 3761)
LCS & Soluble MS spiked w/ 0.10 mL 1000 mg/L Cr^{6+} Std (SLC 4101)

Digestion performed by: ZF/AP On: 3/21/18
Reviewed 03/29/18

Katahdin Analytical Services 5000039

Samplenum	Measuredate	Parameter	Result	Moisture
SL2133-2	19-MAR-18	TOTAL SOLIDS	79.502%	20.498%
SL2133-1	19-MAR-18	TOTAL SOLIDS	76.337%	23.663%
SL2133-3	19-MAR-18	TOTAL SOLIDS	77.984%	22.016%
SL2133-4	19-MAR-18	TOTAL SOLIDS	80.709%	19.291%
SL2133-5	19-MAR-18	TOTAL SOLIDS	74.579%	25.421%
SL2133-6	19-MAR-18	TOTAL SOLIDS	76.982%	23.018%
SL2133-7	19-MAR-18	TOTAL SOLIDS	76.124%	23.876%
SL2133-8	19-MAR-18	TOTAL SOLIDS	79.407%	20.593%
SL2133-9	19-MAR-18	TOTAL SOLIDS	76.662%	23.338%
SL2133-10	19-MAR-18	TOTAL SOLIDS	77.523%	22.477%
SL2133-11	19-MAR-18	TOTAL SOLIDS	76.236%	23.764%
SL2133-12	19-MAR-18	TOTAL SOLIDS	79.146%	20.854%
SL2133-13	19-MAR-18	TOTAL SOLIDS	75.237%	24.763%
SL2133-14	19-MAR-18	TOTAL SOLIDS	84.659%	15.341%
SL2133-15	19-MAR-18	TOTAL SOLIDS	80.517%	19.483%
SL2133-16	19-MAR-18	TOTAL SOLIDS	77.228%	22.772%
SL2133-17	19-MAR-18	TOTAL SOLIDS	78.289%	21.711%
SL2133-18	19-MAR-18	TOTAL SOLIDS	77.045%	22.955%
SL2133-19	19-MAR-18	TOTAL SOLIDS	78.532%	21.468%
SL2133-21	19-MAR-18	TOTAL SOLIDS	81.37%	18.63%
SL2133-22	19-MAR-18	TOTAL SOLIDS	79.049%	20.951%

Samplenum	Measuredate	Parameter	Result	Moisture
SL2079-1	23-MAR-18	TOTAL SOLIDS	81.061%	18.939%
SL2079-2	23-MAR-18	TOTAL SOLIDS	86.094%	13.906%
SL2079-3	23-MAR-18	TOTAL SOLIDS	83.644%	16.356%
SL2079-4	23-MAR-18	TOTAL SOLIDS	79.677%	20.323%
SL2079-5	23-MAR-18	TOTAL SOLIDS	83.03%	16.97%
SL2079-6	23-MAR-18	TOTAL SOLIDS	79.823%	20.177%
SL2079-7	23-MAR-18	TOTAL SOLIDS	78.799%	21.201%
SL2079-8	23-MAR-18	TOTAL SOLIDS	82.852%	17.148%
SL2079-9	23-MAR-18	TOTAL SOLIDS	74.61%	25.39%
SL2079-10	23-MAR-18	TOTAL SOLIDS	81.336%	18.664%
SL2079-11	23-MAR-18	TOTAL SOLIDS	78.549%	21.451%
SL2079-12	23-MAR-18	TOTAL SOLIDS	77.967%	22.033%
SL2079-13	23-MAR-18	TOTAL SOLIDS	82.909%	17.091%

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

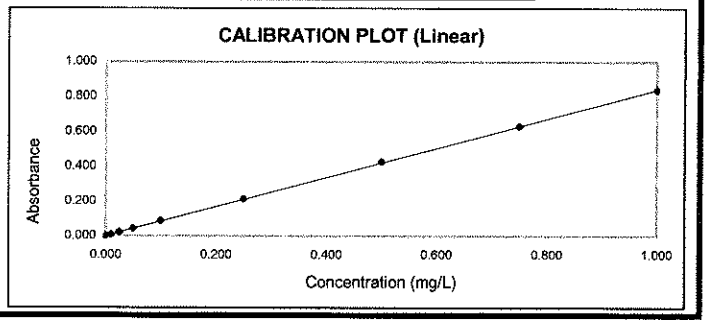
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



Katahdin Analytical Services 5000042

SAMPLE ANALYSIS		Spreadsheet File Name:	3/27/18.xls
CCV Source Standard ID:	W16186	Sample Anal. Date:	3/27/2018
CCV Source Std. Conc. (mg/L):	25	Sample Analyst:	AP

	ANALYSIS INFORMATION								DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5000	0.100	100.000%		0.26		
LCS A	20.0	25.0	1.250	0.641		0.641	0.760	0.950	2.5000	0.100	100.000%	0.100	38.01	40.00	95.0%
SL2079-9	20.0	25.0	1.250	0.163	0.165	-0.002	-0.005	-0.007	2.5958	0.100	74.610%		-0.35		
SL2079-9 Post-Dig MS	20.0	25.0	1.250	0.549		0.549	0.651								130.1%
SL2079-9 Serial Dilution	4.0	25.0	6.250	0.033	0.034	-0.001	-0.004	-0.027	2.5958	0.100	74.610%		-1.37		
SL2079-9 Insoluble MS	1.0	25.0	25.000	0.823		0.823	0.977	24.423	2.4558	0.100	74.610%	2.976	1332.92	1624.45	82.1%
SL2079-9 Soluble MS	20.0	25.0	1.250	0.758	0.355	0.403	0.477	0.596	2.4679	0.100	74.610%	0.100	32.37	54.31	59.6%
SL2079-13	20.0	25.0	1.250	0.274	0.266	0.008	0.006	0.008	2.4608	0.100	82.909%		0.40		
SL2133-14	20.0	25.0	1.250	0.106	0.102	0.004	0.002	0.002	2.5118	0.100	84.659%		0.10		
SL2133-19	20.0	25.0	1.250	0.169	0.169	0.000	-0.003	-0.004	2.4941	0.100	78.532%		-0.19		
CCV	25.0	25.0	1.000	0.431		0.431	0.510	0.510							102.0%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-19 Post-Dig MS	20.0	25.0	1.250	0.499		0.499	0.591								118.2%
SL2133-19 Serial Dilution	4.0	25.0	6.250	0.036	0.032	0.004	0.002	0.011	2.4941	0.100	78.532%		0.55		
SL2133-19 Insoluble MS	1.0	25.0	25.000	0.569		0.569	0.674	16.862	2.4058	0.100	78.532%	2.011	892.47	1064.46	83.8%
SL2133-19 Soluble MS	20.0	25.0	1.250	0.440	0.073	0.367	0.434	0.542	2.4197	0.100	78.532%	0.100	28.55	52.62	54.2%
SL2329-1	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.5025	0.100	80.366%		0.70		
SL2329-2	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.4208	0.100	79.673%		0.42		
SL2329-3	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.4263	0.100	85.387%		0.53		
SL2329-4	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4279	0.100	79.142%		0.50		
SL2329-5	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.4771	0.100	80.067%		0.71		
SL2329-6	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.5742	0.100	79.025%		0.54		
CCV	25.0	25.0	1.000	0.430		0.430	0.509	0.509							101.8%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-7	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.4455	0.100	82.001%		0.33		
SL2329-8	20.0	25.0	1.250	0.081	0.055	0.026	0.028	0.035	2.5446	0.100	79.381%		1.73		
SL2329-8 Post-Dig MS	20.0	25.0	1.250	0.496		0.496	0.588								117.5%
SL2329-8 Serial Dilution	4.0	25.0	6.250	0.038	0.038	0.000	-0.003	-0.019	2.5446	0.100	79.381%		-0.94		
SL2329-8 Insoluble MS	1.0	25.0	25.000	0.470		0.470	0.557	13.915	2.4295	0.100	79.381%	1.915	721.51	992.75	72.5%
SL2329-8 Soluble MS	20.0	25.0	1.250	0.402	0.064	0.338	0.399	0.499	2.4292	0.100	79.381%	0.100	25.89	51.86	46.6%
SL2329-9	20.0	25.0	1.250	0.081	0.072	0.009	0.008	0.010	2.4973	0.100	78.204%		0.49		
SL2329-10	20.0	25.0	1.250	0.079	0.074	0.005	0.003	0.004	2.5657	0.100	74.087%		0.19		
SL2329-11	20.0	25.0	1.250	0.051	0.046	0.005	0.003	0.004	2.5940	0.100	74.631%		0.19		
SL2329-12	20.0	25.0	1.250	0.161	0.167	-0.006	-0.010	-0.013	2.5737	0.100	76.688%		-0.65		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-13	20.0	25.0	1.250	0.085	0.074	0.011	0.010	0.013	2.5447	0.100	77.242%		0.64		
SL2329-14	20.0	25.0	1.250	0.074	0.069	0.005	0.003	0.004	2.4354	0.100	73.421%		0.20		
SL2329-17	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5857	0.100	80.322%		0.32		
SL2329-18	20.0	25.0	1.250	0.070	0.065	0.005	0.003	0.004	2.4370	0.100	76.853%		0.19		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000043

WG225555 R466595

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): ug/mL	CCV ID: ug/mL
LCS Stock ID: ug/mL	ICV ID: ug/mL
Reagents:	Phosphate Buffer ID:
Diphenylcarbazide Solution ID:	10% H2SO4 ID:
Alkaline Digestion Reagent ID:	Alkaline Digestion Reagent pH: 13.07
SW 3060A Leachate Generation Date: 3/26/18	Filtration End Time: 1745

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1530		✓	✓	25	25		0.434
~~ICB~~ CCV								0.434
~~Blo~~ CCB								0.000
Blank					20	25		0.007
LCS								0.641
SL2079-9							0.165	0.163
-9 P.D.S								0.549
-9 S.D.					4.00		0.034	0.033
-9 Insol MS					1.00			0.823
-9 Sol MS					20		0.355	0.758
-13					20		0.266	0.274
SL2133-14							0.102	0.106
-19							0.169	0.169
CCV					25			0.431
CCB								0.000
SL2133-19 P.D.S					20			0.499
-19 S.D					4.00		0.032	0.036
-19 Insol MS					1.00		~~0.055~~	0.569
-19 Sol MS					20	* 0.073	~~0.190~~	~~0.580~~ * 0.440
SL2329-1								~~0.12~~ 0.012
-2								0.008

HP 3/27/18

HP 3/27/18

Notes:

Analyst: HP	Date: 3/27/18
Checked By: [signature]	Date: 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): P7 ug/mL	**CCV ID:** P7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL2329-3			✓	✓	20	25		0.010
-4								0.009
-5								0.012
-6					1			0.010
ccv					25			0.430
ccb					1			0.000
SL2329-7					20		(0.055)	0.007
-8					1		* ~~0.166~~	~~0.157~~ * 0.08
-8 P.D.S					1			0.496
-8 S.D					4.00		0.038	0.038
-8 Insol/MS					1.00			0.470
-8 Sol/MS					20	0.05 *	~~0.194~~	~~0.542~~ 0.402
-9							0.072	0.081
-10						0.07 *	~~0.160~~	~~0.284~~ * 0.079
-11							0.046	0.051
-12					1		0.167	0.161
ccv					25			0.425
ccb					1			0.000
SL2329-13					20	* 0.074	~~0.236~~	~~0.187~~ * 0.08
-14					1	* 0.069	~~0.206~~	0.245 0.07
-15 17			1	1	1	1		0.907 *

3/27/18

Notes: * sample centrifuged & reanalyzed on spec.

Analyst: AT	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): p7 ug/mL	**CCV ID:** p7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL232418			✓	✓	20	25	~~0.151~~ +0.065	~~0.213~~ 0.07
CCV					25			0.425
CCB	1636							0.000

AP 3/28/18

Notes:

Analyst: AP	**Date:** 3/27/18
Checked By: [signature]	**Date:** 04/02/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
☐ ☐ _____ Spike (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS:_____ Balance ID:_____

Hot Plate/Block ID:_____
Start Time/Temp.: 1220 / 90 °C
End Time/Temp.: 1320 / 93 °C
Thermometer ID/Pos.:_____/_____

Filter Paper:_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC26CRS1	2.5	g	0.10	L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
LCS	LC26CRS1	2.5	g		L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
SL2079-13	LC26CRS1	2.4608	g		L	SL	CR	AP	03/26/2018						
* SL2079-9	LC26CRS1	2.5958	g		L	SL	CR	AP	03/26/2018						
0.0185g SL2079-9 INSOL MS	LC26CRS1	2.4558	g		L	SL	CR	AP	03/26/2018						
SL2079-9 SOL MS	LC26CRS1	2.4679	g		L	SL	CR	AP	03/26/2018						
SL2133-14	LC26CRS1	2.5118	g		L	SL	CR	AP	03/26/2018						
* SL2133-19	LC26CRS1	2.4941	g		L	SL	CR	AP	03/26/2018						
0.0125g SL2133-19 INSOL MS	LC26CRS1	2.4058	g		L	SL	CR	AP	03/26/2018						
SL2133-19 SOL MS	LC26CRS1	2.4197	g		L	SL	CR	AP	03/26/2018						
SL2329-1	LC26CRS1	2.5025	g		L	SL	CR	AP	03/26/2018						
SL2329-10	LC26CRS1	~~2.4107~~ 2.5157	g		L	SL	CR	AP	03/26/2018						
SL2329-11	LC26CRS1	2.5940	g		L	SL	CR	AP	03/26/2018						
SL2329-12	LC26CRS1	2.5737	g		L	SL	CR	AP	03/26/2018						
SL2329-13	LC26CRS1	2.5447	g		L	SL	CR	AP	03/26/2018						
SL2329-14	LC26CRS1	2.4354	g		L	SL	CR	AP	03/26/2018						
SL2329-17	LC26CRS1	2.5857	g		L	SL	CR	AP	03/26/2018						
SL2329-18	LC26CRS1	2.4370	g		L	SL	CR	AP	03/26/2018						
SL2329-2	LC26CRS1	2.4208	g		L	SL	CR	AP	03/26/2018						
SL2329-3	LC26CRS1	2.4263	g		L	SL	CR	AP	03/26/2018						
SL2329-4	LC26CRS1	2.4279	g		L	SL	CR	AP	03/26/2018						
SL2329-5	LC26CRS1	2.4771	g		L	SL	CR	AP	03/26/2018						
SL2329-6	LC26CRS1	2.5743	g		L	SL	CR	AP	03/26/2018						
SL2329-7	LC26CRS1	2.4455	g		L	SL	CR	AP	03/26/2018						
* SL2329-8	LC26CRS1	2.5446	g		L	SL	CR	AP	03/26/2018						
0.0119g SL2329-8 INSOL MS	LC26CRS1	2.4295	g		L	SL	CR	AP	03/26/2018						
SL2329-8 SOL MS	LC26CRS1	2.4292	g		L	SL	CR	AP	03/26/2018						
SL2329-9	LC26CRS1	~~2.4197~~ 2.4973	g		L	SL	CR	AP	03/26/2018						

*Insol MS spiked w/ PbCrO4 (SLC3761)
Soluble MS & LCS spiked w/ 0.10mL Cr6+ Std (SLC4101)

Digestion performed by: AP On: 3/26/18

Katahdin Analytical Services 5000047

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 11:57 am
Batch: WG225555

Parameter: Chromium, Hexavalent

Prep Date: 26-MAR-18

Date Analyzed: 27-MAR-18

Prep Method: SW846 3060A

Analyst Initials: AP

Prep Chemist: AP

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SL2079-13	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.4	J0.40 mg/Kgdrywt	83.	.4	0.18	0.59		
SL2133-14	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.1	U0.34 mg/Kgdrywt	85.	.4	0.17	0.56		
SL2329-1	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.7	0.70 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2329-10	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	J0.19 mg/Kgdrywt	74.	.4	0.19	0.63		
SL2329-11	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	J0.19 mg/Kgdrywt	75.	.4	0.18	0.62		
SL2329-12	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	-.65	U0.36 mg/Kgdrywt	77.	.4	0.18	0.61		
SL2329-13	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.64	0.64 mg/Kgdrywt	77.	.4	0.18	0.61		
SL2329-14	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.2	U0.20 mg/Kgdrywt	73.	.4	0.20	0.67		
SL2329-17	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.32	J0.32 mg/Kgdrywt	80.	.4	0.17	0.58		
SL2329-18	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.19	J0.19 mg/Kgdrywt	77.	.4	0.19	0.64		
SL2329-2	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.42	J0.42 mg/Kgdrywt	80.	.4	0.19	0.62		
SL2329-3	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.53	J0.53 mg/Kgdrywt	85.	.4	0.17	0.58		
SL2329-4	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.5	J0.50 mg/Kgdrywt	79.	.4	0.19	0.62		
SL2329-5	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.71	0.71 mg/Kgdrywt	80.	.4	0.18	0.60		
SL2329-6	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.54	J0.54 mg/Kgdrywt	79.	.4	0.18	0.59		
SL2329-7	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.33	J0.33 mg/Kgdrywt	82.	.4	0.18	0.60		
SL2329-8	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	1.73	1.7 mg/Kgdrywt	76.	.4	0.18	0.62		
SL2329-9	SAMP	SW846 7196A	20.000mL	25.000mL	1.2	.49	J0.49 mg/Kgdrywt	78.	.4	0.18	0.61		
WG225555-1	MBLANK	SW846 7196A	20.000mL	25.000mL	1.2	.26	J0.26 mg/Kgdrywt	NA	.4	0.14	0.48		
WG225555-2	LCS	SW846 7196A	20.000mL	25.000mL	1.2	38.01	38. mg/Kgdrywt	NA	.4	0.14	0.48		95
WG225555-5	MS	SW846 7196A	1.0000mL	25.000mL	25	721.51	720 mg/Kgdrywt	NA	.4	4.0	13.		72
WG225555-6	MS	SW846 7196A	20.000mL	25.000mL	1.2	25.89	26. mg/Kgdrywt	NA	.4	0.19	0.65		46

Comments:

SL2329-1	VOA vials received on 03/22/18
SL2329-10	VOA vials received on 03/22/18
SL2329-11	VOA vials received on 03/22/18
SL2329-12	VOA vials received on 03/22/18
SL2329-13	VOA vials received on 03/22/18
SL2329-14	VOA vials received on 03/22/18
SL2329-17	VOA vials received on 03/22/18
SL2329-18	VOA vials received on 03/22/18
SL2329-2	VOA vials received on 03/22/18
SL2329-3	VOA vials received on 03/22/18
SL2329-4	VOA vials received on 03/22/18
SL2329-5	VOA vials received on 03/22/18
SL2329-6	VOA vials received on 03/22/18
SL2329-7	VOA vials received on 03/22/18
SL2329-8	MS/MSD, VOA vials received on 03/22/18
SL2329-9	VOA vials received on 03/22/18
WG225555-1	SL2329-7
WG225555-2	SL2329-7

Entered by: AP Date: 4/2/18 Accepted by: Date: 04/02/18 ✓

Katahdin Analytical Services 5000048

WET CHEMISTRY BATCH REPORT
Apr 02 2018, 11:57 am
Batch: WG225555

WG225555-5	SL2329-8
WG225555-6	SL2329-8

Entered by: AB Date: 4/2/18 Accepted by: Date: 04/02/18

Katahdin Analytical Services 5000049

Samplenum	Measuredate	Parameter	Result	Moisture
SL2079-1	23-MAR-18	TOTAL SOLIDS	81.061%	18.939%
SL2079-2	23-MAR-18	TOTAL SOLIDS	86.094%	13.906%
SL2079-3	23-MAR-18	TOTAL SOLIDS	83.644%	16.356%
SL2079-4	23-MAR-18	TOTAL SOLIDS	79.677%	20.323%
SL2079-5	23-MAR-18	TOTAL SOLIDS	83.03%	16.97%
SL2079-6	23-MAR-18	TOTAL SOLIDS	79.823%	20.177%
SL2079-7	23-MAR-18	TOTAL SOLIDS	78.799%	21.201%
SL2079-8	23-MAR-18	TOTAL SOLIDS	82.852%	17.148%
SL2079-9	23-MAR-18	TOTAL SOLIDS	74.61%	25.39%
SL2079-10	23-MAR-18	TOTAL SOLIDS	81.336%	18.664%
SL2079-11	23-MAR-18	TOTAL SOLIDS	78.549%	21.451%
SL2079-12	23-MAR-18	TOTAL SOLIDS	77.967%	22.033%
SL2079-13	23-MAR-18	TOTAL SOLIDS	82.909%	17.091%

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

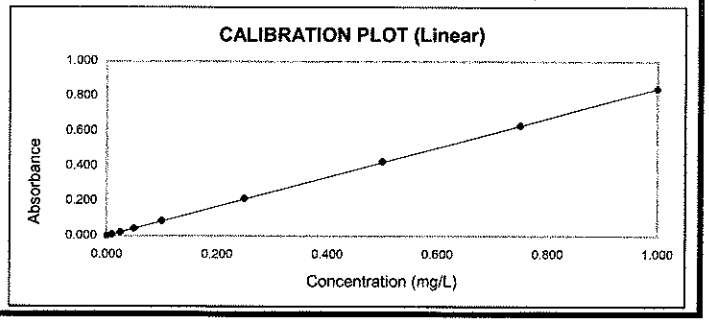
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



Katahdin Analytical Services 5000051

SAMPLE ANALYSIS

CCV Source Standard ID:	W16186	**Spreadsheet File Name:**	3/27/18.xls
CCV Source Std. Conc. (mg/L):	25	**Sample Anal. Date:**	3/27/2018
		Sample Analyst:	AP

ANALYSIS INFORMATION									DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCV	25.0	25.0	1.000	0.434		0.434	0.514	0.514							102.7%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5000	0.100	100.000%		0.26		
LCS A	20.0	25.0	1.250	0.641		0.641	0.760	0.950	2.5000	0.100	100.000%	0.100	38.01	40.00	95.0%
SL2079-9	20.0	25.0	1.250	0.163	0.165	-0.002	-0.005	-0.007	2.5958	0.100	74.610%		-0.35		
SL2079-9 Post-Dig MS	20.0	25.0	1.250	0.549	0.162	0.387	0.458								91.6%
SL2079-9 Serial Dilution	4.0	25.0	6.250	0.033	0.034	-0.001	-0.004	-0.027	2.5958	0.100	74.610%		-1.37		
SL2079-9 Insoluble MS	1.0	25.0	25.000	0.823		0.823	0.977	24.423	2.4558	0.100	74.610%	2.976	1332.92	1624.45	82.1%
SL2079-9 Soluble MS	20.0	25.0	1.250	0.758	0.355	0.403	0.477	0.596	2.4679	0.100	74.610%	0.100	32.37	54.31	59.6%
SL2079-13	20.0	25.0	1.250	0.274	0.266	0.008	0.006	0.008	2.4608	0.100	82.909%		0.40		
SL2133-14	20.0	25.0	1.250	0.106	0.102	0.004	0.002	0.002	2.5118	0.100	84.659%		0.10		
SL2133-19	20.0	25.0	1.250	0.169	0.169	0.000	-0.003	-0.004	2.4941	0.100	78.532%		-0.19		
CCV	25.0	25.0	1.000	0.431		0.431	0.510	0.510							102.0%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2133-19 Post-Dig MS	20.0	25.0	1.250	0.499	0.169	0.330	0.390								78.0%
SL2133-19 Serial Dilution	4.0	25.0	6.250	0.036	0.032	0.004	0.002	0.011	2.4941	0.100	78.532%		0.55		
SL2133-19 Insoluble MS	1.0	25.0	25.000	0.569		0.569	0.674	16.862	2.4058	0.100	78.532%	2.011	892.47	1064.46	83.8%
SL2133-19 Soluble MS	20.0	25.0	1.250	0.440	0.073	0.367	0.434	0.542	2.4197	0.100	78.532%	0.100	28.55	52.62	54.2%
SL2329-1	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.5025	0.100	80.366%		0.70		
SL2329-2	20.0	25.0	1.250	0.008		0.008	0.006	0.008	2.4208	0.100	79.673%		0.42		
SL2329-3	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.4263	0.100	85.387%		0.53		
SL2329-4	20.0	25.0	1.250	0.009		0.009	0.008	0.010	2.4279	0.100	79.142%		0.50		
SL2329-5	20.0	25.0	1.250	0.012		0.012	0.011	0.014	2.4771	0.100	80.067%		0.71		
SL2329-6	20.0	25.0	1.250	0.010		0.010	0.009	0.011	2.5742	0.100	79.025%		0.54		
CCV	25.0	25.0	1.000	0.430		0.430	0.509	0.509							101.8%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-7	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.4455	0.100	82.001%		0.33		
SL2329-8	20.0	25.0	1.250	0.081	0.055	0.026	0.028	0.035	2.5446	0.100	79.381%		1.73		
SL2329-8 Post-Dig MS	20.0	25.0	1.250	0.496	0.055	0.441	0.522								104.4%
SL2329-8 Serial Dilution	4.0	25.0	6.250	0.038	0.038	0.000	-0.003	-0.019	2.5446	0.100	79.381%		-0.94		
SL2329-8 Insoluble MS	1.0	25.0	25.000	0.470		0.470	0.557	13.915	2.4295	0.100	79.381%	1.915	721.51	992.75	72.5%
SL2329-8 Soluble MS	20.0	25.0	1.250	0.402	0.064	0.338	0.399	0.499	2.4292	0.100	79.381%	0.100	25.89	51.86	46.6%
SL2329-9	20.0	25.0	1.250	0.081	0.072	0.009	0.008	0.010	2.4973	0.100	78.204%		0.49		
SL2329-10	20.0	25.0	1.250	0.079	0.074	0.005	0.003	0.004	2.5657	0.100	74.087%		0.19		
SL2329-11	20.0	25.0	1.250	0.051	0.046	0.005	0.003	0.004	2.5940	0.100	74.631%		0.19		
SL2329-12	20.0	25.0	1.250	0.161	0.167	-0.006	-0.010	-0.013	2.5737	0.100	76.688%		-0.65		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
SL2329-13	20.0	25.0	1.250	0.085	0.074	0.011	0.010	0.013	2.5447	0.100	77.242%		0.64		
SL2329-14	20.0	25.0	1.250	0.074	0.069	0.005	0.003	0.004	2.4354	0.100	73.421%		0.20		
SL2329-17	20.0	25.0	1.250	0.007		0.007	0.005	0.007	2.5857	0.100	80.322%		0.32		
SL2329-18	20.0	25.0	1.250	0.070	0.065	0.005	0.003	0.004	2.4370	0.100	76.853%		0.19		
CCV	25.0	25.0	1.000	0.425		0.425	0.503	0.503							100.6%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000052

LG22555 R466595

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): LL6186 25 ug/mL	**CCV ID:** LL6186 25 ug/mL
LCS Stock ID: SLL4101 1000 ug/mL	**ICV ID:** LL6187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** LL4990
Diphenylcarbazide Solution ID: LL6304	**10% H2SO4 ID:** LL6318
Alkaline Digestion Reagent ID: LL6301	**Alkaline Digestion Reagent pH:** 13.07
SW 3060A Leachate Generation Date: 3/26/18	**Filtration End Time:** 1745

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1530		✓	✓	25	25		0.434
HP 3/27/18 ~~ICB~~ CCV					1	1		0.434
~~Blo~~ CCB					1	1		0.000
Blank					20	25		0.007
LCS								0.641
SL2079-9							0.165	0.163
-9 P.D.S								0.549
-9 S.D.					4.00		0.034	0.033
-9 lasolms					1.00			0.823
-9 Solms					20		0.355	0.758
-13					20		0.266	0.274
SL2133-14							0.102	0.106
-19							0.169	0.169
CCV					25			0.431
CCB					1			0.000
SL2133-19 P.D.S					20			0.499
-19 S.D					4.00		0.032	0.036
-19 lasolms					1.00		~~HP 0.055~~	0.569
-19 Solms					20	*0.073	~~0.190~~	~~0.580~~ 0.440 *
HP 3/27/18 SL2329-1								~~0.12~~ 0.012
-2								0.008

Notes:

Analyst: HP	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): p7 ug/mL	**CCV ID:** p7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL2329-3			✓	✓	20	25		0.010
-4								0.009
-5								0.012
-6								0.010
CCV					25			0.430
CCB					1			0.000
SL2329-7					20		(0.055)	0.007 *
-8							*0.166	~~0.157~~ * 0.081
-8 P.D.S								0.496
-8 S.D					4.00		0.038	0.038
-8 Insol MS					1.00			0.470
-8 Sol MS					20	0.06 *	~~0.144~~	~~0.542~~ 0.402*
-9							0.072	0.081
-10						0.07 *	~~0.160~~ *	~~0.224~~ * 0.079
-11							0.046	0.051
-12							0.167	0.161
CCV					25			0.425
CCB					1			0.000
SL2329-13					20	* 0.074	~~0.236~~ ~~0.236~~	~~0.187~~ * 0.085
-14						* 0.069	~~0.206~~	~~0.245~~ 0.074
-15 17								0.907 *

AM 3/27/18

Notes: * sample centrifuged & reanalyzed on spec.

Analyst: AT	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): P7 ug/mL	**CCV ID:** P7 ug/mL
LCS Stock ID: ug/mL	**ICV ID:** ug/mL
Reagents:	**Phosphate Buffer ID:**
Diphenylcarbazide Solution ID:	**10% H2SO4 ID:**
Alkaline Digestion Reagent ID:	**Alkaline Digestion Reagent pH:**
SW 3060A Leachate Generation Date:	**Filtration End Time:**

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
SL232418			✓	✓	20	25	~~0.151~~ +0.065	~~0.213~~ 0.070 *
ccv			↓	↓	25	↓		0.425
CCB	1636		↓	↓	2	↓		0.000
					3/26/18			
				M				

Notes:

Analyst: HP	**Date:** 3/27/18
Checked By:	**Date:** 04/02/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL
☐ ☐ _____ Spike (ID/Vol):_____/_____mL
☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID:_____

Hot Plate/Block ID :_____ Filter Paper:_____
Start Time/Temp.: 1220 / 90 °C
End Time/Temp. : 1320 / 93 °C
Thermometer ID/Pos.:_____/_____

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC26CRS1	2.5	g	0.10	L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
LCS	LC26CRS1	2.5	g		L	SL	CR	AP	03/26/2018	N/A	N/A	N/A	N/A		
SL2079-13	LC26CRS1	2.4608	g		L	SL	CR	AP	03/26/2018						
* SL2079-9	LC26CRS1	2.5958	g		L	SL	CR	AP	03/26/2018						
0.0185g SL2079-9 INSOL MS	LC26CRS1	2.4558	g		L	SL	CR	AP	03/26/2018						
SL2079-9 SOL MS	LC26CRS1	2.4679	g		L	SL	CR	AP	03/26/2018						
SL2133-14	LC26CRS1	2.5118	g		L	SL	CR	AP	03/26/2018						
* SL2133-19	LC26CRS1	2.4941	g		L	SL	CR	AP	03/26/2018						
0.0125g SL2133-19 INSOL MS	LC26CRS1	2.4058	g		L	SL	CR	AP	03/26/2018						
SL2133-19 SOL MS	LC26CRS1	2.4197	g		L	SL	CR	AP	03/26/2018						
SL2329-1	LC26CRS1	2.5025	g		L	SL	CR	AP	03/26/2018						
SL2329-10	LC26CRS1	~~2.4107~~ 2.5157	g		L	SL	CR	AP	03/26/2018						
SL2329-11	LC26CRS1	2.5940	g		L	SL	CR	AP	03/26/2018						
SL2329-12	LC26CRS1	2.5737	g		L	SL	CR	AP	03/26/2018						
SL2329-13	LC26CRS1	2.5447	g		L	SL	CR	AP	03/26/2018						
SL2329-14	LC26CRS1	2.4354	g		L	SL	CR	AP	03/26/2018						
SL2329-17	LC26CRS1	2.5857	g		L	SL	CR	AP	03/26/2018						
SL2329-18	LC26CRS1	2.4370	g		L	SL	CR	AP	03/26/2018						
SL2329-2	LC26CRS1	2.4208	g		L	SL	CR	AP	03/26/2018						
SL2329-3	LC26CRS1	2.4263	g		L	SL	CR	AP	03/26/2018						
SL2329-4	LC26CRS1	2.4279	g		L	SL	CR	AP	03/26/2018						
SL2329-5	LC26CRS1	2.4771	g		L	SL	CR	AP	03/26/2018						
SL2329-6	LC26CRS1	2.5742	g		L	SL	CR	AP	03/26/2018						
SL2329-7	LC26CRS1	2.4455	g		L	SL	CR	AP	03/26/2018						
* SL2329-8	LC26CRS1	2.5446	g		L	SL	CR	AP	03/26/2018						
0.0119g SL2329-8 INSOL MS	LC26CRS1	2.4295	g		L	SL	CR	AP	03/26/2018						
SL2329-8 SOL MS	LC26CRS1	2.4292	g		L	SL	CR	AP	03/26/2018						
SL2329-9	LC26CRS1	~~2.4977~~ 2.4973	g		L	SL	CR	AP	03/26/2018						

*Insol MS spiked w/ PbCrO4 (SLC3761)
Soluble MS & LCS spiked w/ 0.10mL Cr6+ Std (SLC4101)

Reviewed 04/02/18

QA-065-Revision 1 - 09/23/2010 Digestion performed by: AP On: 3/26/18 Page: LC087 Revision: 00

Katahdin Analytical Services 5000056

Samplenum	Measuredate	Parameter	Result	Moisture
SL2133-2	19-MAR-18	TOTAL SOLIDS	79.502%	20.498%
SL2133-1	19-MAR-18	TOTAL SOLIDS	76.337%	23.663%
SL2133-3	19-MAR-18	TOTAL SOLIDS	77.984%	22.016%
SL2133-4	19-MAR-18	TOTAL SOLIDS	80.709%	19.291%
SL2133-5	19-MAR-18	TOTAL SOLIDS	74.579%	25.421%
SL2133-6	19-MAR-18	TOTAL SOLIDS	76.982%	23.018%
SL2133-7	19-MAR-18	TOTAL SOLIDS	76.124%	23.876%
SL2133-8	19-MAR-18	TOTAL SOLIDS	79.407%	20.593%
SL2133-9	19-MAR-18	TOTAL SOLIDS	76.662%	23.338%
SL2133-10	19-MAR-18	TOTAL SOLIDS	77.523%	22.477%
SL2133-11	19-MAR-18	TOTAL SOLIDS	76.236%	23.764%
SL2133-12	19-MAR-18	TOTAL SOLIDS	79.146%	20.854%
SL2133-13	19-MAR-18	TOTAL SOLIDS	75.237%	24.763%
SL2133-14	19-MAR-18	TOTAL SOLIDS	84.659%	15.341%
SL2133-15	19-MAR-18	TOTAL SOLIDS	80.517%	19.483%
SL2133-16	19-MAR-18	TOTAL SOLIDS	77.228%	22.772%
SL2133-17	19-MAR-18	TOTAL SOLIDS	78.289%	21.711%
SL2133-18	19-MAR-18	TOTAL SOLIDS	77.045%	22.955%
SL2133-19	19-MAR-18	TOTAL SOLIDS	78.532%	21.468%
SL2133-21	19-MAR-18	TOTAL SOLIDS	81.37%	18.63%
SL2133-22	19-MAR-18	TOTAL SOLIDS	79.049%	20.951%

Samplenum	Measuredate	Parameter	Result	Moisture
SL2329-1	22-MAR-18	TOTAL SOLIDS	80.366%	19.634%
SL2329-2	22-MAR-18	TOTAL SOLIDS	79.673%	20.327%
SL2329-3	22-MAR-18	TOTAL SOLIDS	85.387%	14.613%
SL2329-4	22-MAR-18	TOTAL SOLIDS	79.142%	20.858%
SL2329-5	22-MAR-18	TOTAL SOLIDS	80.067%	19.933%
SL2329-6	22-MAR-18	TOTAL SOLIDS	79.025%	20.975%
SL2329-7	22-MAR-18	TOTAL SOLIDS	82.001%	17.999%
SL2329-8	22-MAR-18	TOTAL SOLIDS	76.381%	23.619%
SL2329-9	22-MAR-18	TOTAL SOLIDS	78.204%	21.796%
SL2329-10	22-MAR-18	TOTAL SOLIDS	74.087%	25.913%
SL2329-11	22-MAR-18	TOTAL SOLIDS	74.631%	25.369%
SL2329-12	22-MAR-18	TOTAL SOLIDS	76.688%	23.312%
SL2329-13	22-MAR-18	TOTAL SOLIDS	77.242%	22.758%
SL2329-14	22-MAR-18	TOTAL SOLIDS	73.421%	26.579%
SL2329-17	22-MAR-18	TOTAL SOLIDS	80.322%	19.678%
SL2329-18	22-MAR-18	TOTAL SOLIDS	76.853%	23.147%

HEXAVALENT CHROMIUM IN SOILS

Preparation Method: 3060A (Alkaline Digestion) Analysis Method: 7196A (Colorimetric)

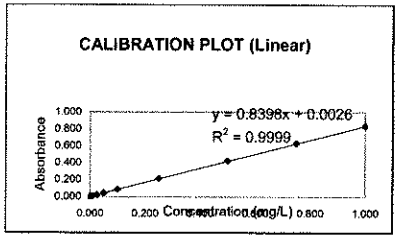
CALIBRATION INFORMATION

Calibration Analysis Date:	3/22/2018
Calibration Analyst:	AP

KCrO4 Stock Standard ID:	W16042
KCrO4 Stock Standard Conc (mg/L):	25

Standard Name	Vol. Of Stock Std. Added (ml)	Final Volume (mL)	Std. Conc. (mg/L)	Meas. Abs.	Response Factor
Calib. Blank	0.000	25	0.000	0.000	
Std. 1	0.010	25	0.010	0.009	1.111
Std. 2	0.025	25	0.025	0.023	1.087
Std. 3	0.050	25	0.050	0.044	1.136
Std. 4	0.100	25	0.100	0.088	1.136
Std. 5	0.250	25	0.250	0.215	1.163
Std. 6	0.500	25	0.500	0.427	1.171
Std. 7	0.750	25	0.750	0.633	1.185
Std. 8	1.000	25	1.000	0.839	1.192

No. of data points:	9
Corr. Coeff. (R):	0.999966371
Slope (m):	0.839828612
Intercept (b):	0.002562242



SAMPLE ANALYSIS

CCV Source Standard ID:	W16186	**Spreadsheet File Name:**	3/29/18.xls
CCV Source Std. Conc. (mg/L):	25	**Sample Anal. Date:**	3/29/2018
		Sample Analyst:	AP

ANALYSIS INFORMATION									DIGESTION INFORMATION				CALCULATIONS		
Katahdin Sample No.	Initial Volume, IV (mL)	Final Volume, FV (mL)	Dil. Fctr.	Sample Absorbance	Matrix Blk. Absorbance	Corrected Absorbance	Calc. Cr+6 in FV (mg/L)	Calc. Cr+6 in IV (mg/L)	Digested Wet Wt. (g)	Digestate Final Vol. (L)	Total Solids (%)	Cr+6 Spike Added (mg)	Calc. Cr+6 in Sample (mg/kgdrywt)	Calc. Cr+6 Spike Added (mg/kgdrywt)	CCV / Spike Recovery
ICV	25.0	25.0	1.000	0.432		0.432	0.511	0.511							102.3%
CCV	25.0	25.0	1.000	0.416		0.416	0.492	0.492							98.5%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							
METHOD BLANK A	20.0	25.0	1.250	0.006		0.006	0.004	0.005	2.5000	0.100	100.000%		0.20		
SL2329-8	20.0	25.0	1.250	0.169	0.170	-0.001	-0.004	-0.005	2.5583	0.100	79.381%		-0.26		
SL2329-8 Post-Dig MS	20.0	25.0	1.250	0.531	0.170	0.361	0.427	0.533	2.5583	0.100	79.381%		26.27		85.4%
SL2329-8 Serial Dilution	4.0	25.0	6.250	0.042	0.042	0.000	-0.003	-0.019	2.5583	0.100	79.381%		-0.94		
SL2329-8 Insoluble MS	1.0	25.0	25.000	0.676		0.676	0.802	20.047	2.4008	0.100	79.381%	2.413	1051.90	1266.32	83.1%
SL2329-8 Soluble MS	20.0	25.0	1.250	0.458	0.178	0.280	0.330	0.412	2.4195	0.100	79.381%	0.100	21.48	52.07	41.8%
LCS A	20.0	25.0	1.250	0.624		0.624	0.740	0.925	2.5000	0.100	100.000%	0.100	37.00	40.00	92.5%
CCV	25.0	25.0	1.000	0.415		0.415	0.491	0.491							98.2%
CCB	25.0	25.0	1.000	0.000		0.000	-0.003	-0.003							

Katahdin Analytical Services 5000059

KATAHDIN ANALYTICAL SERVICES

METHOD SW846 7196A

MATRIX: SOIL / SEDIMENT / SOLID **PQL: 0.5mg/Kg (assumes 2.5g dry weight to 100 mL)**

Calibration / Quality Control Checks:	
Cal Std. Source ID (K2Cr2O7): LV16182 25 ug/mL	**CCV ID:** LV16182 25 ug/mL
LCS Stock ID: SLV4101 1000 ug/mL	**ICV ID:** LV16187 25 ug/mL
Reagents:	**Phosphate Buffer ID:** LV14990
Diphenylcarbazide Solution ID: W16304	**10% H2SO4 ID:** W16331
Alkaline Digestion Reagent ID: W16301	**Alkaline Digestion Reagent pH:** 12.66
SW 3060A Leachate Generation Date: 3/29/18	**Filtration End Time:** 1645

Sample ID	Analysis Time	Dilution	pH adj'd 7.5 +/- 0.5	pH adj'd 2.0 +/- 0.5	Sample to Color Vol. (mL)	Final Color Vol. (mL)	Sample Color/Turb Abs @ 540 nm	Developed Sample Abs @ 540 nm
ICV	1721		✓	✓	25	25		0.432
~~CCV LCB #~~			↑	↑	↓	↓		0.416
CCB					↓			0.000
Blank					20			0.006
SL2329-8					↓		0.170	0.169
-8 P.D.S.					↓			0.531
-8 S.D.					4.00		0.042	0.042
-8 Insol MS					1.000			0.678 AP 3/29/18
-8 Sol MS					20		0.178	0.458
LCS					↓			0.624
CCV	↓				25			0.415
CCB	1729		↓	↓	↓	↓		0.000

AP 4/2/18

Notes:

Analyst: AP	**Date:** 3/29/18
Checked By:	**Date:** 04/02/18

Katahdin Analytical Services, Inc. **Metals Preparation Benchsheet**

Reagent Information:

HNO3:_____ HCL:_____ H2O2:_____ **Method:** 3060 W7, W8

LCS / Spike **LCS/Spiking Information:**

☐ ☐ CLPP-SPK-1 (ID/Vol):_____/_____mL Hot Plate/Block ID :_____ Filter Paper:_____

☐ ☐ CLPP-SPK-INT1 (ID/Vol):_____/_____mL Start Time/Temp.: 1323 / 90 °C

☐ ☐ CLPP-SPK-INT2 (ID/Vol):_____/_____mL End Time/Temp. : 1423 / 95 °C

☐ ☐ _____ Spike (ID/Vol):_____/_____mL Thermometer ID/Pos.:_____/_____

☐ ☐ CLPP-SPK-4 (ID/Vol):_____/_____mL

LCSS :_____ Balance ID: 124016031

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Initial Color	Initial Texture	Final Color	Final Clarity	Artifacts	Bottle
BLANK	LC29CRS2	2.50	g	0.10	L	SL	CR	AP	03/29/2018	N/A	N/A	N/A	N/A		
LCS	LC29CRS2	1	g		L	SL	CR	AP	03/29/2018	N/A	N/A	N/A	N/A		
SL2329-8	LC29CRS2	2.5583	g		L	SL	CR	AP	03/29/2018						
SL2329-8 INSOL MS	LC29CRS2	2.4008	g		L	SL	CR	AP	03/29/2018						
SL2329-8 SOL MS	LC29CRS2	2.4195	g	↓	L	SL	CR	AP	03/29/2018						

Insol MS spiked w/ 0.0150g $PbCrO_4$ (SLM3761)

LCS & Soluble MS spiked w/ 0.10mL 1000mg/L Cr^{6+} Stock Std (SLC4101)

Reviewed [illegible] 04/02/18

QA-065-Revision 1 - 09/23/2010 Digestion performed by: AP On: 3/29/18 Page: LC109 Revision: 00

Katahdin Analytical Services 5000061

TOTAL SOLIDS BATCH REPORT
Mar 19 2018, 09:41 am
Batch: WG224928

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL2133-1	SL	SAMP	16-MAR-18	1.3 g	30.725 g	23.7622 g	23.7622 g	ZF	19-MAR-18	76.3370	76. %		
SL2133-10	SL	SAMP	16-MAR-18	1.3 g	34.7105 g	27.2008 g	27.2008 g	ZF	19-MAR-18	77.5230	78. %		
SL2133-11	SL	SAMP	16-MAR-18	1.3 g	28.9907 g	22.4104 g	22.4104 g	ZF	19-MAR-18	76.2360	76. %		
SL2133-12	SL	SAMP	16-MAR-18	1.3 g	40.0427 g	31.9633 g	31.9633 g	ZF	19-MAR-18	79.1460	79. %		
SL2133-13	SL	SAMP	16-MAR-18	1.3 g	31.2504 g	23.8338 g	23.8338 g	ZF	19-MAR-18	75.2370	75. %		
SL2133-14	SL	SAMP	16-MAR-18	1.3 g	23.3838 g	19.996 g	19.996 g	ZF	19-MAR-18	84.6590	85. %		
SL2133-15	SL	SAMP	16-MAR-18	1.3 g	21.3875 g	17.4738 g	17.4738 g	ZF	19-MAR-18	80.5170	80. %		
SL2133-16	SL	SAMP	16-MAR-18	1.3 g	30.8273 g	24.1034 g	24.1034 g	ZF	19-MAR-18	77.2280	77. %		
SL2133-17	SL	SAMP	16-MAR-18	1.3 g	26.3953 g	20.9468 g	20.9468 g	ZF	19-MAR-18	78.2890	78. %		
SL2133-18	SL	SAMP	16-MAR-18	1.3 g	31.0413 g	24.2141 g	24.2141 g	ZF	19-MAR-18	77.0450	77. %		
SL2133-19	SL	SAMP	16-MAR-18	1.3 g	26.4141 g	21.0227 g	21.0227 g	ZF	19-MAR-18	78.5320	78. %		
SL2133-2	SL	SAMP	16-MAR-18	1.3 g	28.9763 g	23.3031 g	23.3031 g	ZF	19-MAR-18	79.5020	80. %		
SL2133-21	SL	SAMP	16-MAR-18	1.3 g	25.0394 g	20.6168 g	20.6168 g	ZF	19-MAR-18	81.3700	81. %		
SL2133-3	SL	SAMP	16-MAR-18	1.3 g	34.0866 g	26.8682 g	26.8682 g	ZF	19-MAR-18	77.9840	78. %		
SL2133-4	SL	SAMP	16-MAR-18	1.3 g	37.2817 g	30.3404 g	30.3404 g	ZF	19-MAR-18	80.7090	81. %		
SL2133-5	SL	SAMP	16-MAR-18	1.3 g	29.9468 g	22.6645 g	22.6645 g	ZF	19-MAR-18	74.5790	74. %		
SL2133-6	SL	SAMP	16-MAR-18	1.3 g	29.2651 g	22.8281 g	22.8281 g	ZF	19-MAR-18	76.9820	77. %		
SL2133-7	SL	SAMP	16-MAR-18	1.3 g	34.9789 g	26.9376 g	26.9376 g	ZF	19-MAR-18	76.1240	76. %		
SL2133-8	SL	SAMP	16-MAR-18	1.3 g	37.5511 g	30.086 g	30.086 g	ZF	19-MAR-18	79.4070	79. %		
SL2133-9	SL	SAMP	16-MAR-18	1.3 g	32.3829 g	25.1287 g	25.1287 g	ZF	19-MAR-18	76.6620	77. %		
WG224928-1	SL	MBLANK	16-MAR-18	1.3 g	5.701 g	5.6994 g	5.6994 g	ZF	19-MAR-18	99.9640	100 %		
WG224928-2	SL	LCS	16-MAR-18	1.3 g	6.2907 g	5.7887 g	5.7887 g	ZF	19-MAR-18	89.9410	90. %	100	
WG224928-3	SL	DUP	16-MAR-18	1.3 g	27.2711 g	21.9663 g	21.9663 g	ZF	19-MAR-18	79.5740	80. %		3
WG224928-4	SL	DUP	16-MAR-18	1.3 g	23.2929 g	18.6341 g	18.6341 g	ZF	19-MAR-18	78.8170	79. %		0

Comments:

SL2133-19	MS/MSD
WG224928-1	SL2133-18
WG224928-2	SL2133-18
WG224928-3	SL2133-18
WG224928-4	SL2133-19

Entered by: SE Date: 3-19-18 Accepted by: JW Date: 3.19.18

Katahdin Analytical Services 5000062

prep time: 17:28

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Work Group Report (wk02)

16-MAR-18 05:23 PM

Work Group: WG224928 R465172 **Created:** 16-MAR-18
Department: 100 Wetlab Prep **Operator:** **Due:**

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR Location
1	SL2133-1	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
2	SL2133-2	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
3	SL2133-3	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
4	SL2133-4	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
5	SL2133-5	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
6	SL2133-6	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
7	SL2133-7	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
8	SL2133-8	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
9	SL2133-9	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
10	SL2133-10	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
11	SL2133-11	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
12	SL2133-12	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
13	SL2133-13	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
14	SL2133-14	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
15	SL2133-15	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
16	SL2133-16	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
17	SL2133-17	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
18	SL2133-18	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
19	SL2133-19	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
20	SL2133-21	ATI, Inc.	TS	Solid	WIP	U	28-MAR-18	
21	WG224928-1	MBLANK	TS	Solid	WIP	U	16-MAR-18	
22	WG224928-2	LCS	TS	Solid	WIP	U	16-MAR-18	
23	WG224928-3	DUP	TS	Solid	WIP	U	16-MAR-18	
24	WG224928-4	DUP	TS	Solid	WIP	U	16-MAR-18	

Comments:

SL2133-19	MS/MSD
WG224928-1	SL2133-18
WG224928-2	SL2133-18
WG224928-3	SL2133-18
WG224928-4	SL2133-19

Total Solids: SM2540 G / ASTM D2216			PQL: 0.10%	Oven ID: 107N0042		Balance Calibrated?
TS	In 1	In 2	TS	Out 1	Out 2	(Y) N
ANALYST IN:	ZF		ANALYST OUT:	BS		In: ✓
DATE IN:	3/16/18		DATE OUT:	3/17/18		Out (TS):
TIME IN:	17:43		TIME OUT:	1051		Balance ID: OHAUS
TEMP IN:	104°C		TEMP OUT:	104°C		S/N 1124016031

TOTAL SOLIDS BATCH REPORT
Mar 19 2018, 09:47 am
Batch: WG224935

Sample	Matrix	Type	Prep Date	Tare	Initial	Final1	Final	by	Date	Raw TS	Rep TS	Recovery	RPD
SL2049-7	SL	SAMP	16-MAR-18	1.3 g	14.5578 g	11.0541 g	11.0541 g	ZF	19-MAR-18	73.5720	74. %		
SL2133-22	SL	SAMP	16-MAR-18	1.3 g	27.4575 g	21.9772 g	21.9772 g	ZF	19-MAR-18	79.0490	79. %		
SL2137-1	SL	SAMP	16-MAR-18	1.3 g	33.0101 g	23.9341 g	23.9341 g	ZF	19-MAR-18	71.3780	71. %		
WG224935-1	SL	MBLANK	16-MAR-18	1.3 g	5.7483 g	5.7463 g	5.7463 g	ZF	19-MAR-18	99.9550	100 %		
WG224935-2	SL	LCS	16-MAR-18	1.3 g	6.4737 g	5.9722 g	5.9722 g	ZF	19-MAR-18	90.3070	90. %	100	
WG224935-3	SL	DUP	16-MAR-18	1.3 g	15.6616 g	11.9886 g	11.9886 g	ZF	19-MAR-18	74.4250	74. %		1

Comments:

WG224935-1	SL2049-7
WG224935-2	SL2049-7
WG224935-3	SL2049-7

Entered by: SC Date: 3-19-18 Accepted by: JH Date: 3.19.18

Katahdin Analytical Services 5000064

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

preptime: 17:48

Work Group Report (wk02)

16-MAR-18 05:46 PM

Work Group: WG224935 R465181 **Created:** 16-MAR-18
Department: 100 Wetlab Prep **Operator:** **Due:**

Tin	Sample	Account Name	Product	Matrix	Status	UA	Workdate	PR	Location
25	SL2049-7	[redacted]	TS	Solid	WIP	U	26-MAR-18		
26	SL2133-22	[redacted]	TS	Solid	WIP	U	28-MAR-18		
27	SL2137-1	[redacted]	TS	Solid	WIP	U	28-MAR-18		4oz Glass
28	WG224935-1	MBLANK	TS	Solid	WIP	U	16-MAR-18		
29	WG224935-2	LCS	TS	Solid	WIP	U	16-MAR-18		
30	WG224935-3	DUP	TS	Solid	WIP	U	16-MAR-18		

Comments:

WG224935-1	SL2049-7
WG224935-2	SL2049-7
WG224935-3	SL2049-7

Total Solids: SM2540 G / ASTM D2216			PQL: 0.10%	Oven ID: 107N0042		Balance Calibrated?
TS	In 1	In 2	TS	Out 1	Out 2	(Y) N
ANALYST IN:	ZF		ANALYST OUT:	JD		In: ✓
DATE IN:	3/16/18		DATE OUT:	3/17/18		Out (TS):
TIME IN:	18:07		TIME OUT:	1051		Balance ID: OHAUS
TEMP IN:	104°C		TEMP OUT:	104°C		S/N 1124016031

ATI, INC.
CORNHUSKER
ARMY AMMUNITION PLANT
SL2295

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

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SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
ATI, INC.
CORNHUSKER ARMY AMMUNITION PLANT
SL2295

Sample Receipt

The following samples were received on March 20, 2018 and were logged in under Katahdin Analytical Services work order number SL2295 for a hardcopy due date of April 06, 2018.

KATAHDIN Sample No.	ATI Sample Identification
SL2295-1	CHAAP-21C-LGIA-DPT02
SL2295-2	CHAAP-21C-LGIA-DPT04
SL2295-3	CHAAP-21C-LGIA-DPT06
SL2295-4	CHAAP-21C-LGIA-DPT08
SL2295-5	CHAAP-21C-LGIA-DPT10
SL2295-6	CHAAP-21C-LGIA-DPT12
SL2295-7	CHAAP-21C-LGIA-DPT14
SL2295-8	CHAAP-21C-LGIA-DPT16
SL2295-9	CHAAP-21C-LGIA-DPT18
SL2295-10	CHAAP-21C-LGIA-DPT20
SL2295-11	CHAAP-21C-UGIA-DPT01
SL2295-12	CHAAP-21C-UGIA-DPT03
SL2295-13	CHAAP-21C-UGIA-DPT05
SL2295-14	CHAAP-21C-UGIA-DPT07
SL2295-15	CHAAP-21C-UGIA-DPT09
SL2295-16	CHAAP-21C-UGIA-DPT11
SL2295-17	CHAAP-21C-UGIA-DPT13
SL2295-18	CHAAP-21C-UGIA-DPT15
SL2295-19	CHAAP-21C-UGIA-DPT17
SL2295-20	CHAAP-21C-UGIA-DPT19
SL2295-21	CHAAP-21C-TB-031718
SL2295-22	CHAAP-21C-LGIA-DPT106
SL2295-23	CHAAP-21C-EB-031718
SL2295-24	CHAAP-21C-UGIA-DPT109
SL2295-25	CHAAP-21C-EB-031818

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SL2295 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

Sample SL2295-2 was used for the matrix spike (MS) and matrix spike duplicate (MSD) per client request.

8260C Analysis

Samples SL2295-10, 11, 12, and 14 had recoveries for the surrogate 1,2-dichloroethane-d4 that were high and outside of the DoD QSM acceptance criteria. These samples were all reanalyzed at a dilution and had similar deviations. The results for both analyses are reported.

Samples SL2295-2, 4DL, and 6RA had recoveries for one or more surrogates that were high and outside of the DoD QSM acceptance criteria. These samples were all reanalyzed at a dilution and had acceptable surrogate recoveries. The results for both analyses are reported.

Sample SL2295-5 had a recovery for one surrogate that was low and outside of the DoD QSM acceptance criteria. The sample also had a low response for one internal standard, which was outside the DoD QSM acceptance limit of -50% to +100% of the responses of the internal standards of the ICAL midpoint standard. This sample was reanalyzed and had two surrogates with high recoveries. The results for both analyses are reported.

Sample SL2295-7 had a recovery for one surrogate that was high and outside of the DoD QSM acceptance criteria. This sample was reanalyzed with similar deviations. The results for both analyses are reported.

The method blank WG225300-2 had a recovery for one surrogate that was low and outside of the DoD QSM acceptance criteria.

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing CVs.

The opening CV (file T4740) had a high response for the compound acetone that resulted in a %D that was greater than the DoD QSM acceptance limits of 20%.

The closing calibration verification standard (CV) (file T4757) had a high response for the target analyte Freon-113 that resulted in a %D that exceeded the DoD QSM acceptance limit of ±20%. If a closing CV fails, the DoD QSM allows for the analysis of two additional CVs which do not need to be within the 12 hour window. The two additional CV's (files T4758 and T4759) were acceptable and all three CVs are reported.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on DoD QSM acceptance limits for the full list of spiked compounds and laboratory established acceptance limits for all other analytes. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

8330 Analysis

Sample SL2295-2 was manually integrated for the extraction surrogate 1,2-dinitrobenzene on the primary column. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The MSD, WG225094-4, had a high recovery of the target analyte 2,4-dinitrotoluene that was outside of the QAPP acceptance limits. Since the LCS, WG225094-2, had an acceptable recovery, no further action was taken.

All samples were initially analyzed on the primary Phenomenex column. If a sample has a peak that is within the retention time window of a target analyte and the concentration is above the PQL, the sample is reanalyzed for confirmation on the confirmation Acclaim E2 column. An analyte is considered confirmed if the mentioned criteria are achieved with both columns. Samples SL2295-1, 6 through 10, 12, 16 through 18, and 25 were reanalyzed for confirmation on the confirmation Acclaim E2 column and no analytes confirmed. All of the supporting data for the confirmation analysis is included in the report. The results from the primary column are reported.

The independent check standard (file HKH10016), associated with the initial calibration analyzed on 08/01/17, had high concentrations for the target analytes tetryl, 4-AM-DNT, and 3-nitrotoluene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

There were no other protocol deviations or observations noted by the organics laboratory staff.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
04.06.18

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client:	ATI	KAS PM:	[illegible]	Sampled By:	Client
Project:		KIMS Entry By:	JCB	Delivered By:	Fedex
KAS Work Order#:	SL2295	KIMS Review By:	GN	Received By:	JCB
SDG #:		Cooler: 1 of 7		Date/Time Rec.:	3.22.18 1000

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.3
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client:	ATI	KAS PM:	HAM	Sampled By:	Client
Project:		KIMS Entry By:	JCB	Delivered By:	Fedex
KAS Work Order#:	SL2295	KIMS Review By:	GN	Received By:	JCB
SDG #:		Cooler: 2 of 7		Date/Time Rec.:	3.22.18 1000

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.8
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC. **Sample Receipt Condition Report**

Client:	ATI	KAS PM:	HMM	Sampled By:	Client
Project:		KIMS Entry By:	SCB	Delivered By:	Fedex
KAS Work Order#:	SL2295	KIMS Review By:	GN	Received By:	JCB
SDG #:		Cooler:	3 of 7	Date/Time Rec.:	3.22.18 1000

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HNM	Sampled By: Client
Project:	KIMS Entry By: JCB	Delivered By: Fedex
KAS Work Order#: SL2295	KIMS Review By: GN	Received By: JCB
SDG #:	Cooler: 4 of 7	Date/Time Rec.: 3.22.18 1000

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?					
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC. **Sample Receipt Condition Report**

Client:	ATI	KAS PM:	HTM	Sampled By:	Client
Project:		KIMS Entry By:	JCB	Delivered By:	Fedex
KAS Work Order#:	SL2295	KIMS Review By:	GN	Received By:	JCB
SDG #:		Cooler:	5 of 7	Date/Time Rec.:	3.22.18 1000

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 0.9
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC. — Sample Receipt Condition Report

Client: ATI	KAS PM: HHW	Sampled By: Client
Project:	KIMS Entry By: JCB	Delivered By: Fedex
KAS Work Order#: SL2295	KIMS Review By: GN	Received By: JCB
SDG #:	Cooler: 6 of 7	Date/Time Rec.: 3.22.18 1000

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.9
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC.

Sample Receipt Condition Report

Client: ATI	KAS PM: HTM	Sampled By: Client
Project:	KIMS Entry By: JCB	Delivered By: Fedex
KAS Work Order#: SL2295	KIMS Review By: GN	Received By: JCB
SDG #:	Cooler: 7 of 7	Date/Time Rec.: 3.22.18 1000

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.2
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
Air: Refer to KAS COC for canister/flow controller requirements.	√ if air included				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin ANALYTICAL SERVICES
600 Technology Way
P.O. Box 540
Scarborough, ME 04070
Tel: (207) 874-2400
Fax: (207) 775-4029

Chain of Custody

Client:	Contact:	Phone #:	Fax #:
ATI INC.	David Nelson	410-992-3424	( )
Address: 9220 Rumsey Road, Suite 100	City: Columbia	State: MD	Zip Code: 21045
Purchase Order #:	Proj. Name/No.:		Katahdin Quote #:
Bill (if different than above):		Address:	
Sampler (Print/Sign): Alex Hedgepath - HGL			Copies To: Ryan Sullivan / Jennifer Spies

LAB USE ONLY — Work Order #: Katahdin Project Number SL2295

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C: Temp Blank Intact Not Intact

	Sample Description	Time Collected	Date Collected	Matrix	No. of Containers	VOCs (8260) Filt. N	Explosives (8330B) Filt. N	Metals (6020) Filt. N	Metals (6020) Field Filtered Filt. Y	PAHs (8270C-SIM) Filt. N	CrVI (7196A) Filt. N	SPLP Metals (1312) Filt. N	Filt. N	Filt. N	Filt. N
						Analysis and Container Type / Preservatives									
1	CHAAP-21C-LGIA-DPT02	1130	3/17/2018	W	5	X	X								
2	CHAAP-21C-LGIA-DPT04	1500	3/17/2018	W	5	X	X								
3	CHAAP-21C-LGIA-DPT06	1305	3/17/2018	W	5	X	X								
4	CHAAP-21C-LGIA-DPT08	1615	3/17/2018	W	5	X	X								
5	CHAAP-21C-LGIA-DPT10	1400	3/18/2018	W	5	X	X								
6	CHAAP-21C-LGIA-DPT12	1100	3/18/2018	W	5	X	X								
7	CHAAP-21C-LGIA-DPT14	1220	3/18/2018	W	5	X	X								
8	CHAAP-21C-LGIA-DPT16	1740	3/18/2018	W	5	X	X								
9	CHAAP-21C-LGIA-DPT18	1630	3/18/2018	W	5	X	X								
10	CHAAP-21C-LGIA-DPT20	1520	3/18/2018	W	5	X	X								
11	CHAAP-21C-UGIA-DPT01	1235	3/17/2018	W	5	X	X								
12	CHAAP-21C-UGIA-DPT03	1510	3/17/2018	W	5	X	X								
13	CHAAP-21C-UGIA-DPT05	1415	3/17/2018	W	5	X	X								
14	CHAAP-21C-UGIA-DPT07	1620	3/17/2018	W	5	X	X								
15	CHAAP-21C-UGIA-DPT09	1405	3/18/2018	W	5	X	X								
16	CHAAP-21C-UGIA-DPT11	1105	3/18/2018	W	5	X	X								
17	CHAAP-21C-UGIA-DPT13	1225	3/18/2018	W	5	X	X								
18	CHAAP-21C-UGIA-DPT15	1745	3/18/2018	W	5	X	X								
19	CHAAP-21C-UGIA-DPT17	1635	3/18/2018	W	5	X	X								
20	CHAAP-21C-UGIA-DPT19	1525	3/18/2018	W	5	X	X								
21	CHAAP-21C-TB-031718	1000	3/17/2018	W	3	X									
22	CHAAP-21C-LGIA-DPT04-MS/MSD	1500	3/17/2018	W	10	X	X								
23	CHAAP-21C-LGIA-DPT106	1200	3/17/2018	W	5	X	X								
24	CHAAP-21C-EB-031718	1630	3/17/2018	W	5	X	X								
25	CHAAP-21C-UGIA-DPT109	1200	3/18/2018	W	5	X	X								
26	CHAAP-21C-EB-031818	1800	3/18/2018	W	5	X	X								
	- end of samples - 5 day TAT requested														

COMMENTS: Expedieted 5-day TAT request

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
Alex Hedgepath (HGL)	3/19/2019 700	3.20.18			
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:

All laboratory and field work shall be governed by KATAHDIN's Standard Terms and Conditions, except where a Purchase Order or Contract supersede.

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Mar. 20, 2018
02:50 PM

Login Number: SL2295

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Quote/Incoming: ATI-CORN-AAP

Primary Report Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045
david.nelson@atiinc.com

Primary Invoice Address:
David Nelson
ATI, Inc.
9220 Rumsey Road
Suite 100
Columbia,MD 21045

Report CC Addresses:
Invoice CC Addresses:

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD 5.0, ND to LOD w/ J flags. Report all valid runs. Flag dilutions w/ "D" qualifier. Include any excedences in the case narrative. Limits in KIMS match QAPP. Hold extracts for 60 days. 8260B, 8270DSIM, 8330B, 6020A/7471A/7471B.
CHECK NO.	:	
CLIENT PO#	:	PN:16-027
CLIENT PROJECT MANAGE	:	
CONTRACT	:	W9182F-16-D-0014
COOLER TEMPERATURE	:	1.2, 0.9, 1.9, 1.0, 1.7, 0.8, 1.3
DELIVERY SERVICES	:	FedEx
EDD FORMAT	:	ERIS EDD
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	Cornhusker Army Ammunition Plant
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	Check EDD, if errors, fix them or contact client (Jeff Martin703-736-4533 jmartin@hgl.com). Upload PDF & EDD to SDS. Email david.nelson@atiinc.com, seichelberger@hgl.com, jsullivan@hgl.com, Teresa.offner@atiinc.com, jspies@hgl.com to tell them report is uploaded. Email invoice to jspies@hgl.com, david.nelson@atiinc.com and seichelberger@hgl.com.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	5

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Due Date	Mailed
SL2295-1	CHAAP-21C-LGIA-DPT02	17-MAR-18 11:30	20-MAR-18		27-MAR-18	06-APR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Due Date	Mailed
SL2295-2	CHAAP-21C-LGIA-DPT04	17-MAR-18 15:00	20-MAR-18		**27-MAR-18**	06-APR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		**MS/MSD**
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Due Date	Mailed
SL2295-3	CHAAP-21C-LGIA-DPT06	17-MAR-18 13:05	20-MAR-18		**27-MAR-18**	06-APR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Due Date	Mailed
SL2295-4	CHAAP-21C-LGIA-DPT08	17-MAR-18 16:15	20-MAR-18		**27-MAR-18**	06-APR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Due Date	Mailed
SL2295-5	CHAAP-21C-LGIA-DPT10	18-MAR-18 14:00	20-MAR-18		**27-MAR-18**	06-APR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Due Date	Mailed
SL2295-6	CHAAP-21C-LGIA-DPT12	18-MAR-18 11:00	20-MAR-18		**27-MAR-18**	06-APR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Due Date	Mailed
SL2295-7	CHAAP-21C-LGIA-DPT14	18-MAR-18 12:20	20-MAR-18		**27-MAR-18**	06-APR-18

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

3/20/18

Login Number: SL2295

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web
ATI, Inc.

Project: ATI-CORN-AAP
Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2295-8	CHAAP-21C-LGIA-DPT16	18-MAR-18 17:40	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-9	CHAAP-21C-LGIA-DPT18	18-MAR-18 16:30	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-10	CHAAP-21C-LGIA-DPT20	18-MAR-18 15:20	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-11	CHAAP-21C-UGIA-DPT01	17-MAR-18 12:35	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

SL2295-12	CHAAP-21C-UGIA-DPT03	17-MAR-18 15:10	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

SL2295-13	CHAAP-21C-UGIA-DPT05	17-MAR-18 14:15	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

SL2295-14	CHAAP-21C-UGIA-DPT07	17-MAR-18 16:20	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

SL2295-15	CHAAP-21C-UGIA-DPT09	18-MAR-18 14:05	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-16	CHAAP-21C-UGIA-DPT11	18-MAR-18 11:05	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-17	CHAAP-21C-UGIA-DPT13	18-MAR-18 12:25	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

3-2018

Login Number: SL2295

Quote/Incoming: ATI-CORN-AAP

Account: ATI001 Web

ATI, Inc.

Project: ATI-CORN-AAP

Cornhusker Army Ammunition Plant

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SL2295-18	CHAAP-21C-UGIA-DPT15	18-MAR-18 17:45	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-19	CHAAP-21C-UGIA-DPT17	18-MAR-18 16:35	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-20	CHAAP-21C-UGIA-DPT19	18-MAR-18 15:25	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-21	CHAAP-21C-TB-031718	17-MAR-18 10:00	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		

SL2295-22	CHAAP-21C-LGIA-DPT106	17-MAR-18 12:00	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

SL2295-23	CHAAP-21C-EB-031718	17-MAR-18 16:30	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	31-MAR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	24-MAR-18	1L N-Amber Glass		

SL2295-24	CHAAP-21C-UGIA-DPT109	18-MAR-18 12:00	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

SL2295-25	CHAAP-21C-EB-031818	18-MAR-18 18:00	20-MAR-18		**27-MAR-18**	06-APR-18	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-APR-18	40mL Vial+HCl		
Aqueous	S	SW8330-S	25-MAR-18	1L N-Amber Glass		

Total Samples: 25 ***Total Analyses: 49***

3-20-18

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-1RA
Client ID: CHAAP-21C-LGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4718.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		51	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-1RA
Client ID: CHAAP-21C-LGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4718.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		93.1	%					

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http://www.katahdinlab.com

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4754.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	EMM	8300	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	UMM	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	UMM	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4754.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	UMM	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	UMM	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.34	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	UMM	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		89.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2DL
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4980.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	100	ug/L	200	1	200	38.	100
1,1,1-Trichloroethane	U	100	ug/L	200	1	200	40.	100
1,1,2,2-Tetrachloroethane	U	100	ug/L	200	1	200	76.	100
Freon-113	MM	13000	ug/L	200	1	200	62.	100
1,1,2-Trichloroethane	U	100	ug/L	200	1	200	66.	100
1,1-Dichloroethane	U	100	ug/L	200	1	200	42.	100
1,1-Dichloroethene	UMM	100	ug/L	200	1	200	70.	100
1,1-Dichloropropene	U	100	ug/L	200	1	200	42.	100
1,2,3-Trichlorobenzene	U	100	ug/L	200	1	200	54.	100
1,2,3-Trichloropropane	U	100	ug/L	200	1	200	38.	100
1,2,4-Trichlorobenzene	U	100	ug/L	200	1	200	74.	100
1,2,4-Trimethylbenzene	U	100	ug/L	200	1	200	38.	100
1,2-Dibromo-3-Chloropropane	U	100	ug/L	200	1	200	100	100
1,2-Dichlorobenzene	U	100	ug/L	200	1	200	30.	100
1,2-Dichloroethane	U	100	ug/L	200	1	200	40.	100
1,2-Dichloropropane	U	100	ug/L	200	1	200	50.	100
1,3,5-Trimethylbenzene	U	100	ug/L	200	1	200	40.	100
1,3-Dichlorobenzene	U	100	ug/L	200	1	200	52.	100
1,3-Dichloropropane	U	100	ug/L	200	1	200	44.	100
1,4-Dichlorobenzene	U	100	ug/L	200	1	200	48.	100
2,2-Dichloropropane	U	100	ug/L	200	1	200	50.	100
2-Butanone	U	500	ug/L	200	5	1000	260	500
2-Chlorotoluene	U	100	ug/L	200	1	200	40.	100
2-Hexanone	U	500	ug/L	200	5	1000	340	500
4-Chlorotoluene	U	100	ug/L	200	1	200	52.	100
P-Isopropyltoluene	U	100	ug/L	200	1	200	50.	100
4-Methyl-2-Pentanone	U	500	ug/L	200	5	1000	260	500
Acetone	U	500	ug/L	200	5	1000	440	500
Benzene	U	100	ug/L	200	1	200	52.	100
Bromobenzene	U	100	ug/L	200	1	200	48.	100
Bromoform	U	100	ug/L	200	1	200	46.	100
Bromomethane	UMM	200	ug/L	200	2	400	98.	200
Carbon Disulfide	U	100	ug/L	200	1	200	50.	100
Carbon Tetrachloride	U	100	ug/L	200	1	200	44.	100
Chlorobenzene	U	100	ug/L	200	1	200	44.	100

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2DL
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4980.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	100	ug/L	200	1	200	42.	100
Dibromochloromethane	U	100	ug/L	200	1	200	60.	100
Chloroethane	UMM	200	ug/L	200	2	400	110	200
Chloroform	U	100	ug/L	200	1	200	64.	100
Chloromethane	U	200	ug/L	200	2	400	72.	200
cis-1,2-Dichloroethene	U	100	ug/L	200	1	200	42.	100
cis-1,3-Dichloropropene	U	100	ug/L	200	1	200	38.	100
Dibromomethane	U	100	ug/L	200	1	200	92.	100
Bromodichloromethane	U	100	ug/L	200	1	200	66.	100
Dichlorodifluoromethane	UMM	200	ug/L	200	2	400	48.	200
Ethylbenzene	U	100	ug/L	200	1	200	42.	100
1,2-Dibromoethane	U	100	ug/L	200	1	200	44.	100
Hexachlorobutadiene	U	150	ug/L	200	1	200	100	150
Isopropylbenzene	U	100	ug/L	200	1	200	46.	100
Methyl tert-butyl Ether	U	100	ug/L	200	1	200	72.	100
Methylene Chloride	U	500	ug/L	200	5	1000	230	500
m+p-Xylenes	U	200	ug/L	200	2	400	120	200
Naphthalene	U	100	ug/L	200	1	200	60.	100
N-Butylbenzene	U	100	ug/L	200	1	200	46.	100
N-Propylbenzene	U	100	ug/L	200	1	200	52.	100
o-Xylene	U	100	ug/L	200	1	200	50.	100
sec-Butylbenzene	U	100	ug/L	200	1	200	42.	100
Styrene	U	100	ug/L	200	1	200	46.	100
tert-Butylbenzene	U	100	ug/L	200	1	200	62.	100
Tetrachloroethene	U	100	ug/L	200	1	200	80.	100
Toluene	U	100	ug/L	200	1	200	54.	100
trans-1,2-Dichloroethene	U	100	ug/L	200	1	200	50.	100
trans-1,3-Dichloropropene	U	100	ug/L	200	1	200	40.	100
Trichloroethene	U	100	ug/L	200	1	200	56.	100
Trichlorofluoromethane	UMM	200	ug/L	200	2	400	48.	200
Vinyl Chloride	U	200	ug/L	200	2	400	50.	200
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		99.7	%					
P-Bromofluorobenzene		93.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-3RA
Client ID: CHAAP-21C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4719.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-3RA
Client ID: CHAAP-21C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4719.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		98.6	%					
P-Bromofluorobenzene		93.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4DL
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4746.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	10	ug/L	20	1	20.	3.8	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
Freon-113		2800	ug/L	20	1	20.	6.2	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
1,1-Dichloropropene	U	10	ug/L	20	1	20.	4.2	10.
1,2,3-Trichlorobenzene	U	10	ug/L	20	1	20.	5.4	10.
1,2,3-Trichloropropane	U	10	ug/L	20	1	20.	3.8	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
1,2,4-Trimethylbenzene	U	10	ug/L	20	1	20.	3.8	10.
1,2-Dibromo-3-Chloropropane	U	10	ug/L	20	1	20.	10.	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
1,3,5-Trimethylbenzene	U	10	ug/L	20	1	20.	4.0	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,3-Dichloropropane	U	10	ug/L	20	1	20.	4.4	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
2,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
2-Butanone	U	50	ug/L	20	5	100	26.	50.
2-Chlorotoluene	U	10	ug/L	20	1	20.	4.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
4-Chlorotoluene	U	10	ug/L	20	1	20.	5.2	10.
P-Isopropyltoluene	U	10	ug/L	20	1	20.	5.0	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
Acetone	U	50	ug/L	20	5	100	44.	50.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
Bromobenzene	U	10	ug/L	20	1	20.	4.8	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4DL
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4746.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	10	ug/L	20	1	20.	4.2	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Dibromomethane	U	10	ug/L	20	1	20.	9.2	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
Dichlorodifluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
Hexachlorobutadiene	U	15	ug/L	20	1	20.	10.	15.
Isopropylbenzene	U	10	ug/L	20	1	20.	4.6	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
m+p-Xylenes	U	20	ug/L	20	2	40.	12.	20.
Naphthalene	U	10	ug/L	20	1	20.	6.0	10.
N-Butylbenzene	U	10	ug/L	20	1	20.	4.6	10.
N-Propylbenzene	U	10	ug/L	20	1	20.	5.2	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
sec-Butylbenzene	U	10	ug/L	20	1	20.	4.2	10.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
tert-Butylbenzene	U	10	ug/L	20	1	20.	6.2	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
trans-1,2-Dichloroethene	U	10	ug/L	20	1	20.	5.0	10.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		93.0	%					

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Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4RA
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4720.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	1900	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4RA
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4720.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		93.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4896.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		11	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4896.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		114.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		96.8	%					
P-Bromofluorobenzene	*	80.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5RA2
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4750.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		8.6	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5RA2
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4750.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.9	%					
P-Bromofluorobenzene		95.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6DL
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4744.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	50	ug/L	100	1	100	19.	50.
1,1,1-Trichloroethane	U	50	ug/L	100	1	100	20.	50.
1,1,2,2-Tetrachloroethane	U	50	ug/L	100	1	100	38.	50.
Freon-113		4800	ug/L	100	1	100	31.	50.
1,1,2-Trichloroethane	U	50	ug/L	100	1	100	33.	50.
1,1-Dichloroethane	U	50	ug/L	100	1	100	21.	50.
1,1-Dichloroethene	U	50	ug/L	100	1	100	35.	50.
1,1-Dichloropropene	U	50	ug/L	100	1	100	21.	50.
1,2,3-Trichlorobenzene	U	50	ug/L	100	1	100	27.	50.
1,2,3-Trichloropropane	U	50	ug/L	100	1	100	19.	50.
1,2,4-Trichlorobenzene	U	50	ug/L	100	1	100	37.	50.
1,2,4-Trimethylbenzene	U	50	ug/L	100	1	100	19.	50.
1,2-Dibromo-3-Chloropropane	U	50	ug/L	100	1	100	50.	50.
1,2-Dichlorobenzene	U	50	ug/L	100	1	100	15.	50.
1,2-Dichloroethane	U	50	ug/L	100	1	100	20.	50.
1,2-Dichloropropane	U	50	ug/L	100	1	100	25.	50.
1,3,5-Trimethylbenzene	U	50	ug/L	100	1	100	20.	50.
1,3-Dichlorobenzene	U	50	ug/L	100	1	100	26.	50.
1,3-Dichloropropane	U	50	ug/L	100	1	100	22.	50.
1,4-Dichlorobenzene	U	50	ug/L	100	1	100	24.	50.
2,2-Dichloropropane	U	50	ug/L	100	1	100	25.	50.
2-Butanone	U	250	ug/L	100	5	500	130	250
2-Chlorotoluene	U	50	ug/L	100	1	100	20.	50.
2-Hexanone	U	250	ug/L	100	5	500	170	250
4-Chlorotoluene	U	50	ug/L	100	1	100	26.	50.
P-Isopropyltoluene	U	50	ug/L	100	1	100	25.	50.
4-Methyl-2-Pentanone	U	250	ug/L	100	5	500	130	250
Acetone	U	250	ug/L	100	5	500	220	250
Benzene	U	50	ug/L	100	1	100	26.	50.
Bromobenzene	U	50	ug/L	100	1	100	24.	50.
Bromoform	U	50	ug/L	100	1	100	23.	50.
Bromomethane	U	100	ug/L	100	2	200	49.	100
Carbon Disulfide	U	50	ug/L	100	1	100	25.	50.
Carbon Tetrachloride	U	50	ug/L	100	1	100	22.	50.
Chlorobenzene	U	50	ug/L	100	1	100	22.	50.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6DL
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4744.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	50	ug/L	100	1	100	21.	50.
Dibromochloromethane	U	50	ug/L	100	1	100	30.	50.
Chloroethane	U	100	ug/L	100	2	200	55.	100
Chloroform	U	50	ug/L	100	1	100	32.	50.
Chloromethane	U	100	ug/L	100	2	200	36.	100
cis-1,2-Dichloroethene	U	50	ug/L	100	1	100	21.	50.
cis-1,3-Dichloropropene	U	50	ug/L	100	1	100	19.	50.
Dibromomethane	U	50	ug/L	100	1	100	46.	50.
Bromodichloromethane	U	50	ug/L	100	1	100	33.	50.
Dichlorodifluoromethane	U	100	ug/L	100	2	200	24.	100
Ethylbenzene	U	50	ug/L	100	1	100	21.	50.
1,2-Dibromoethane	U	50	ug/L	100	1	100	22.	50.
Hexachlorobutadiene	U	75	ug/L	100	1	100	52.	75.
Isopropylbenzene	U	50	ug/L	100	1	100	23.	50.
Methyl tert-butyl Ether	U	50	ug/L	100	1	100	36.	50.
Methylene Chloride	U	250	ug/L	100	5	500	110	250
m+p-Xylenes	U	100	ug/L	100	2	200	59.	100
Naphthalene	U	50	ug/L	100	1	100	30.	50.
N-Butylbenzene	U	50	ug/L	100	1	100	23.	50.
N-Propylbenzene	U	50	ug/L	100	1	100	26.	50.
o-Xylene	U	50	ug/L	100	1	100	25.	50.
sec-Butylbenzene	U	50	ug/L	100	1	100	21.	50.
Styrene	U	50	ug/L	100	1	100	23.	50.
tert-Butylbenzene	U	50	ug/L	100	1	100	31.	50.
Tetrachloroethene	U	50	ug/L	100	1	100	40.	50.
Toluene	U	50	ug/L	100	1	100	27.	50.
trans-1,2-Dichloroethene	U	50	ug/L	100	1	100	25.	50.
trans-1,3-Dichloropropene	U	50	ug/L	100	1	100	20.	50.
Trichloroethene	U	50	ug/L	100	1	100	28.	50.
Trichlorofluoromethane	U	100	ug/L	100	2	200	24.	100
Vinyl Chloride	U	100	ug/L	100	2	200	25.	100
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		91.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6RA
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4722.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	3400	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6RA
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4722.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.53	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		116.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		90.5	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4723.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		43	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4723.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		115.	%					
1,2-Dichloroethane-d4	*	122.	%					
Toluene-d8		99.8	%					
P-Bromofluorobenzene		91.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7RA
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4751.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		42	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7RA
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4751.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	128.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		92.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-8RA
Client ID: CHAAP-21C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4972.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-8RA
Client ID: CHAAP-21C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4972.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		108.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		99.4	%					
P-Bromofluorobenzene		94.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-9RA
Client ID: CHAAP-21C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4973.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	J	4.3	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-9RA
Client ID: CHAAP-21C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4973.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		93.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4726.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	2700	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4726.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		119.	%					
1,2-Dichloroethane-d4	*	127.	%					
Toluene-d8		99.9	%					
P-Bromofluorobenzene		91.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10DL
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4745.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	25	ug/L	50	1	50.	9.5	25.
1,1,1-Trichloroethane	U	25	ug/L	50	1	50.	10.	25.
1,1,2,2-Tetrachloroethane	U	25	ug/L	50	1	50.	19.	25.
Freon-113		3300	ug/L	50	1	50.	16.	25.
1,1,2-Trichloroethane	U	25	ug/L	50	1	50.	16.	25.
1,1-Dichloroethane	U	25	ug/L	50	1	50.	10.	25.
1,1-Dichloroethene	U	25	ug/L	50	1	50.	18.	25.
1,1-Dichloropropene	U	25	ug/L	50	1	50.	10.	25.
1,2,3-Trichlorobenzene	U	25	ug/L	50	1	50.	14.	25.
1,2,3-Trichloropropane	U	25	ug/L	50	1	50.	9.5	25.
1,2,4-Trichlorobenzene	U	25	ug/L	50	1	50.	18.	25.
1,2,4-Trimethylbenzene	U	25	ug/L	50	1	50.	9.5	25.
1,2-Dibromo-3-Chloropropane	U	25	ug/L	50	1	50.	25.	25.
1,2-Dichlorobenzene	U	25	ug/L	50	1	50.	7.5	25.
1,2-Dichloroethane	U	25	ug/L	50	1	50.	10.	25.
1,2-Dichloropropane	U	25	ug/L	50	1	50.	12.	25.
1,3,5-Trimethylbenzene	U	25	ug/L	50	1	50.	10.	25.
1,3-Dichlorobenzene	U	25	ug/L	50	1	50.	13.	25.
1,3-Dichloropropane	U	25	ug/L	50	1	50.	11.	25.
1,4-Dichlorobenzene	U	25	ug/L	50	1	50.	12.	25.
2,2-Dichloropropane	U	25	ug/L	50	1	50.	12.	25.
2-Butanone	U	120	ug/L	50	5	250	66.	120
2-Chlorotoluene	U	25	ug/L	50	1	50.	10.	25.
2-Hexanone	U	120	ug/L	50	5	250	85.	120
4-Chlorotoluene	U	25	ug/L	50	1	50.	13.	25.
P-Isopropyltoluene	U	25	ug/L	50	1	50.	12.	25.
4-Methyl-2-Pentanone	U	120	ug/L	50	5	250	66.	120
Acetone	U	120	ug/L	50	5	250	110	120
Benzene	U	25	ug/L	50	1	50.	13.	25.
Bromobenzene	U	25	ug/L	50	1	50.	12.	25.
Bromoform	U	25	ug/L	50	1	50.	12.	25.
Bromomethane	U	50	ug/L	50	2	100	24.	50.
Carbon Disulfide	U	25	ug/L	50	1	50.	12.	25.
Carbon Tetrachloride	U	25	ug/L	50	1	50.	11.	25.
Chlorobenzene	U	25	ug/L	50	1	50.	11.	25.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10DL
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4745.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	25	ug/L	50	1	50.	10.	25.
Dibromochloromethane	U	25	ug/L	50	1	50.	15.	25.
Chloroethane	U	50	ug/L	50	2	100	28.	50.
Chloroform	U	25	ug/L	50	1	50.	16.	25.
Chloromethane	U	50	ug/L	50	2	100	18.	50.
cis-1,2-Dichloroethene	U	25	ug/L	50	1	50.	10.	25.
cis-1,3-Dichloropropene	U	25	ug/L	50	1	50.	9.5	25.
Dibromomethane	U	25	ug/L	50	1	50.	23.	25.
Bromodichloromethane	U	25	ug/L	50	1	50.	16.	25.
Dichlorodifluoromethane	U	50	ug/L	50	2	100	12.	50.
Ethylbenzene	U	25	ug/L	50	1	50.	10.	25.
1,2-Dibromoethane	U	25	ug/L	50	1	50.	11.	25.
Hexachlorobutadiene	U	38	ug/L	50	1	50.	26.	38.
Isopropylbenzene	U	25	ug/L	50	1	50.	12.	25.
Methyl tert-butyl Ether	U	25	ug/L	50	1	50.	18.	25.
Methylene Chloride	U	120	ug/L	50	5	250	56.	120
m+p-Xylenes	U	50	ug/L	50	2	100	30.	50.
Naphthalene	U	25	ug/L	50	1	50.	15.	25.
N-Butylbenzene	U	25	ug/L	50	1	50.	12.	25.
N-Propylbenzene	U	25	ug/L	50	1	50.	13.	25.
o-Xylene	U	25	ug/L	50	1	50.	12.	25.
sec-Butylbenzene	U	25	ug/L	50	1	50.	10.	25.
Styrene	U	25	ug/L	50	1	50.	12.	25.
tert-Butylbenzene	U	25	ug/L	50	1	50.	16.	25.
Tetrachloroethene	U	25	ug/L	50	1	50.	20.	25.
Toluene	U	25	ug/L	50	1	50.	14.	25.
trans-1,2-Dichloroethene	U	25	ug/L	50	1	50.	12.	25.
trans-1,3-Dichloropropene	U	25	ug/L	50	1	50.	10.	25.
Trichloroethene	U	25	ug/L	50	1	50.	14.	25.
Trichlorofluoromethane	U	50	ug/L	50	2	100	12.	50.
Vinyl Chloride	U	50	ug/L	50	2	100	12.	50.
Dibromofluoromethane		115.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		92.5	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4727.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	1400	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4727.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		117.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.2	%					
P-Bromofluorobenzene		91.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11DL
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4747.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	10	ug/L	20	1	20.	3.8	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
Freon-113		1700	ug/L	20	1	20.	6.2	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
1,1-Dichloropropene	U	10	ug/L	20	1	20.	4.2	10.
1,2,3-Trichlorobenzene	U	10	ug/L	20	1	20.	5.4	10.
1,2,3-Trichloropropane	U	10	ug/L	20	1	20.	3.8	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
1,2,4-Trimethylbenzene	U	10	ug/L	20	1	20.	3.8	10.
1,2-Dibromo-3-Chloropropane	U	10	ug/L	20	1	20.	10.	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
1,3,5-Trimethylbenzene	U	10	ug/L	20	1	20.	4.0	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,3-Dichloropropane	U	10	ug/L	20	1	20.	4.4	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
2,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
2-Butanone	U	50	ug/L	20	5	100	26.	50.
2-Chlorotoluene	U	10	ug/L	20	1	20.	4.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
4-Chlorotoluene	U	10	ug/L	20	1	20.	5.2	10.
P-Isopropyltoluene	U	10	ug/L	20	1	20.	5.0	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
Acetone	U	50	ug/L	20	5	100	44.	50.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
Bromobenzene	U	10	ug/L	20	1	20.	4.8	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11DL
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4747.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	10	ug/L	20	1	20.	4.2	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Dibromomethane	U	10	ug/L	20	1	20.	9.2	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
Dichlorodifluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
Hexachlorobutadiene	U	15	ug/L	20	1	20.	10.	15.
Isopropylbenzene	U	10	ug/L	20	1	20.	4.6	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
m+p-Xylenes	U	20	ug/L	20	2	40.	12.	20.
Naphthalene	U	10	ug/L	20	1	20.	6.0	10.
N-Butylbenzene	U	10	ug/L	20	1	20.	4.6	10.
N-Propylbenzene	U	10	ug/L	20	1	20.	5.2	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
sec-Butylbenzene	U	10	ug/L	20	1	20.	4.2	10.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
tert-Butylbenzene	U	10	ug/L	20	1	20.	6.2	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
trans-1,2-Dichloroethene	U	10	ug/L	20	1	20.	5.0	10.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		91.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4728.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	450	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4728.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		91.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12DL
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4749.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.5	ug/L	5	1	5.0	0.95	2.5
1,1,1-Trichloroethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,1,2,2-Tetrachloroethane	U	2.5	ug/L	5	1	5.0	1.9	2.5
Freon-113		380	ug/L	5	1	5.0	1.6	2.5
1,1,2-Trichloroethane	U	2.5	ug/L	5	1	5.0	1.6	2.5
1,1-Dichloroethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,1-Dichloroethene	U	2.5	ug/L	5	1	5.0	1.8	2.5
1,1-Dichloropropene	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,2,3-Trichlorobenzene	U	2.5	ug/L	5	1	5.0	1.4	2.5
1,2,3-Trichloropropane	U	2.5	ug/L	5	1	5.0	0.95	2.5
1,2,4-Trichlorobenzene	U	2.5	ug/L	5	1	5.0	1.8	2.5
1,2,4-Trimethylbenzene	U	2.5	ug/L	5	1	5.0	0.95	2.5
1,2-Dibromo-3-Chloropropane	U	2.5	ug/L	5	1	5.0	2.5	2.5
1,2-Dichlorobenzene	U	2.5	ug/L	5	1	5.0	0.75	2.5
1,2-Dichloroethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,2-Dichloropropane	U	2.5	ug/L	5	1	5.0	1.2	2.5
1,3,5-Trimethylbenzene	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,3-Dichlorobenzene	U	2.5	ug/L	5	1	5.0	1.3	2.5
1,3-Dichloropropane	U	2.5	ug/L	5	1	5.0	1.1	2.5
1,4-Dichlorobenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
2,2-Dichloropropane	U	2.5	ug/L	5	1	5.0	1.2	2.5
2-Butanone	U	12	ug/L	5	5	25.	6.6	12.
2-Chlorotoluene	U	2.5	ug/L	5	1	5.0	1.0	2.5
2-Hexanone	U	12	ug/L	5	5	25.	8.5	12.
4-Chlorotoluene	U	2.5	ug/L	5	1	5.0	1.3	2.5
P-Isopropyltoluene	U	2.5	ug/L	5	1	5.0	1.2	2.5
4-Methyl-2-Pentanone	U	12	ug/L	5	5	25.	6.6	12.
Acetone	U	12	ug/L	5	5	25.	11.	12.
Benzene	U	2.5	ug/L	5	1	5.0	1.3	2.5
Bromobenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
Bromoform	U	2.5	ug/L	5	1	5.0	1.2	2.5
Bromomethane	U	5.0	ug/L	5	2	10.	2.4	5.0
Carbon Disulfide	U	2.5	ug/L	5	1	5.0	1.2	2.5
Carbon Tetrachloride	U	2.5	ug/L	5	1	5.0	1.1	2.5
Chlorobenzene	U	2.5	ug/L	5	1	5.0	1.1	2.5

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12DL
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4749.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
Dibromochloromethane	U	2.5	ug/L	5	1	5.0	1.5	2.5
Chloroethane	U	5.0	ug/L	5	2	10.	2.8	5.0
Chloroform	U	2.5	ug/L	5	1	5.0	1.6	2.5
Chloromethane	U	5.0	ug/L	5	2	10.	1.8	5.0
cis-1,2-Dichloroethene	U	2.5	ug/L	5	1	5.0	1.0	2.5
cis-1,3-Dichloropropene	U	2.5	ug/L	5	1	5.0	0.95	2.5
Dibromomethane	U	2.5	ug/L	5	1	5.0	2.3	2.5
Bromodichloromethane	U	2.5	ug/L	5	1	5.0	1.6	2.5
Dichlorodifluoromethane	U	5.0	ug/L	5	2	10.	1.2	5.0
Ethylbenzene	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,2-Dibromoethane	U	2.5	ug/L	5	1	5.0	1.1	2.5
Hexachlorobutadiene	U	3.8	ug/L	5	1	5.0	2.6	3.8
Isopropylbenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
Methyl tert-butyl Ether	U	2.5	ug/L	5	1	5.0	1.8	2.5
Methylene Chloride	U	12	ug/L	5	5	25.	5.6	12.
m+p-Xylenes	U	5.0	ug/L	5	2	10.	3.0	5.0
Naphthalene	U	2.5	ug/L	5	1	5.0	1.5	2.5
N-Butylbenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
N-Propylbenzene	U	2.5	ug/L	5	1	5.0	1.3	2.5
o-Xylene	U	2.5	ug/L	5	1	5.0	1.2	2.5
sec-Butylbenzene	U	2.5	ug/L	5	1	5.0	1.0	2.5
Styrene	U	2.5	ug/L	5	1	5.0	1.2	2.5
tert-Butylbenzene	U	2.5	ug/L	5	1	5.0	1.6	2.5
Tetrachloroethene	U	2.5	ug/L	5	1	5.0	2.0	2.5
Toluene	U	2.5	ug/L	5	1	5.0	1.4	2.5
trans-1,2-Dichloroethene	U	2.5	ug/L	5	1	5.0	1.2	2.5
trans-1,3-Dichloropropene	U	2.5	ug/L	5	1	5.0	1.0	2.5
Trichloroethene	U	2.5	ug/L	5	1	5.0	1.4	2.5
Trichlorofluoromethane	U	5.0	ug/L	5	2	10.	1.2	5.0
Vinyl Chloride	U	5.0	ug/L	5	2	10.	1.2	5.0
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	127.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		92.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-13
Client ID: CHAAP-21C-UGIA-DPT05
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4944.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	J	0.46	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-13
Client ID: CHAAP-21C-UGIA-DPT05
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4944.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		117.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		94.3	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4730.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	1800	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4730.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		119.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		92.3	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14DL
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4748.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	10	ug/L	20	1	20.	3.8	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
Freon-113		1800	ug/L	20	1	20.	6.2	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
1,1-Dichloropropene	U	10	ug/L	20	1	20.	4.2	10.
1,2,3-Trichlorobenzene	U	10	ug/L	20	1	20.	5.4	10.
1,2,3-Trichloropropane	U	10	ug/L	20	1	20.	3.8	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
1,2,4-Trimethylbenzene	U	10	ug/L	20	1	20.	3.8	10.
1,2-Dibromo-3-Chloropropane	U	10	ug/L	20	1	20.	10.	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
1,3,5-Trimethylbenzene	U	10	ug/L	20	1	20.	4.0	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,3-Dichloropropane	U	10	ug/L	20	1	20.	4.4	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
2,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
2-Butanone	U	50	ug/L	20	5	100	26.	50.
2-Chlorotoluene	U	10	ug/L	20	1	20.	4.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
4-Chlorotoluene	U	10	ug/L	20	1	20.	5.2	10.
P-Isopropyltoluene	U	10	ug/L	20	1	20.	5.0	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
Acetone	U	50	ug/L	20	5	100	44.	50.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
Bromobenzene	U	10	ug/L	20	1	20.	4.8	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14DL
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4748.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	10	ug/L	20	1	20.	4.2	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Dibromomethane	U	10	ug/L	20	1	20.	9.2	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
Dichlorodifluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
Hexachlorobutadiene	U	15	ug/L	20	1	20.	10.	15.
Isopropylbenzene	U	10	ug/L	20	1	20.	4.6	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
m+p-Xylenes	U	20	ug/L	20	2	40.	12.	20.
Naphthalene	U	10	ug/L	20	1	20.	6.0	10.
N-Butylbenzene	U	10	ug/L	20	1	20.	4.6	10.
N-Propylbenzene	U	10	ug/L	20	1	20.	5.2	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
sec-Butylbenzene	U	10	ug/L	20	1	20.	4.2	10.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
tert-Butylbenzene	U	10	ug/L	20	1	20.	6.2	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
trans-1,2-Dichloroethene	U	10	ug/L	20	1	20.	5.0	10.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		90.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-15
Client ID: CHAAP-21C-UGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4936.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		32	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-15
Client ID: CHAAP-21C-UGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4936.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		94.9	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4937.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	650	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4937.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		94.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16DL
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4975.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,1,1-Trichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	3.8	5.0
Freon-113		580	ug/L	10	1	10.	3.1	5.0
1,1,2-Trichloroethane	U	5.0	ug/L	10	1	10.	3.3	5.0
1,1-Dichloroethane	U	5.0	ug/L	10	1	10.	2.1	5.0
1,1-Dichloroethene	U	5.0	ug/L	10	1	10.	3.5	5.0
1,1-Dichloropropene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2,3-Trichlorobenzene	U	5.0	ug/L	10	1	10.	2.7	5.0
1,2,3-Trichloropropane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2,4-Trichlorobenzene	U	5.0	ug/L	10	1	10.	3.7	5.0
1,2,4-Trimethylbenzene	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2-Dibromo-3-Chloropropane	U	5.0	ug/L	10	1	10.	5.0	5.0
1,2-Dichlorobenzene	U	5.0	ug/L	10	1	10.	1.5	5.0
1,2-Dichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
1,3,5-Trimethylbenzene	U	5.0	ug/L	10	1	10.	2.0	5.0
1,3-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,3-Dichloropropane	U	5.0	ug/L	10	1	10.	2.2	5.0
1,4-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
2,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
2-Butanone	U	25	ug/L	10	5	50.	13.	25.
2-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.0	5.0
2-Hexanone	U	25	ug/L	10	5	50.	17.	25.
4-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.6	5.0
P-Isopropyltoluene	U	5.0	ug/L	10	1	10.	2.5	5.0
4-Methyl-2-Pentanone	U	25	ug/L	10	5	50.	13.	25.
Acetone	U	25	ug/L	10	5	50.	22.	25.
Benzene	U	5.0	ug/L	10	1	10.	2.6	5.0
Bromobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
Bromoform	U	5.0	ug/L	10	1	10.	2.3	5.0
Bromomethane	U	10	ug/L	10	2	20.	4.9	10.
Carbon Disulfide	U	5.0	ug/L	10	1	10.	2.5	5.0
Carbon Tetrachloride	U	5.0	ug/L	10	1	10.	2.2	5.0
Chlorobenzene	U	5.0	ug/L	10	1	10.	2.2	5.0

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16DL
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4975.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	5.0	ug/L	10	1	10.	2.1	5.0
Dibromochloromethane	U	5.0	ug/L	10	1	10.	3.0	5.0
Chloroethane	U	10	ug/L	10	2	20.	5.5	10.
Chloroform	U	5.0	ug/L	10	1	10.	3.2	5.0
Chloromethane	U	10	ug/L	10	2	20.	3.6	10.
cis-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.1	5.0
cis-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	1.9	5.0
Dibromomethane	U	5.0	ug/L	10	1	10.	4.6	5.0
Bromodichloromethane	U	5.0	ug/L	10	1	10.	3.3	5.0
Dichlorodifluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Ethylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2-Dibromoethane	U	5.0	ug/L	10	1	10.	2.2	5.0
Hexachlorobutadiene	U	7.5	ug/L	10	1	10.	5.2	7.5
Isopropylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
Methyl tert-butyl Ether	U	5.0	ug/L	10	1	10.	3.6	5.0
Methylene Chloride	U	25	ug/L	10	5	50.	11.	25.
m+p-Xylenes	U	10	ug/L	10	2	20.	5.9	10.
Naphthalene	U	5.0	ug/L	10	1	10.	3.0	5.0
N-Butylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
N-Propylbenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
o-Xylene	U	5.0	ug/L	10	1	10.	2.5	5.0
sec-Butylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
Styrene	U	5.0	ug/L	10	1	10.	2.3	5.0
tert-Butylbenzene	U	5.0	ug/L	10	1	10.	3.1	5.0
Tetrachloroethene	U	5.0	ug/L	10	1	10.	4.0	5.0
Toluene	U	5.0	ug/L	10	1	10.	2.7	5.0
trans-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.5	5.0
trans-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	2.0	5.0
Trichloroethene	U	5.0	ug/L	10	1	10.	2.8	5.0
Trichlorofluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Vinyl Chloride	U	10	ug/L	10	2	20.	2.5	10.
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		99.3	%					
P-Bromofluorobenzene		94.9	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-17
Client ID: CHAAP-21C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4938.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		23	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-17
Client ID: CHAAP-21C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4938.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		95.1	%					

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-18
Client ID: CHAAP-21C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4939.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	J	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-18
Client ID: CHAAP-21C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4939.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		99.1	%					
P-Bromofluorobenzene		93.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4940.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	330	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4940.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		116.	%					
1,2-Dichloroethane-d4		119.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		93.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19DL
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4976.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.0	ug/L	4	1	4.0	0.76	2.0
1,1,1-Trichloroethane	U	2.0	ug/L	4	1	4.0	0.80	2.0
1,1,2,2-Tetrachloroethane	U	2.0	ug/L	4	1	4.0	1.5	2.0
Freon-113		260	ug/L	4	1	4.0	1.2	2.0
1,1,2-Trichloroethane	U	2.0	ug/L	4	1	4.0	1.3	2.0
1,1-Dichloroethane	U	2.0	ug/L	4	1	4.0	0.84	2.0
1,1-Dichloroethene	U	2.0	ug/L	4	1	4.0	1.4	2.0
1,1-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.84	2.0
1,2,3-Trichlorobenzene	U	2.0	ug/L	4	1	4.0	1.1	2.0
1,2,3-Trichloropropane	U	2.0	ug/L	4	1	4.0	0.76	2.0
1,2,4-Trichlorobenzene	U	2.0	ug/L	4	1	4.0	1.5	2.0
1,2,4-Trimethylbenzene	U	2.0	ug/L	4	1	4.0	0.76	2.0
1,2-Dibromo-3-Chloropropane	U	2.0	ug/L	4	1	4.0	2.0	2.0
1,2-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	0.60	2.0
1,2-Dichloroethane	U	2.0	ug/L	4	1	4.0	0.80	2.0
1,2-Dichloropropane	U	2.0	ug/L	4	1	4.0	1.0	2.0
1,3,5-Trimethylbenzene	U	2.0	ug/L	4	1	4.0	0.80	2.0
1,3-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
1,3-Dichloropropane	U	2.0	ug/L	4	1	4.0	0.88	2.0
1,4-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	0.96	2.0
2,2-Dichloropropane	U	2.0	ug/L	4	1	4.0	1.0	2.0
2-Butanone	U	10	ug/L	4	5	20.	5.2	10.
2-Chlorotoluene	U	2.0	ug/L	4	1	4.0	0.80	2.0
2-Hexanone	U	10	ug/L	4	5	20.	6.8	10.
4-Chlorotoluene	U	2.0	ug/L	4	1	4.0	1.0	2.0
P-Isopropyltoluene	U	2.0	ug/L	4	1	4.0	1.0	2.0
4-Methyl-2-Pentanone	U	10	ug/L	4	5	20.	5.3	10.
Acetone	U	10	ug/L	4	5	20.	8.8	10.
Benzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
Bromobenzene	U	2.0	ug/L	4	1	4.0	0.96	2.0
Bromoform	U	2.0	ug/L	4	1	4.0	0.92	2.0
Bromomethane	U	4.0	ug/L	4	2	8.0	2.0	4.0
Carbon Disulfide	U	2.0	ug/L	4	1	4.0	1.0	2.0
Carbon Tetrachloride	U	2.0	ug/L	4	1	4.0	0.88	2.0
Chlorobenzene	U	2.0	ug/L	4	1	4.0	0.88	2.0

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19DL
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4976.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	2.0	ug/L	4	1	4.0	0.84	2.0
Dibromochloromethane	U	2.0	ug/L	4	1	4.0	1.2	2.0
Chloroethane	U	4.0	ug/L	4	2	8.0	2.2	4.0
Chloroform	U	2.0	ug/L	4	1	4.0	1.3	2.0
Chloromethane	U	4.0	ug/L	4	2	8.0	1.4	4.0
cis-1,2-Dichloroethene	U	2.0	ug/L	4	1	4.0	0.84	2.0
cis-1,3-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.76	2.0
Dibromomethane	U	2.0	ug/L	4	1	4.0	1.8	2.0
Bromodichloromethane	U	2.0	ug/L	4	1	4.0	1.3	2.0
Dichlorodifluoromethane	U	4.0	ug/L	4	2	8.0	0.96	4.0
Ethylbenzene	U	2.0	ug/L	4	1	4.0	0.84	2.0
1,2-Dibromoethane	U	2.0	ug/L	4	1	4.0	0.88	2.0
Hexachlorobutadiene	U	3.0	ug/L	4	1	4.0	2.1	3.0
Isopropylbenzene	U	2.0	ug/L	4	1	4.0	0.92	2.0
Methyl tert-butyl Ether	U	2.0	ug/L	4	1	4.0	1.4	2.0
Methylene Chloride	U	10	ug/L	4	5	20.	4.5	10.
m+p-Xylenes	U	4.0	ug/L	4	2	8.0	2.4	4.0
Naphthalene	U	2.0	ug/L	4	1	4.0	1.2	2.0
N-Butylbenzene	U	2.0	ug/L	4	1	4.0	0.92	2.0
N-Propylbenzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
o-Xylene	U	2.0	ug/L	4	1	4.0	1.0	2.0
sec-Butylbenzene	U	2.0	ug/L	4	1	4.0	0.84	2.0
Styrene	U	2.0	ug/L	4	1	4.0	0.92	2.0
tert-Butylbenzene	U	2.0	ug/L	4	1	4.0	1.2	2.0
Tetrachloroethene	U	2.0	ug/L	4	1	4.0	1.6	2.0
Toluene	U	2.0	ug/L	4	1	4.0	1.1	2.0
trans-1,2-Dichloroethene	U	2.0	ug/L	4	1	4.0	1.0	2.0
trans-1,3-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.80	2.0
Trichloroethene	U	2.0	ug/L	4	1	4.0	1.1	2.0
Trichlorofluoromethane	U	4.0	ug/L	4	2	8.0	0.96	4.0
Vinyl Chloride	U	4.0	ug/L	4	2	8.0	1.0	4.0
Dibromofluoromethane		114.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4941.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	200	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4941.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		115.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		93.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20DL
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4977.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	2	1	2.0	0.38	1.0
1,1,1-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	2	1	2.0	0.76	1.0
Freon-113		140	ug/L	2	1	2.0	0.62	1.0
1,1,2-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
1,1-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.42	1.0
1,1-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.70	1.0
1,1-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.42	1.0
1,2,3-Trichlorobenzene	U	1.0	ug/L	2	1	2.0	0.54	1.0
1,2,3-Trichloropropane	U	1.0	ug/L	2	1	2.0	0.38	1.0
1,2,4-Trichlorobenzene	U	1.0	ug/L	2	1	2.0	0.74	1.0
1,2,4-Trimethylbenzene	U	1.0	ug/L	2	1	2.0	0.38	1.0
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	2	1	2.0	1.0	1.0
1,2-Dichlorobenzene	U	1.0	ug/L	2	1	2.0	0.30	1.0
1,2-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,2-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.50	1.0
1,3,5-Trimethylbenzene	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,3-Dichlorobenzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
1,3-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.44	1.0
1,4-Dichlorobenzene	U	1.0	ug/L	2	1	2.0	0.48	1.0
2,2-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.50	1.0
2-Butanone	U	5.0	ug/L	2	5	10.	2.6	5.0
2-Chlorotoluene	U	1.0	ug/L	2	1	2.0	0.40	1.0
2-Hexanone	U	5.0	ug/L	2	5	10.	3.4	5.0
4-Chlorotoluene	U	1.0	ug/L	2	1	2.0	0.52	1.0
P-Isopropyltoluene	U	1.0	ug/L	2	1	2.0	0.50	1.0
4-Methyl-2-Pentanone	U	5.0	ug/L	2	5	10.	2.6	5.0
Acetone	U	5.0	ug/L	2	5	10.	4.4	5.0
Benzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
Bromobenzene	U	1.0	ug/L	2	1	2.0	0.48	1.0
Bromoform	U	1.0	ug/L	2	1	2.0	0.46	1.0
Bromomethane	U	2.0	ug/L	2	2	4.0	0.98	2.0
Carbon Disulfide	U	1.0	ug/L	2	1	2.0	0.50	1.0
Carbon Tetrachloride	U	1.0	ug/L	2	1	2.0	0.44	1.0
Chlorobenzene	U	1.0	ug/L	2	1	2.0	0.44	1.0

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20DL
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4977.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	1.0	ug/L	2	1	2.0	0.42	1.0
Dibromochloromethane	U	1.0	ug/L	2	1	2.0	0.60	1.0
Chloroethane	U	2.0	ug/L	2	2	4.0	1.1	2.0
Chloroform	U	1.0	ug/L	2	1	2.0	0.64	1.0
Chloromethane	U	2.0	ug/L	2	2	4.0	0.72	2.0
cis-1,2-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.42	1.0
cis-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.38	1.0
Dibromomethane	U	1.0	ug/L	2	1	2.0	0.92	1.0
Bromodichloromethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
Dichlorodifluoromethane	U	2.0	ug/L	2	2	4.0	0.48	2.0
Ethylbenzene	U	1.0	ug/L	2	1	2.0	0.42	1.0
1,2-Dibromoethane	U	1.0	ug/L	2	1	2.0	0.44	1.0
Hexachlorobutadiene	U	1.5	ug/L	2	1	2.0	1.0	1.5
Isopropylbenzene	U	1.0	ug/L	2	1	2.0	0.46	1.0
Methyl tert-butyl Ether	U	1.0	ug/L	2	1	2.0	0.72	1.0
Methylene Chloride	U	5.0	ug/L	2	5	10.	2.3	5.0
m+p-Xylenes	U	2.0	ug/L	2	2	4.0	1.2	2.0
Naphthalene	U	1.0	ug/L	2	1	2.0	0.60	1.0
N-Butylbenzene	U	1.0	ug/L	2	1	2.0	0.46	1.0
N-Propylbenzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
o-Xylene	U	1.0	ug/L	2	1	2.0	0.50	1.0
sec-Butylbenzene	U	1.0	ug/L	2	1	2.0	0.42	1.0
Styrene	U	1.0	ug/L	2	1	2.0	0.46	1.0
tert-Butylbenzene	U	1.0	ug/L	2	1	2.0	0.62	1.0
Tetrachloroethene	U	1.0	ug/L	2	1	2.0	0.80	1.0
Toluene	U	1.0	ug/L	2	1	2.0	0.54	1.0
trans-1,2-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.50	1.0
trans-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.40	1.0
Trichloroethene	U	1.0	ug/L	2	1	2.0	0.56	1.0
Trichlorofluoromethane	U	2.0	ug/L	2	2	4.0	0.48	2.0
Vinyl Chloride	U	2.0	ug/L	2	2	4.0	0.50	2.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		95.6	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-21
Client ID: CHAAP-21C-TB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4932.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	J	4.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-21
Client ID: CHAAP-21C-TB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4932.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4		111.	%					
Toluene-d8		99.9	%					
P-Bromofluorobenzene		94.1	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-22
Client ID: CHAAP-21C-LGIA-DPT106
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4942.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	J	0.81	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-22
Client ID: CHAAP-21C-LGIA-DPT106
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4942.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		99.4	%					
P-Bromofluorobenzene		93.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-23
Client ID: CHAAP-21C-EB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4933.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		13	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-23
Client ID: CHAAP-21C-EB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4933.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		98.6	%					
P-Bromofluorobenzene		92.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-24RA
Client ID: CHAAP-21C-UGIA-DPT109
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4974.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		30	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-24RA
Client ID: CHAAP-21C-UGIA-DPT109
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4974.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		98.9	%					
P-Bromofluorobenzene		92.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-25
Client ID: CHAAP-21C-EB-031818
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4934.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone		12	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-25
Client ID: CHAAP-21C-EB-031818
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4934.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		115.	%					
Toluene-d8		99.7	%					
P-Bromofluorobenzene		93.5	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-1
Client ID: CHAAP-21C-LGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10048.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		120.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10052.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	UM	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		102.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-3
Client ID: CHAAP-21C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10053.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		90.7	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10054.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		97.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10055.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10056.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		101.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10057.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		96.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-8
Client ID: CHAAP-21C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10058.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		99.4	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-9
Client ID: CHAAP-21C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10059.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.8	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10061.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		97.1	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10062.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		101.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10063.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-13
Client ID: CHAAP-21C-UGIA-DPT05
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10064.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		105.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10065.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		118.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-15
Client ID: CHAAP-21C-UGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10066.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		113.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10067.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		111.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-17
Client ID: CHAAP-21C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10068.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		102.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-18
Client ID: CHAAP-21C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10069.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		103.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10074.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.2	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10075.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		103.	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-22
Client ID: CHAAP-21C-LGIA-DPT106
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10076.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		95.9	%					

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-23
Client ID: CHAAP-21C-EB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10077.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		101.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-24
Client ID: CHAAP-21C-UGIA-DPT109
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10078.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		97.0	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-25
Client ID: CHAAP-21C-EB-031818
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10079.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		99.0	%					

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VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2295

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-21C-LGIA-DPT20	SL2295-10		91.4		119.		127.	*	99.9	
CHAAP-21C-LGIA-DPT20	SL2295-10DL		92.5		115.		125.	*	100.	
CHAAP-21C-UGIA-DPT01	SL2295-11		91.8		117.		126.	*	99.2	
CHAAP-21C-UGIA-DPT01	SL2295-11DL		91.7		118.		125.	*	99.5	
CHAAP-21C-UGIA-DPT03	SL2295-12		91.6		118.		124.	*	101.	
CHAAP-21C-UGIA-DPT03	SL2295-12DL		92.4		120.	*	127.	*	101.	
CHAAP-21C-UGIA-DPT05	SL2295-13		94.3		117.		118.		102.	
CHAAP-21C-UGIA-DPT07	SL2295-14		92.3		119.		126.	*	101.	
CHAAP-21C-UGIA-DPT07	SL2295-14DL		90.6		118.		126.	*	101.	
CHAAP-21C-UGIA-DPT09	SL2295-15		94.9		113.		117.		100.	
CHAAP-21C-UGIA-DPT11	SL2295-16		94.2		113.		116.		101.	
CHAAP-21C-UGIA-DPT11	SL2295-16DL		94.9		113.		116.		99.3	
CHAAP-21C-UGIA-DPT13	SL2295-17		95.1		112.		116.		101.	
CHAAP-21C-UGIA-DPT15	SL2295-18		93.7		111.		117.		99.1	
CHAAP-21C-UGIA-DPT17	SL2295-19		93.9		116.		119.		101.	
CHAAP-21C-UGIA-DPT17	SL2295-19DL		101.		114.		118.		100.	
CHAAP-21C-LGIA-DPT02	SL2295-1RA		93.1		112.		117.		103.	
CHAAP-21C-LGIA-DPT04	SL2295-2		89.8		118.		124.	*	103.	
CHAAP-21C-UGIA-DPT19	SL2295-20		93.7		115.		118.		101.	
CHAAP-21C-UGIA-DPT19	SL2295-20DL		95.6		111.		116.		100.	
CHAAP-21C-TB-031718	SL2295-21		94.1		110.		111.		99.9	
CHAAP-21C-LGIA-DPT10	SL2295-22		93.7		113.		116.		99.4	
CHAAP-21C-EB-031718	SL2295-23		92.7		110.		114.		98.6	
CHAAP-21C-UGIA-DPT10	SL2295-24RA		92.5		111.		114.		98.9	
CHAAP-21C-EB-031818	SL2295-25		93.5		113.		115.		99.7	
CHAAP-21C-LGIA-DPT04	SL2295-2DL		93.5		112.		117.		99.7	
CHAAP-21C-LGIA-DPT06	SL2295-3RA		93.2		113.		117.		98.6	
CHAAP-21C-LGIA-DPT08	SL2295-4DL		93.0		120.	*	126.	*	101.	
CHAAP-21C-LGIA-DPT08	SL2295-4RA		93.6		112.		116.		100.	
CHAAP-21C-LGIA-DPT10	SL2295-5		80.9	*	114.		116.		96.8	
CHAAP-21C-LGIA-DPT10	SL2295-5RA2		95.8		120.	*	126.	*	99.9	
CHAAP-21C-LGIA-DPT12	SL2295-6DL		91.9		113.		118.		101.	
CHAAP-21C-LGIA-DPT12	SL2295-6RA		90.5		116.		124.	*	100.	
CHAAP-21C-LGIA-DPT14	SL2295-7		91.2		115.		122.	*	99.8	
CHAAP-21C-LGIA-DPT14	SL2295-7RA		92.7		120.	*	128.	*	102.	
CHAAP-21C-LGIA-DPT16	SL2295-8RA		94.6		108.		114.		99.4	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2295

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
CHAAP-21C-LGIA-DPT18	SL2295-9RA		93.8		110.		114.		100.	
Laboratory Control S	WG225300-1		88.3		98.6		97.9		98.1	
Method Blank Sample	WG225300-2		80.0	*	106.		108.		95.1	
Laboratory Control S	WG225399-1		101.		101.		98.2		100.	
Method Blank Sample	WG225399-2		93.6		113.		115.		98.2	
Laboratory Control S	WG225461-1		102.		98.4		98.1		101.	
Method Blank Sample	WG225461-2		93.2		110.		111.		99.1	
Laboratory Control S	WG225462-1		104.		101.		100.		101.	
Method Blank Sample	WG225462-2		91.6		111.		116.		100.	
Matrix Spike	WG225462-6		105.		99.1		100.		103.	
Matrix Spike Duplica	WG225462-7		102.		99.3		103.		101.	
Laboratory Control S	WG225530-1		105.		100.		100.		101.	
Method Blank Sample	WG225530-2		94.5		106.		107.		98.2	

		QC Limits
TOL	TOLUENE-D8	89-120
DCA	1,2-DICHLOROETHANE-D4	81-120
DBF	DIBROMOFLUOROMETHANE	80-120
BFB	P-BROMOFLUOROBENZENE	85-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P4882.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL2295
Lab Sample ID : WG225300-2
Date Analyzed : 23-MAR-18
Time Analyzed : 09:49

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225300-1	P4880.D	03/23/18	08:35
CHAAP-21C-LGIA-DPT10	SL2295-5	P4896.D	03/23/18	17:50

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P4931.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL2295
Lab Sample ID : WG225461-2
Date Analyzed : 27-MAR-18
Time Analyzed : 11:26

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225461-1	P4928.D	03/27/18	09:20
CHAAP-21C-TB-031718	SL2295-21	P4932.D	03/27/18	12:01
CHAAP-21C-EB-031718	SL2295-23	P4933.D	03/27/18	12:35
CHAAP-21C-EB-031818	SL2295-25	P4934.D	03/27/18	13:09
CHAAP-21C-UGIA-DPT09	SL2295-15	P4936.D	03/27/18	14:17
CHAAP-21C-UGIA-DPT11	SL2295-16	P4937.D	03/27/18	14:51
CHAAP-21C-UGIA-DPT13	SL2295-17	P4938.D	03/27/18	15:26
CHAAP-21C-UGIA-DPT15	SL2295-18	P4939.D	03/27/18	16:00
CHAAP-21C-UGIA-DPT17	SL2295-19	P4940.D	03/27/18	16:34
CHAAP-21C-UGIA-DPT19	SL2295-20	P4941.D	03/27/18	17:08
CHAAP-21C-LGIA-DPT106	SL2295-22	P4942.D	03/27/18	17:42
CHAAP-21C-UGIA-DPT05	SL2295-13	P4944.D	03/27/18	18:50

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : P4968.D
Instrument ID : GCMS-P
Heated Purge : No

SDG : SL2295
Lab Sample ID : WG225530-2
Date Analyzed : 28-MAR-18
Time Analyzed : 11:04

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225530-1	P4966.D	03/28/18	09:51
CHAAP-21C-LGIA-DPT16	SL2295-8RA	P4972.D	03/28/18	13:21
CHAAP-21C-LGIA-DPT18	SL2295-9RA	P4973.D	03/28/18	13:55
CHAAP-21C-UGIA-DPT109	SL2295-24RA	P4974.D	03/28/18	14:29
CHAAP-21C-UGIA-DPT11	SL2295-16DL	P4975.D	03/28/18	15:03
CHAAP-21C-UGIA-DPT17	SL2295-19DL	P4976.D	03/28/18	15:37
CHAAP-21C-UGIA-DPT19	SL2295-20DL	P4977.D	03/28/18	16:11
CHAAP-21C-LGIA-DPT04	SL2295-2DL	P4980.D	03/28/18	17:54

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : T4717.D
Instrument ID : GCMS-T
Heated Purge : No

SDG : SL2295
Lab Sample ID : WG225399-2
Date Analyzed : 26-MAR-18
Time Analyzed : 10:59

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225399-1	T4715.D	03/26/18	09:44
CHAAP-21C-LGIA-DPT02	SL2295-1RA	T4718.D	03/26/18	11:39
CHAAP-21C-LGIA-DPT06	SL2295-3RA	T4719.D	03/26/18	12:16
CHAAP-21C-LGIA-DPT08	SL2295-4RA	T4720.D	03/26/18	12:52
CHAAP-21C-LGIA-DPT12	SL2295-6RA	T4722.D	03/26/18	14:05
CHAAP-21C-LGIA-DPT14	SL2295-7	T4723.D	03/26/18	14:42
CHAAP-21C-LGIA-DPT20	SL2295-10	T4726.D	03/26/18	16:31
CHAAP-21C-UGIA-DPT01	SL2295-11	T4727.D	03/26/18	17:08
CHAAP-21C-UGIA-DPT03	SL2295-12	T4728.D	03/26/18	17:44
CHAAP-21C-UGIA-DPT07	SL2295-14	T4730.D	03/26/18	18:57

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : T4743.D
Instrument ID : GCMS-T
Heated Purge : No

SDG : SL2295
Lab Sample ID : WG225462-2
Date Analyzed : 27-MAR-18
Time Analyzed : 13:52

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225462-1	T4741.D	03/27/18	12:36
CHAAP-21C-LGIA-DPT12	SL2295-6DL	T4744.D	03/27/18	14:28
CHAAP-21C-LGIA-DPT20	SL2295-10DL	T4745.D	03/27/18	15:05
CHAAP-21C-LGIA-DPT08	SL2295-4DL	T4746.D	03/27/18	15:41
CHAAP-21C-UGIA-DPT01	SL2295-11DL	T4747.D	03/27/18	16:18
CHAAP-21C-UGIA-DPT07	SL2295-14DL	T4748.D	03/27/18	16:55
CHAAP-21C-UGIA-DPT03	SL2295-12DL	T4749.D	03/27/18	17:32
CHAAP-21C-LGIA-DPT10	SL2295-5RA2	T4750.D	03/27/18	18:08
CHAAP-21C-LGIA-DPT14	SL2295-7RA	T4751.D	03/27/18	18:45
CHAAP-21C-LGIA-DPT04	SL2295-2	T4754.D	03/27/18	20:35
Matrix Spike	WG225462-6	T4755.D	03/27/18	21:11
Matrix Spike Duplica	WG225462-7	T4756.D	03/27/18	21:48

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB983A.D
Instrument ID : GCMS-P

SDG : SL2295
Date Analyzed : 19-MAR-18
Time Analyzed : 14:29
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	19.5		
75	30.0 - 60.0% of mass 95	50.1		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	0.5	0.69	1
174	Greater than 50.0% of mass 95	75.3		
175	5.0 - 9.0% of mass 174	4.8	6.43	1
176	95.0 - 101.0% of mass 174	76.0	100.84	1
177	5.0 - 9.0% of mass 176	4.6	6.10	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG225041-4	P4806.D	03/19/18	16:00
Initial Calibration	WG225041-3	P4807.D	03/19/18	16:34
Initial Calibration	WG225041-2	P4808.D	03/19/18	17:08
Initial Calibration	WG225041-1	P4809.D	03/19/18	17:42
Initial Calibration	WG225041-6	P4810.D	03/19/18	18:17
Initial Calibration	WG225041-5	P4811.D	03/19/18	18:51
Independent Source	WG225041-7	P4812.D	03/19/18	19:25

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB987A.D
Instrument ID : GCMS-P

SDG : SL2295
Date Analyzed : 23-MAR-18
Time Analyzed : 07:30
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.5		
75	30.0 - 60.0% of mass 95	53.6		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.4		
173	Less than 2.0% of mass 174	0.6	0.68	1
174	Greater than 50.0% of mass 95	81.4		
175	5.0 - 9.0% of mass 174	5.9	7.26	1
176	95.0 - 101.0% of mass 174	81.3	99.88	1
177	5.0 - 9.0% of mass 176	7.0	8.63	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225300-4	P4879.D	03/23/18	07:53
Laboratory Control S	WG225300-1	P4880.D	03/23/18	08:35
Method Blank Sample	WG225300-2	P4882.D	03/23/18	09:49
CHAAP-21C-LGIA-DPT10	SL2295-5	P4896.D	03/23/18	17:50
Continuing Calibrati	WG225300-5	P4898.D	03/23/18	18:58

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB988A.D
Instrument ID : GCMS-P

SDG : SL2295
Date Analyzed : 24-MAR-18
Time Analyzed : 08:01
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.6		
75	30.0 - 60.0% of mass 95	52.2		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.9		
173	Less than 2.0% of mass 174	0.2	0.27	1
174	Greater than 50.0% of mass 95	82.2		
175	5.0 - 9.0% of mass 174	6.2	7.54	1
176	95.0 - 101.0% of mass 174	82.2	100.06	1
177	5.0 - 9.0% of mass 176	5.6	6.82	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG225349-4	P4904.D	03/24/18	08:24
Initial Calibration	WG225349-3	P4905.D	03/24/18	09:01
Initial Calibration	WG225349-2	P4906.D	03/24/18	09:35
Initial Calibration	WG225349-1	P4907.D	03/24/18	10:09
Initial Calibration	WG225349-6	P4908.D	03/24/18	10:44
Initial Calibration	WG225349-5	P4909.D	03/24/18	11:18

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : PB991A.D
Instrument ID : GCMS-P

SDG : SL2295
Date Analyzed : 28-MAR-18
Time Analyzed : 08:41
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.4		
75	30.0 - 60.0% of mass 95	55.4		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.3		
173	Less than 2.0% of mass 174	0.6	0.74	1
174	Greater than 50.0% of mass 95	81.2		
175	5.0 - 9.0% of mass 174	6.5	8.07	1
176	95.0 - 101.0% of mass 174	79.0	97.36	1
177	5.0 - 9.0% of mass 176	5.0	6.30	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225530-4	P4965.D	03/28/18	09:07
Laboratory Control S	WG225530-1	P4966.D	03/28/18	09:51
Method Blank Sample	WG225530-2	P4968.D	03/28/18	11:04
CHAAP-21C-LGIA-DPT16	SL2295-8RA	P4972.D	03/28/18	13:21
CHAAP-21C-LGIA-DPT18	SL2295-9RA	P4973.D	03/28/18	13:55
CHAAP-21C-UGIA-DPT109	SL2295-24RA	P4974.D	03/28/18	14:29
CHAAP-21C-UGIA-DPT11	SL2295-16DL	P4975.D	03/28/18	15:03
CHAAP-21C-UGIA-DPT17	SL2295-19DL	P4976.D	03/28/18	15:37
CHAAP-21C-UGIA-DPT19	SL2295-20DL	P4977.D	03/28/18	16:11
CHAAP-21C-LGIA-DPT04	SL2295-2DL	P4980.D	03/28/18	17:54
Continuing Calibrati	WG225530-5	P4982.D	03/28/18	19:02

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : TB589A.D
Instrument ID : GCMS-T

SDG : SL2295
Date Analyzed : 24-MAR-18
Time Analyzed : 11:19
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	17.2		
75	30.0 - 60.0% of mass 95	52.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.5		
173	Less than 2.0% of mass 174	0.4	0.45	1
174	Greater than 50.0% of mass 95	78.1		
175	5.0 - 9.0% of mass 174	6.0	7.71	1
176	95.0 - 101.0% of mass 174	74.6	95.51	1
177	5.0 - 9.0% of mass 176	5.0	6.65	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG225352-4	T4704.D	03/24/18	12:36
Initial Calibration	WG225352-3	T4705.D	03/24/18	13:13
Initial Calibration	WG225352-2	T4706.D	03/24/18	13:49
Initial Calibration	WG225352-1	T4707.D	03/24/18	14:26
Initial Calibration	WG225352-6	T4708.D	03/24/18	15:02
Initial Calibration	WG225352-5	T4709.D	03/24/18	15:39
Independent Source	WG225352-7	T4710.D	03/24/18	16:15

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : TB590A.D
Instrument ID : GCMS-T

SDG : SL2295
Date Analyzed : 26-MAR-18
Time Analyzed : 08:36
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	17.5		
75	30.0 - 60.0% of mass 95	52.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.1		
173	Less than 2.0% of mass 174	0.2	0.24	1
174	Greater than 50.0% of mass 95	72.6		
175	5.0 - 9.0% of mass 174	5.4	7.39	1
176	95.0 - 101.0% of mass 174	69.5	95.64	1
177	5.0 - 9.0% of mass 176	5.1	7.42	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225399-4	T4714.D	03/26/18	09:01
Laboratory Control S	WG225399-1	T4715.D	03/26/18	09:44
Method Blank Sample	WG225399-2	T4717.D	03/26/18	10:59
CHAAP-21C-LGIA-DPT02	SL2295-1RA	T4718.D	03/26/18	11:39
CHAAP-21C-LGIA-DPT06	SL2295-3RA	T4719.D	03/26/18	12:16
CHAAP-21C-LGIA-DPT08	SL2295-4RA	T4720.D	03/26/18	12:52
CHAAP-21C-LGIA-DPT12	SL2295-6RA	T4722.D	03/26/18	14:05
CHAAP-21C-LGIA-DPT14	SL2295-7	T4723.D	03/26/18	14:42
CHAAP-21C-LGIA-DPT20	SL2295-10	T4726.D	03/26/18	16:31
CHAAP-21C-UGIA-DPT01	SL2295-11	T4727.D	03/26/18	17:08
CHAAP-21C-UGIA-DPT03	SL2295-12	T4728.D	03/26/18	17:44
CHAAP-21C-UGIA-DPT07	SL2295-14	T4730.D	03/26/18	18:57
Continuing Calibrati	WG225399-5	T4731.D	03/26/18	19:33

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : TB592.D
Instrument ID : GCMS-T

SDG : SL2295
Date Analyzed : 27-MAR-18
Time Analyzed : 10:43
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.9		
75	30.0 - 60.0% of mass 95	56.1		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.2		
173	Less than 2.0% of mass 174	1.0	1.41	1
174	Greater than 50.0% of mass 95	74.3		
175	5.0 - 9.0% of mass 174	5.2	7.04	1
176	95.0 - 101.0% of mass 174	73.5	98.91	1
177	5.0 - 9.0% of mass 176	4.9	6.60	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG225462-4	T4740.D	03/27/18	11:57
Laboratory Control S	WG225462-1	T4741.D	03/27/18	12:36
Method Blank Sample	WG225462-2	T4743.D	03/27/18	13:52
CHAAP-21C-LGIA-DPT12	SL2295-6DL	T4744.D	03/27/18	14:28
CHAAP-21C-LGIA-DPT20	SL2295-10DL	T4745.D	03/27/18	15:05
CHAAP-21C-LGIA-DPT08	SL2295-4DL	T4746.D	03/27/18	15:41
CHAAP-21C-UGIA-DPT01	SL2295-11DL	T4747.D	03/27/18	16:18
CHAAP-21C-UGIA-DPT07	SL2295-14DL	T4748.D	03/27/18	16:55
CHAAP-21C-UGIA-DPT03	SL2295-12DL	T4749.D	03/27/18	17:32
CHAAP-21C-LGIA-DPT10	SL2295-5RA2	T4750.D	03/27/18	18:08
CHAAP-21C-LGIA-DPT14	SL2295-7RA	T4751.D	03/27/18	18:45
CHAAP-21C-LGIA-DPT04	SL2295-2	T4754.D	03/27/18	20:35
Matrix Spike	WG225462-6	T4755.D	03/27/18	21:11
Matrix Spike Duplica	WG225462-7	T4756.D	03/27/18	21:48
Continuing Calibrati	WG225462-5	T4757.D	03/27/18	22:25
Continuing Calibrati	WG225462-8	T4758.D	03/27/18	23:01
Continuing Calibrati	WG225462-9	T4759.D	03/27/18	23:38

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225041-4
Lab File ID : P4806.D

SDG: SL2295
Analytical Date: 03/19/18 16:00
Instrument ID: GCMS-P

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	586253		6.53		1018640		7.46		1086918		11.87	
	Upper Limit	1172506		7.03		2037280		7.96		2173836		12.37	
	Lower Limit	293126.5		6.03		509320		6.96		543459		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG225300-4	462745		6.53		753459		7.46		754620		11.87	
Laboratory Control S	WG225300-1	480356		6.53		791836		7.46		786218		11.87	
Method Blank Sample	WG225300-2	392542		6.54		700536		7.47		661139		11.87	
CHAAP-21C-LGIA-DI	SL2295-5	317082		6.54		592461		7.47		572652		11.87	
Continuing Calibrati	WG225300-5	419927		6.53		691512		7.46		705055		11.87	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225041-4
Lab File ID : P4806.D

SDG: SL2295
Analytical Date: 03/19/18 16:00
Instrument ID: GCMS-P

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	590652		14.83	
	Upper Limit	1181304		15.33	
	Lower Limit	295326		14.33	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG225300-4	399864		14.82	
Laboratory Control S	WG225300-1	422216		14.83	
Method Blank Sample	WG225300-2	331920		14.83	
CHAAP-21C-LGIA-DI	SL2295-5	289257	*	14.83	
Continuing Calibrati	WG225300-5	379256		14.83	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225349-4
Lab File ID : P4904.D

SDG: SL2295
Analytical Date: 03/24/18 08:24
Instrument ID: GCMS-P

		PENTAFLUOROBENZENE				1,4-DIFLUOROBENZENE				CHLOROBENZENE-D5			
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	437331		6.54		713976		7.47		722364		11.87	
	Upper Limit	874662		7.04		1427952		7.97		1444728		12.37	
	Lower Limit	218665.5		6.04		356988		6.97		361182		11.37	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG225461-4	452122		6.54		722957		7.47		743462		11.87	
Laboratory Control S	WG225461-1	485216		6.53		793407		7.46		791357		11.87	
Method Blank Sample	WG225461-2	393252		6.54		703149		7.47		673553		11.87	
CHAAP-21C-TB-0317	SL2295-21	373478		6.54		664161		7.47		646521		11.87	
CHAAP-21C-EB-0317	SL2295-23	354459		6.54		647312		7.47		619213		11.87	
CHAAP-21C-EB-0318	SL2295-25	342283		6.54		624169		7.47		604188		11.87	
CHAAP-21C-UGIA-DI	SL2295-15	331021		6.54		606242		7.47		595799		11.87	
CHAAP-21C-UGIA-DI	SL2295-16	327864		6.54		595941		7.46		585048		11.88	
CHAAP-21C-UGIA-DI	SL2295-17	323842		6.54		583327		7.46		572466		11.87	
CHAAP-21C-UGIA-DI	SL2295-18	316511		6.54		584092		7.47		569276		11.87	
CHAAP-21C-UGIA-DI	SL2295-19	309840		6.54		574747		7.47		558922		11.87	
CHAAP-21C-UGIA-DI	SL2295-20	312480		6.54		574220		7.46		557709		11.87	
CHAAP-21C-LGIA-DI	SL2295-22	310889		6.54		569032		7.46		563678		11.87	
CHAAP-21C-UGIA-DI	SL2295-13	302451		6.54		559039		7.46		552918		11.87	
Continuing Calibrati	WG225461-5	411885		6.54		674872		7.47		692034		11.87	
Continuing Calibrati	WG225530-4	468965		6.54		765747		7.47		776364		11.87	
Laboratory Control S	WG225530-1	481271		6.53		792385		7.46		803458		11.87	
Method Blank Sample	WG225530-2	399725		6.54		703933		7.46		673802		11.87	
CHAAP-21C-LGIA-DI	SL2295-8RA	341680		6.54		609127		7.47		597150		11.87	
CHAAP-21C-LGIA-DI	SL2295-9RA	328000		6.53		593238		7.47		580205		11.87	
CHAAP-21C-UGIA-DI	SL2295-24RA	323536		6.54		592511		7.47		579537		11.87	
CHAAP-21C-UGIA-DI	SL2295-16DL	311943		6.54		577598		7.46		566127		11.87	
CHAAP-21C-UGIA-DI	SL2295-19DL	262158		6.55		485113		7.47		495878		11.87	
CHAAP-21C-UGIA-DI	SL2295-20DL	316267		6.54		580677		7.47		572992		11.87	
CHAAP-21C-LGIA-DI	SL2295-2DL	289278		6.54		532706		7.47		526024		11.87	
Continuing Calibrati	WG225530-5	422709		6.54		697216		7.46		704167		11.87	

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225349-4
Lab File ID : P4904.D

SDG: SL2295
Analytical Date: 03/24/18 08:24
Instrument ID: GCMS-P

		1,4-DICHLOROBENZENE-D4		
		Area #	RT #	
	Std .	384527	14.83	
	Upper Limit	769054	15.33	
	Lower Limit	192263.5	14.33	
Client Sample ID	Lab Sample ID			
Continuing Calibrati	WG225461-4	405138	14.83	
Laboratory Control S	WG225461-1	429221	14.83	
Method Blank Sample	WG225461-2	345603	14.82	
CHAAP-21C-TB-0317	SL2295-21	327180	14.83	
CHAAP-21C-EB-0317	SL2295-23	321108	14.83	
CHAAP-21C-EB-0318	SL2295-25	311239	14.82	
CHAAP-21C-UGIA-Dl	SL2295-15	308067	14.82	
CHAAP-21C-UGIA-Dl	SL2295-16	301163	14.83	
CHAAP-21C-UGIA-Dl	SL2295-17	295866	14.83	
CHAAP-21C-UGIA-Dl	SL2295-18	289256	14.82	
CHAAP-21C-UGIA-Dl	SL2295-19	289228	14.83	
CHAAP-21C-UGIA-Dl	SL2295-20	285183	14.83	
CHAAP-21C-LGIA-DI	SL2295-22	288088	14.83	
CHAAP-21C-UGIA-Dl	SL2295-13	285311	14.83	
Continuing Calibrati	WG225461-5	373612	14.83	
Continuing Calibrati	WG225530-4	415987	14.83	
Laboratory Control S	WG225530-1	430484	14.83	
Method Blank Sample	WG225530-2	345240	14.83	
CHAAP-21C-LGIA-DI	SL2295-8RA	307078	14.83	
CHAAP-21C-LGIA-DI	SL2295-9RA	297544	14.83	
CHAAP-21C-UGIA-Dl	SL2295-24RA	297778	14.82	
CHAAP-21C-UGIA-Dl	SL2295-16DL	290357	14.83	
CHAAP-21C-UGIA-Dl	SL2295-19DL	278429	14.83	
CHAAP-21C-UGIA-Dl	SL2295-20DL	293649	14.83	
CHAAP-21C-LGIA-DI	SL2295-2DL	269281	14.83	
Continuing Calibrati	WG225530-5	389337	14.83	

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225349-4
Lab File ID : P4904.D

SDG: SL2295
Analytical Date: 03/24/18 08:24
Instrument ID: GCMS-P

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225352-4
Lab File ID : T4704.D

SDG: SL2295
Analytical Date: 03/24/18 12:36
Instrument ID: GCMS-T

		PENTAFLUOROBENZENE		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	514221	6.07	793305	6.86	642935	10.89
	Upper Limit	1028442	6.57	1586610	7.36	1285870	11.39
	Lower Limit	257110.5	5.57	396652.5	6.36	321467.5	10.39
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG225399-4	502502	6.07	778885	6.86	638308	10.89
Laboratory Control S	WG225399-1	497524	6.07	778914	6.86	621855	10.89
Method Blank Sample	WG225399-2	395832	6.07	674303	6.86	513044	10.89
CHAAP-21C-LGIA-DI	SL2295-1RA	375970	6.07	621105	6.86	495525	10.89
CHAAP-21C-LGIA-DI	SL2295-3RA	362675	6.07	622109	6.86	472794	10.89
CHAAP-21C-LGIA-DI	SL2295-4RA	349937	6.07	587284	6.86	460555	10.89
CHAAP-21C-LGIA-DI	SL2295-6RA	320999	6.07	557521	6.86	431933	10.89
CHAAP-21C-LGIA-DI	SL2295-7	315754	6.07	551551	6.86	431454	10.89
CHAAP-21C-LGIA-DI	SL2295-10	290038	6.07	516491	6.86	395379	10.89
CHAAP-21C-UGIA-DI	SL2295-11	281632	6.07	498448	6.86	387572	10.89
CHAAP-21C-UGIA-DI	SL2295-12	279639	6.07	484100	6.86	379327	10.89
CHAAP-21C-UGIA-DI	SL2295-14	268994	6.07	477698	6.86	375322	10.89
Continuing Calibrati	WG225399-5	370405	6.07	572458	6.86	494811	10.89
Continuing Calibrati	WG225462-4	467721	6.07	730236	6.86	603468	10.89
Laboratory Control S	WG225462-1	472147	6.07	745289	6.86	600270	10.89
Method Blank Sample	WG225462-2	371587	6.07	619151	6.86	483959	10.89
CHAAP-21C-LGIA-DI	SL2295-6DL	338751	6.07	576041	6.86	448340	10.89
CHAAP-21C-LGIA-DI	SL2295-10DL	312107	6.07	540806	6.86	426330	10.89
CHAAP-21C-LGIA-DI	SL2295-4DL	293475	6.07	517839	6.86	407848	10.89
CHAAP-21C-UGIA-DI	SL2295-11DL	290316	6.07	506099	6.86	394796	10.89
CHAAP-21C-UGIA-DI	SL2295-14DL	279528	6.08	487996	6.86	386042	10.89
CHAAP-21C-UGIA-DI	SL2295-12DL	267594	6.08	472465	6.86	367534	10.89
CHAAP-21C-LGIA-DI	SL2295-5RA2	266155	6.08	467259	6.86	372014	10.89
CHAAP-21C-LGIA-DI	SL2295-7RA	263540	6.08	468675	6.86	370677	10.89
CHAAP-21C-LGIA-DI	SL2295-2	262432	6.07	454102	6.86	350716	10.89
Matrix Spike	WG225462-6	342813	6.07	537780	6.86	443798	10.89
Matrix Spike Duplica	WG225462-7	377688	6.07	593597	6.86	492968	10.89
Continuing Calibrati	WG225462-5	406391	6.07	632260	6.86	538922	10.89
Continuing Calibrati	WG225462-8	415973	6.07	653436	6.86	551600	10.89
Continuing Calibrati	WG225462-9	432598	6.07	684296	6.86	564234	10.89

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225352-4
Lab File ID : T4704.D

SDG: SL2295
Analytical Date: 03/24/18 12:36
Instrument ID: GCMS-T

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	281146		13.97	
	Upper Limit	562292		14.47	
	Lower Limit	140573		13.47	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG225399-4	278705		13.96	
Laboratory Control S	WG225399-1	269904		13.97	
Method Blank Sample	WG225399-2	208539		13.97	
CHAAP-21C-LGIA-DI	SL2295-1RA	197746		13.97	
CHAAP-21C-LGIA-DI	SL2295-3RA	194042		13.97	
CHAAP-21C-LGIA-DI	SL2295-4RA	188016		13.97	
CHAAP-21C-LGIA-DI	SL2295-6RA	175260		13.97	
CHAAP-21C-LGIA-DI	SL2295-7	174898		13.97	
CHAAP-21C-LGIA-DI	SL2295-10	164683		13.97	
CHAAP-21C-UGIA-DI	SL2295-11	156526		13.97	
CHAAP-21C-UGIA-DI	SL2295-12	151900		13.97	
CHAAP-21C-UGIA-DI	SL2295-14	151896		13.97	
Continuing Calibrati	WG225399-5	224233		13.96	
Continuing Calibrati	WG225462-4	260532		13.97	
Laboratory Control S	WG225462-1	264178		13.96	
Method Blank Sample	WG225462-2	188981		13.97	
CHAAP-21C-LGIA-DI	SL2295-6DL	178307		13.97	
CHAAP-21C-LGIA-DI	SL2295-10DL	169880		13.97	
CHAAP-21C-LGIA-DI	SL2295-4DL	165758		13.97	
CHAAP-21C-UGIA-DI	SL2295-11DL	159777		13.97	
CHAAP-21C-UGIA-DI	SL2295-14DL	157532		13.97	
CHAAP-21C-UGIA-DI	SL2295-12DL	151369		13.97	
CHAAP-21C-LGIA-DI	SL2295-5RA2	153685		13.97	
CHAAP-21C-LGIA-DI	SL2295-7RA	151180		13.97	
CHAAP-21C-LGIA-DI	SL2295-2	145148		13.97	
Matrix Spike	WG225462-6	206100		13.97	
Matrix Spike Duplica	WG225462-7	225017		13.97	
Continuing Calibrati	WG225462-5	237516		13.97	
Continuing Calibrati	WG225462-8	234539		13.96	
Continuing Calibrati	WG225462-9	246719		13.96	

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition I
Lab ID : WG225352-4
Lab File ID : T4704.D

SDG: SL2295
Analytical Date: 03/24/18 12:36
Instrument ID: GCMS-T

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-1RA
Client ID: CHAAP-21C-LGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4718.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		51	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-1RA
Client ID: CHAAP-21C-LGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4718.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		93.1	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4718.D
Report Date: 28-Mar-2018 09:35

Katahdin Analytical Services

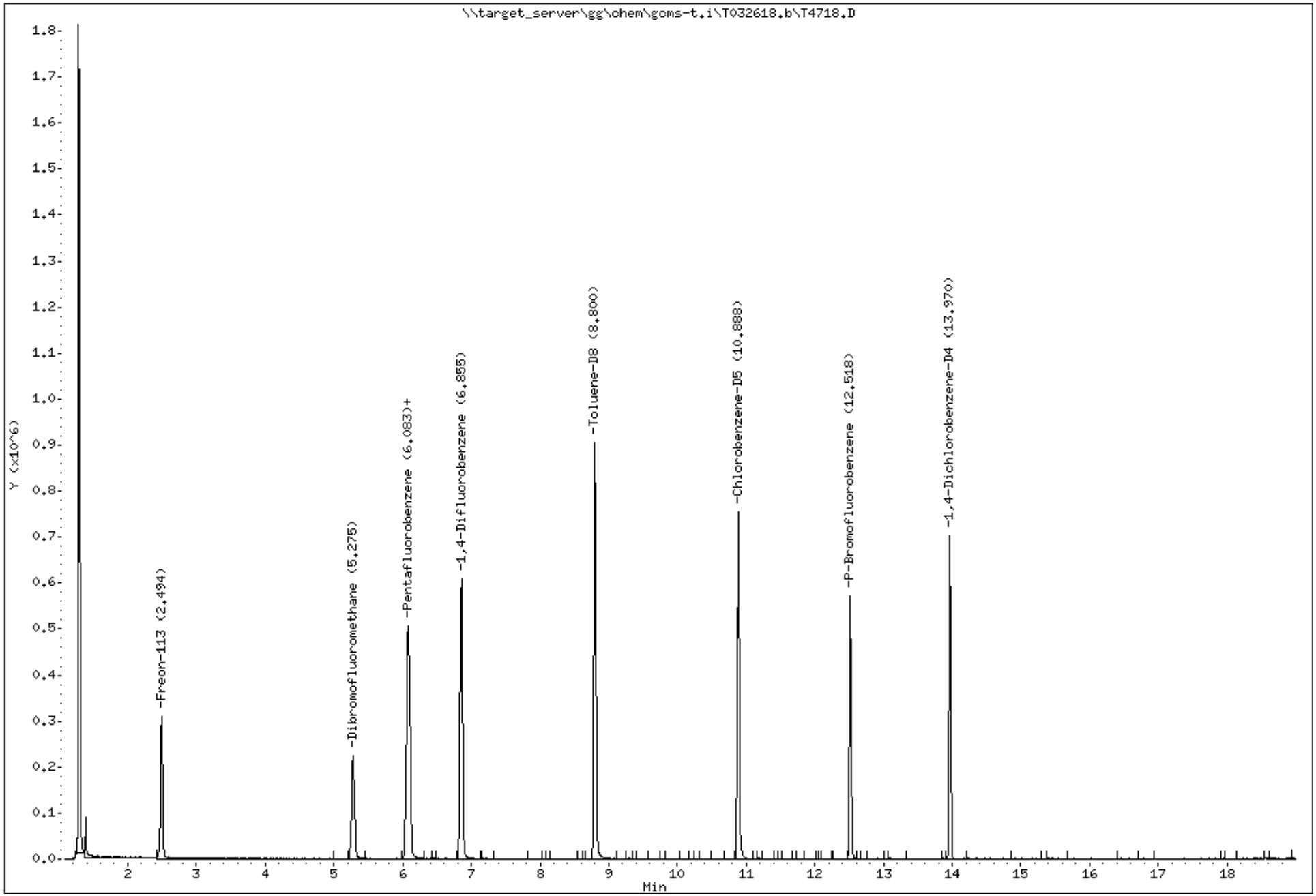
Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4718.D
Lab Smp Id: SL2295-1RA Client Smp ID: HAAP-21C-LGIA-DPT02
Inj Date : 26-MAR-2018 11:39
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-1RA
Misc Info : WG225399,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.493	2.486	(0.411)	91646	50.6996	50.7	
$ 34	Dibromofluoromethane	113	5.282	5.275	(0.870)	212197	56.0928	56.1	
* 41	Pentafluorobenzene	168	6.068	6.068	(1.000)	375970	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	302092	58.6365	58.6	
* 48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	621105	50.0000		
$ 58	Toluene-D8	98	8.800	8.800	(1.284)	748589	51.3634	51.4	
* 68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	495525	50.0000		
$ 78	P-Bromofluorobenzene	95	12.518	12.511	(1.826)	219224	46.5340	46.5	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	197746	50.0000		

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4718.D
Date : 26-MAR-2018 11:39
Client ID: HAAP-21C-LGIA-DPT02 Instrument: gcms-t.i
Sample Info: SL2295-1RA



Katahdin Analytical Services 1000031

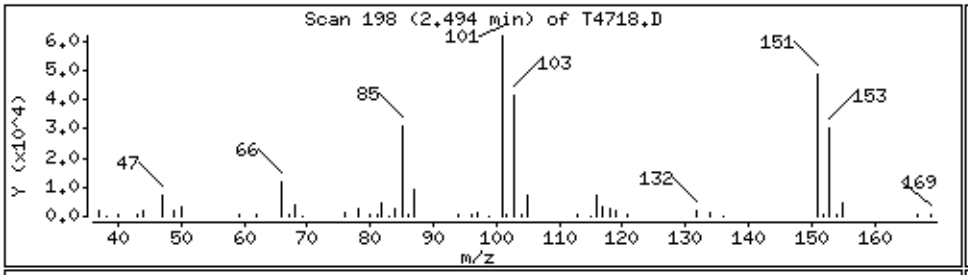
Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4718.D

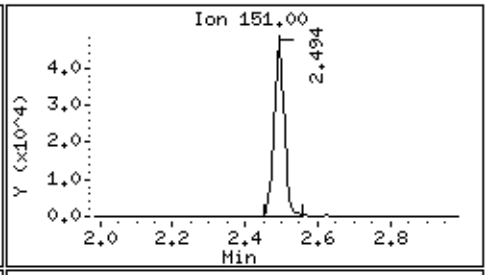
Date : 26-MAR-2018 11:39

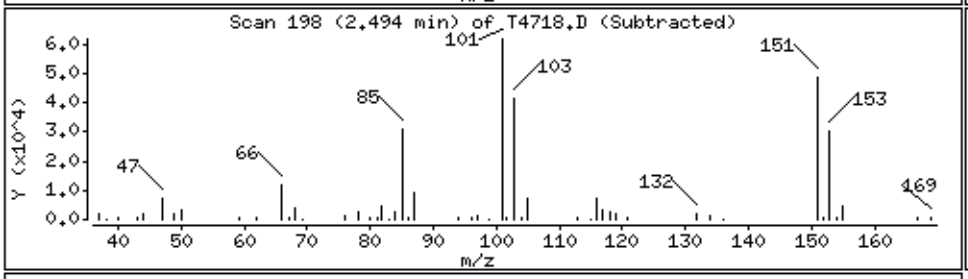
Client ID: HAAP-21C-LGIA-DPT02 Instrument: gcms-t.i

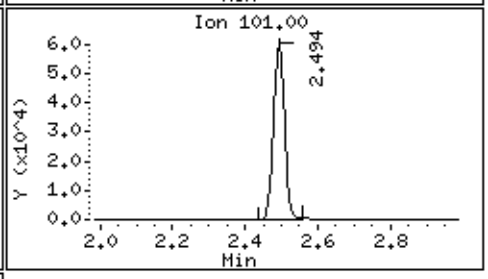
Sample Info: SL2295-1RA

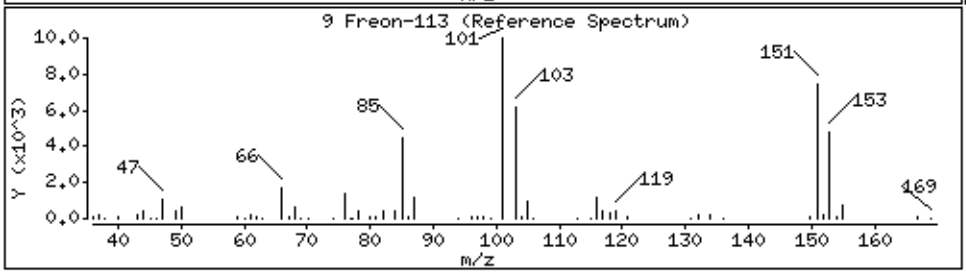
9 Freon-113 Concentration: 50.7 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4754.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	EMM	8300	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	UMM	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	UMM	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4754.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	UMM	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	UMM	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.34	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	UMM	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		103.	%					
P-Bromofluorobenzene		89.8	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4754.D
Report Date: 28-Mar-2018 09:57

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4754.D
Lab Smp Id: SL2295-2 Client Smp ID: HAAP-21C-LGIA-DPT04
Inj Date : 27-MAR-2018 20:35
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-2
Misc Info : WG225462,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

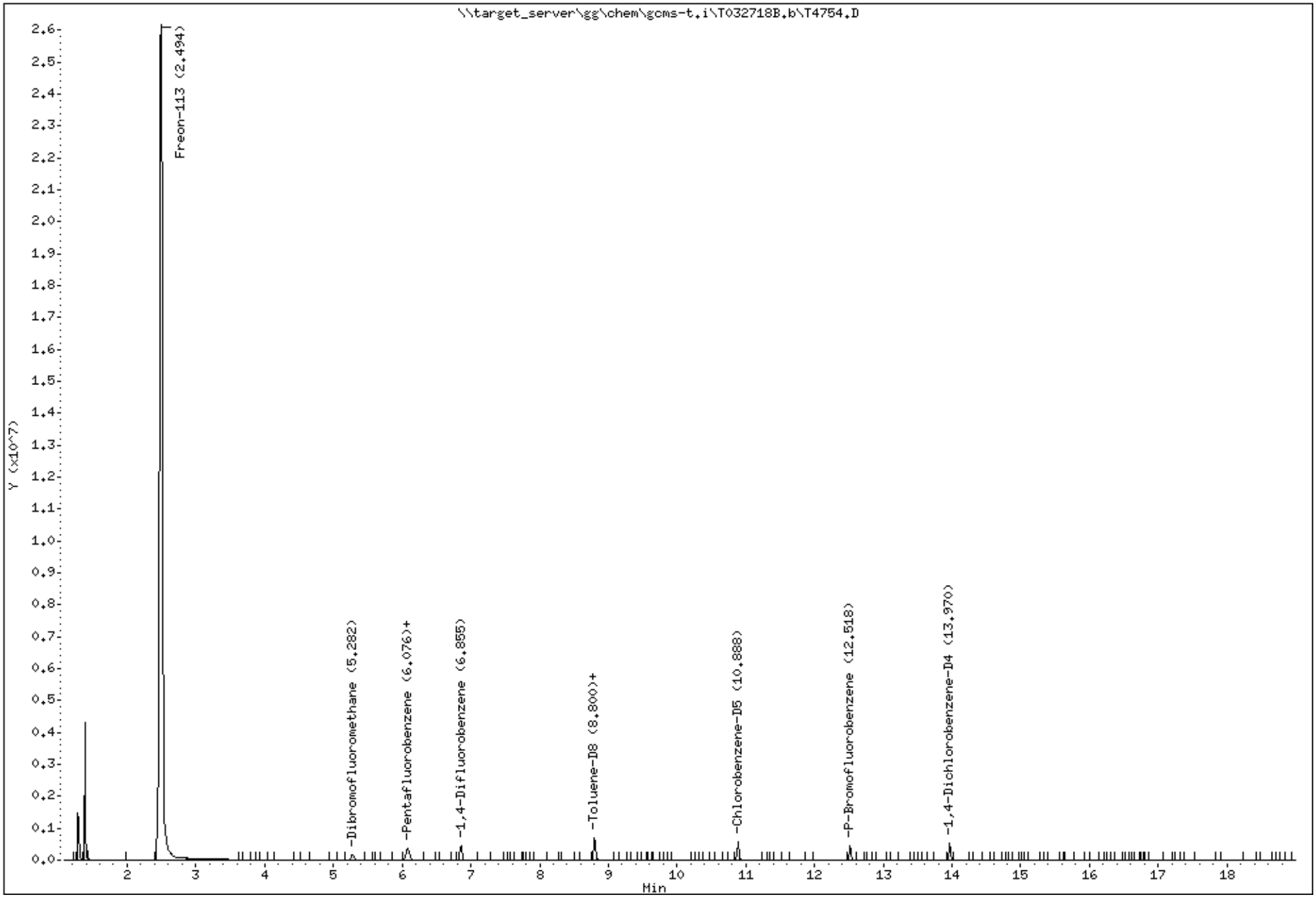
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.411)	10527064	8343.24	8340(A)	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	156342	59.2080	59.2	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	262432	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	223632	62.1869	62.2	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	454102	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	547438	51.3756	51.4	
	59 Toluene	92	8.871	8.864	(1.294)	2351	0.34237	0.34(a)	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	350716	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	154699	44.9140	44.9	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	145148	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4754.D
Date : 27-MAR-2018 20:35
Client ID: HAAP-21C-LGIA-DPT04 Instrument: gcms-t.i
Sample Info: SL2295-2



Katahdin Analytical Services 1000036

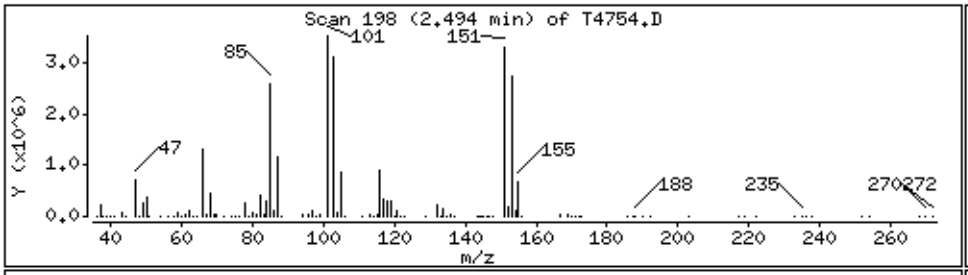
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4754.D

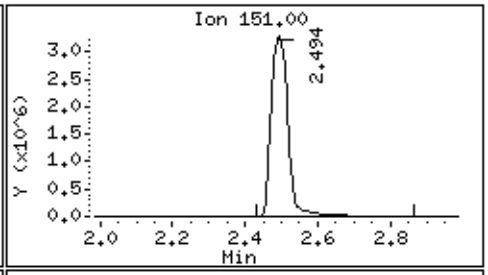
Date : 27-MAR-2018 20:35

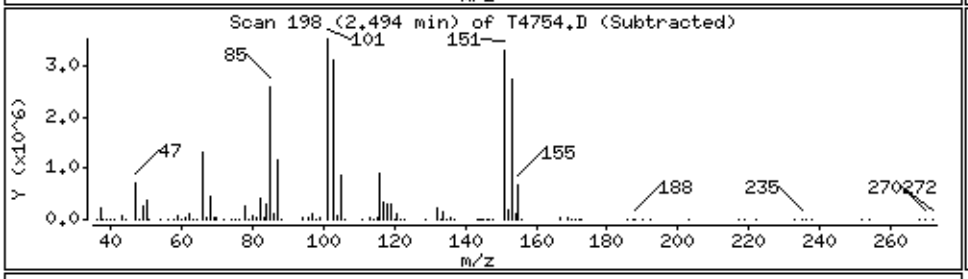
Client ID: HAAP-21C-LGIA-DPT04 Instrument: gcms-t.i

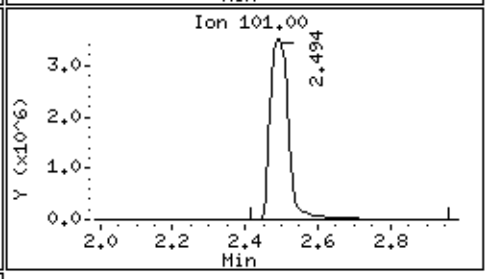
Sample Info: SL2295-2

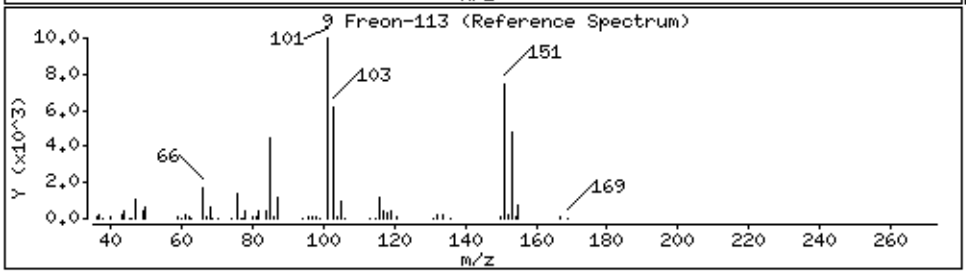
9 Freon-113 Concentration: 8340 ug/l



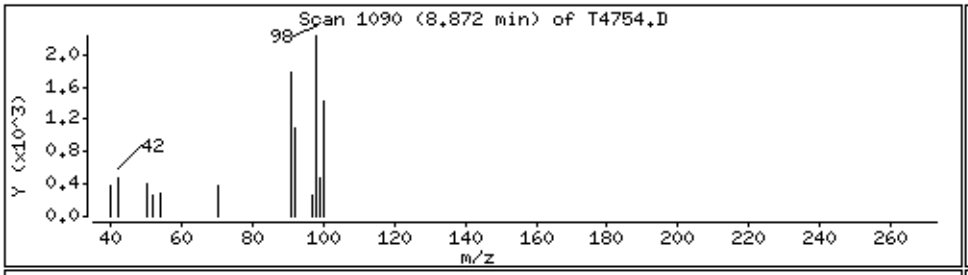


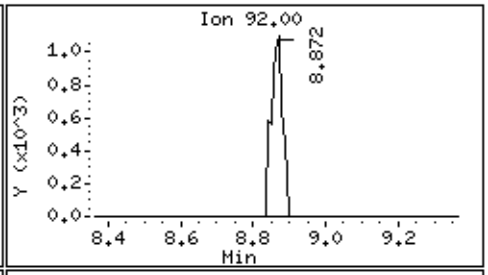


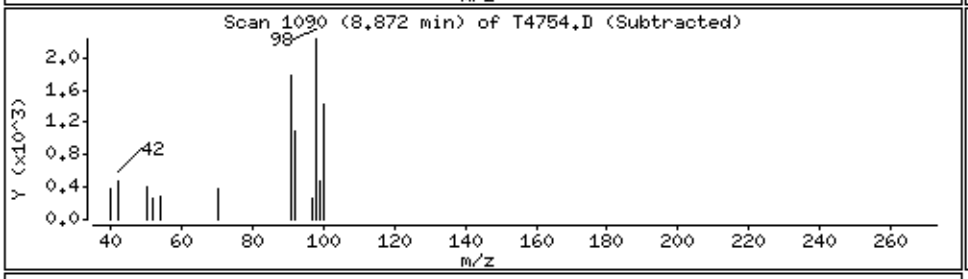


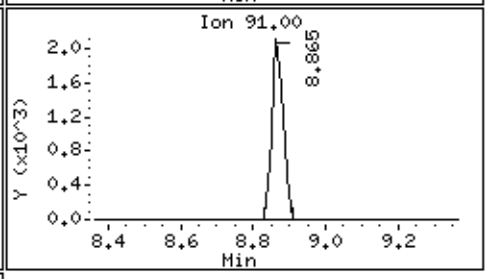


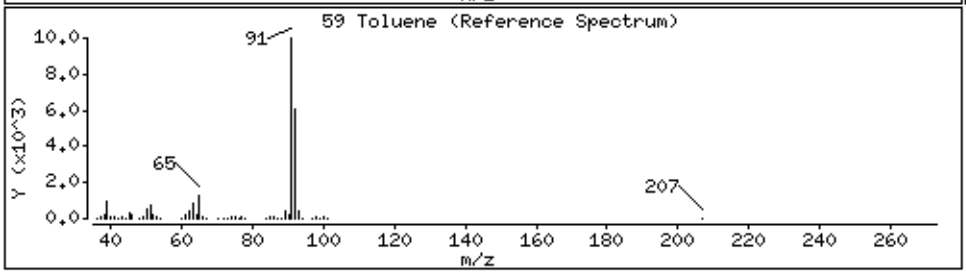
59 Toluene Concentration: 0.34 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2DL
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4980.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	100	ug/L	200	1	200	38.	100
1,1,1-Trichloroethane	U	100	ug/L	200	1	200	40.	100
1,1,2,2-Tetrachloroethane	U	100	ug/L	200	1	200	76.	100
Freon-113	MM	13000	ug/L	200	1	200	62.	100
1,1,2-Trichloroethane	U	100	ug/L	200	1	200	66.	100
1,1-Dichloroethane	U	100	ug/L	200	1	200	42.	100
1,1-Dichloroethene	UMM	100	ug/L	200	1	200	70.	100
1,1-Dichloropropene	U	100	ug/L	200	1	200	42.	100
1,2,3-Trichlorobenzene	U	100	ug/L	200	1	200	54.	100
1,2,3-Trichloropropane	U	100	ug/L	200	1	200	38.	100
1,2,4-Trichlorobenzene	U	100	ug/L	200	1	200	74.	100
1,2,4-Trimethylbenzene	U	100	ug/L	200	1	200	38.	100
1,2-Dibromo-3-Chloropropane	U	100	ug/L	200	1	200	100	100
1,2-Dichlorobenzene	U	100	ug/L	200	1	200	30.	100
1,2-Dichloroethane	U	100	ug/L	200	1	200	40.	100
1,2-Dichloropropane	U	100	ug/L	200	1	200	50.	100
1,3,5-Trimethylbenzene	U	100	ug/L	200	1	200	40.	100
1,3-Dichlorobenzene	U	100	ug/L	200	1	200	52.	100
1,3-Dichloropropane	U	100	ug/L	200	1	200	44.	100
1,4-Dichlorobenzene	U	100	ug/L	200	1	200	48.	100
2,2-Dichloropropane	U	100	ug/L	200	1	200	50.	100
2-Butanone	U	500	ug/L	200	5	1000	260	500
2-Chlorotoluene	U	100	ug/L	200	1	200	40.	100
2-Hexanone	U	500	ug/L	200	5	1000	340	500
4-Chlorotoluene	U	100	ug/L	200	1	200	52.	100
P-Isopropyltoluene	U	100	ug/L	200	1	200	50.	100
4-Methyl-2-Pentanone	U	500	ug/L	200	5	1000	260	500
Acetone	U	500	ug/L	200	5	1000	440	500
Benzene	U	100	ug/L	200	1	200	52.	100
Bromobenzene	U	100	ug/L	200	1	200	48.	100
Bromoform	U	100	ug/L	200	1	200	46.	100
Bromomethane	UMM	200	ug/L	200	2	400	98.	200
Carbon Disulfide	U	100	ug/L	200	1	200	50.	100
Carbon Tetrachloride	U	100	ug/L	200	1	200	44.	100
Chlorobenzene	U	100	ug/L	200	1	200	44.	100

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2DL
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4980.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	100	ug/L	200	1	200	42.	100
Dibromochloromethane	U	100	ug/L	200	1	200	60.	100
Chloroethane	UMM	200	ug/L	200	2	400	110	200
Chloroform	U	100	ug/L	200	1	200	64.	100
Chloromethane	U	200	ug/L	200	2	400	72.	200
cis-1,2-Dichloroethene	U	100	ug/L	200	1	200	42.	100
cis-1,3-Dichloropropene	U	100	ug/L	200	1	200	38.	100
Dibromomethane	U	100	ug/L	200	1	200	92.	100
Bromodichloromethane	U	100	ug/L	200	1	200	66.	100
Dichlorodifluoromethane	UMM	200	ug/L	200	2	400	48.	200
Ethylbenzene	U	100	ug/L	200	1	200	42.	100
1,2-Dibromoethane	U	100	ug/L	200	1	200	44.	100
Hexachlorobutadiene	U	150	ug/L	200	1	200	100	150
Isopropylbenzene	U	100	ug/L	200	1	200	46.	100
Methyl tert-butyl Ether	U	100	ug/L	200	1	200	72.	100
Methylene Chloride	U	500	ug/L	200	5	1000	230	500
m+p-Xylenes	U	200	ug/L	200	2	400	120	200
Naphthalene	U	100	ug/L	200	1	200	60.	100
N-Butylbenzene	U	100	ug/L	200	1	200	46.	100
N-Propylbenzene	U	100	ug/L	200	1	200	52.	100
o-Xylene	U	100	ug/L	200	1	200	50.	100
sec-Butylbenzene	U	100	ug/L	200	1	200	42.	100
Styrene	U	100	ug/L	200	1	200	46.	100
tert-Butylbenzene	U	100	ug/L	200	1	200	62.	100
Tetrachloroethene	U	100	ug/L	200	1	200	80.	100
Toluene	U	100	ug/L	200	1	200	54.	100
trans-1,2-Dichloroethene	U	100	ug/L	200	1	200	50.	100
trans-1,3-Dichloropropene	U	100	ug/L	200	1	200	40.	100
Trichloroethene	U	100	ug/L	200	1	200	56.	100
Trichlorofluoromethane	UMM	200	ug/L	200	2	400	48.	200
Vinyl Chloride	U	200	ug/L	200	2	400	50.	200
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		99.7	%					
P-Bromofluorobenzene		93.5	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4980.D
Report Date: 29-Mar-2018 11:09

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Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4980.D
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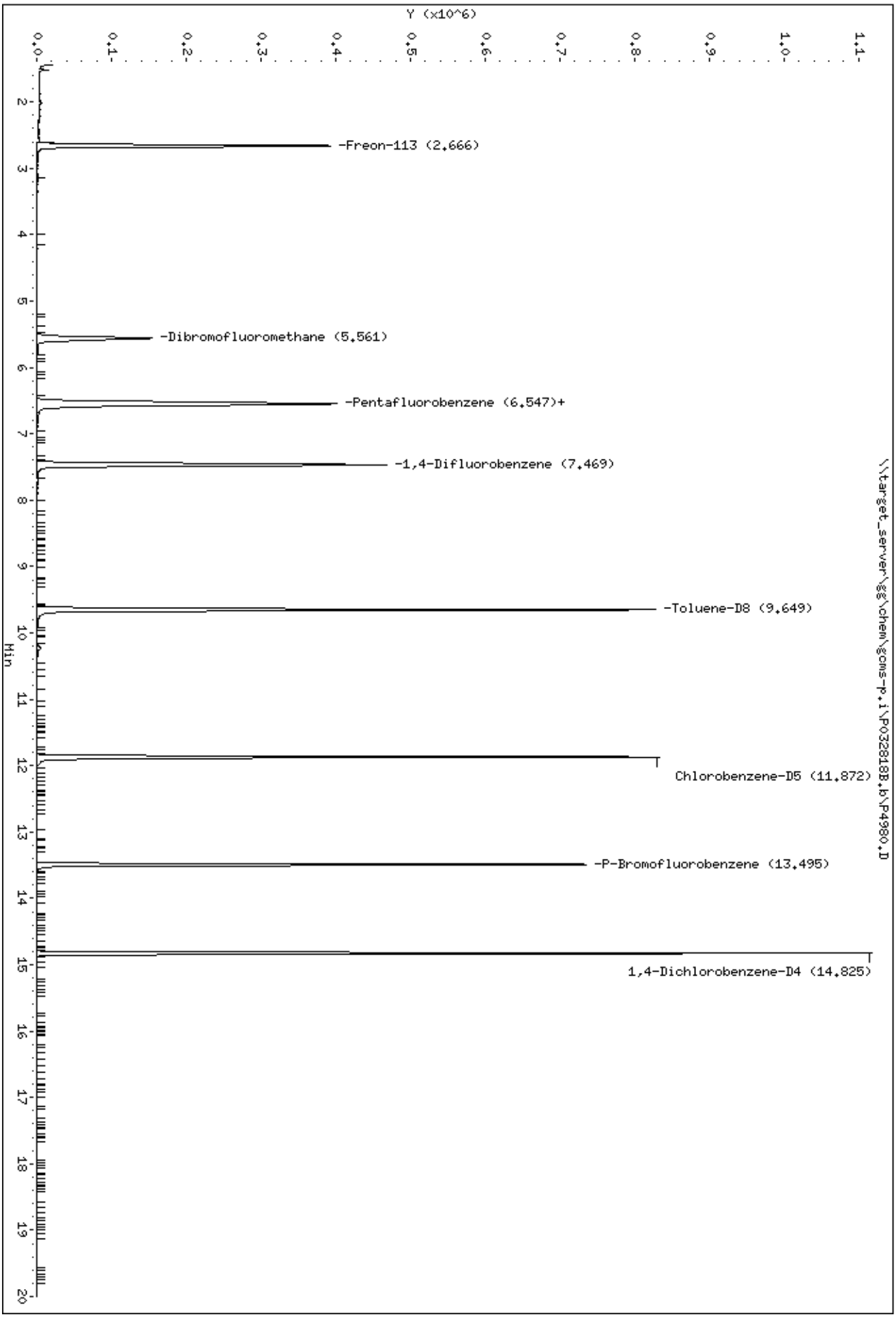
Inj Date : 28-MAR-2018 17:54 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-2DL
Misc Info : WG225530,WG225349-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 29-Mar-2018 07:09 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 16
Dil Factor: 200.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	200.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.665	2.659	(0.408)	124746	64.8823	13000	
$ 34	Dibromofluoromethane	113	5.560	5.561	(0.850)	157632	56.1016	56.1	
* 41	Pentafluorobenzene	168	6.539	6.541	(1.000)	289278	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.561	6.569	(1.003)	231723	58.3603	58.4	
* 48	1,4-Difluorobenzene	114	7.469	7.470	(1.000)	532706	50.0000		
$ 58	Toluene-D8	98	9.649	9.650	(1.292)	655128	49.8564	49.8	
* 68	Chlorobenzene-D5	117	11.872	11.873	(1.000)	526024	50.0000		
$ 78	P-Bromofluorobenzene	95	13.487	13.496	(1.806)	243063	46.7312	46.7	
* 94	1,4-Dichlorobenzene-D4	152	14.831	14.832	(1.000)	269281	50.0000		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Sample Info: SL2295-2DL
Instrument: gcms-p.i
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Y (x10^6)
Min
-Freon-113 (2.666)
-Dibromofluoromethane (5.561)
-Pentafluorobenzene (6.547)+
-1,4-Difluorobenzene (7.469)
-Toluene-D8 (9.649)
Chlorobenzene-D5 (11.872)
-P-Bromofluorobenzene (13.495)
1,4-Dichlorobenzene-D4 (14.825)

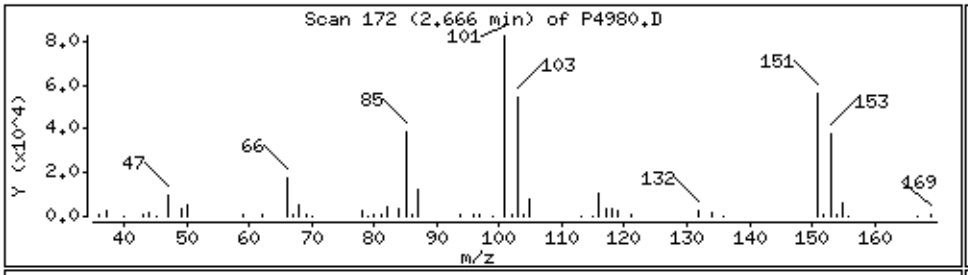
Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4980.D

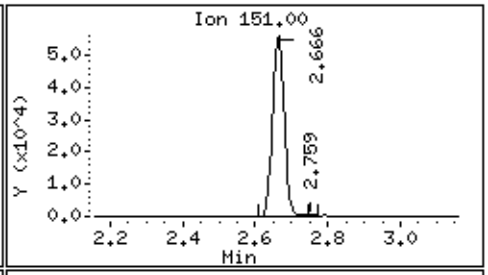
Date : 28-MAR-2018 17:54

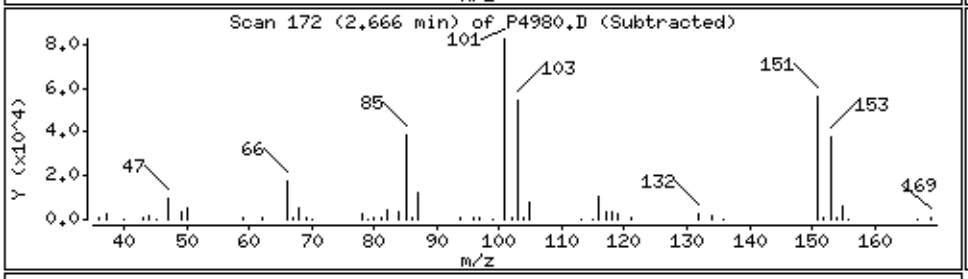
Client ID: HAAP-21C-LGIA-DPT04 Instrument: gcms-p.i

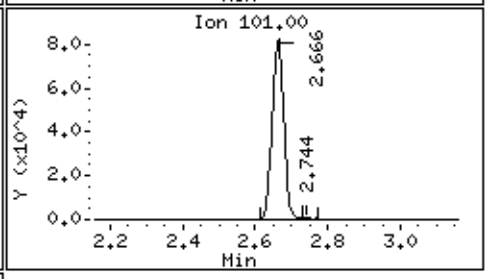
Sample Info: SL2295-2DL

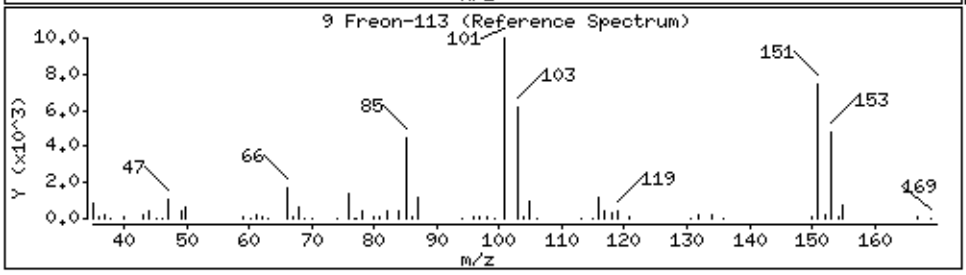
9 Freon-113 Concentration: 13000 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-3RA
Client ID: CHAAP-21C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4719.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-3RA
Client ID: CHAAP-21C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4719.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		98.6	%					
P-Bromofluorobenzene		93.2	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4719.D
Report Date: 28-Mar-2018 09:35

Katahdin Analytical Services

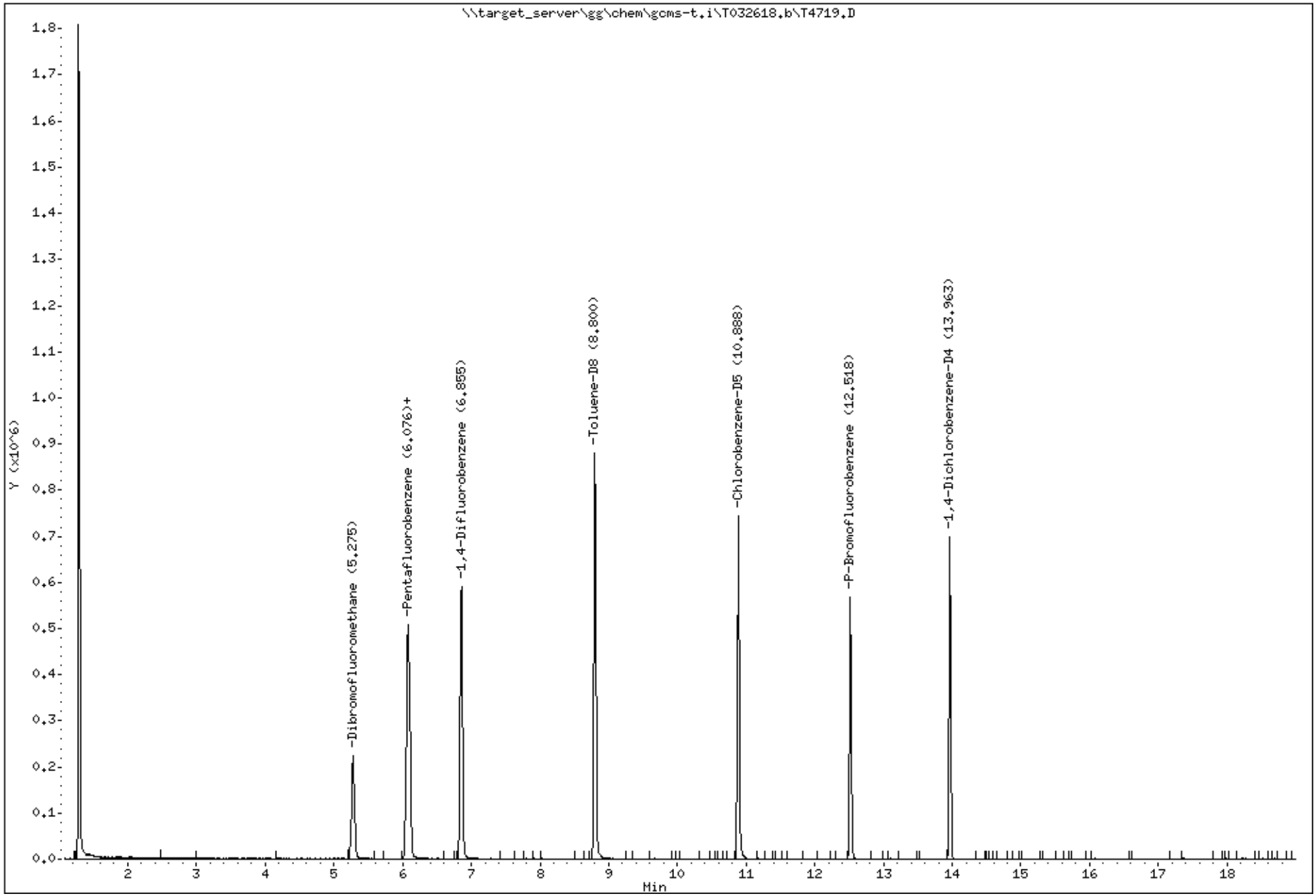
Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4719.D
Lab Smp Id: SL2295-3RA Client Smp ID: HAAP-21C-LGIA-DPT06
Inj Date : 26-MAR-2018 12:16
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-3RA
Misc Info : WG225399,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	5.275	5.275	(0.869)	205714	56.3725	56.4	
* 41 Pentafluorobenzene	168	6.068	6.068	(1.000)	362675	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	290340	58.4213	58.4	
* 48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	622109	50.0000		
$ 58 Toluene-D8	98	8.800	8.800	(1.284)	719871	49.3132	49.3	
* 68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	472794	50.0000		
$ 78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	219976	46.6183	46.6	
* 94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	194042	50.0000		

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4719.D
Date : 26-MAR-2018 12:16
Client ID: HAAP-21C-LGIA-DPT06 Instrument: gcms-t.i
Sample Info: SL2295-3RA



Katahdin Analytical Services 1000046

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4DL
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4746.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	10	ug/L	20	1	20.	3.8	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
Freon-113		2800	ug/L	20	1	20.	6.2	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
1,1-Dichloropropene	U	10	ug/L	20	1	20.	4.2	10.
1,2,3-Trichlorobenzene	U	10	ug/L	20	1	20.	5.4	10.
1,2,3-Trichloropropane	U	10	ug/L	20	1	20.	3.8	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
1,2,4-Trimethylbenzene	U	10	ug/L	20	1	20.	3.8	10.
1,2-Dibromo-3-Chloropropane	U	10	ug/L	20	1	20.	10.	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
1,3,5-Trimethylbenzene	U	10	ug/L	20	1	20.	4.0	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,3-Dichloropropane	U	10	ug/L	20	1	20.	4.4	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
2,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
2-Butanone	U	50	ug/L	20	5	100	26.	50.
2-Chlorotoluene	U	10	ug/L	20	1	20.	4.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
4-Chlorotoluene	U	10	ug/L	20	1	20.	5.2	10.
P-Isopropyltoluene	U	10	ug/L	20	1	20.	5.0	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
Acetone	U	50	ug/L	20	5	100	44.	50.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
Bromobenzene	U	10	ug/L	20	1	20.	4.8	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4DL
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4746.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	10	ug/L	20	1	20.	4.2	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Dibromomethane	U	10	ug/L	20	1	20.	9.2	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
Dichlorodifluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
Hexachlorobutadiene	U	15	ug/L	20	1	20.	10.	15.
Isopropylbenzene	U	10	ug/L	20	1	20.	4.6	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
m+p-Xylenes	U	20	ug/L	20	2	40.	12.	20.
Naphthalene	U	10	ug/L	20	1	20.	6.0	10.
N-Butylbenzene	U	10	ug/L	20	1	20.	4.6	10.
N-Propylbenzene	U	10	ug/L	20	1	20.	5.2	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
sec-Butylbenzene	U	10	ug/L	20	1	20.	4.2	10.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
tert-Butylbenzene	U	10	ug/L	20	1	20.	6.2	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
trans-1,2-Dichloroethene	U	10	ug/L	20	1	20.	5.0	10.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		93.0	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4746.D
Report Date: 28-Mar-2018 09:57

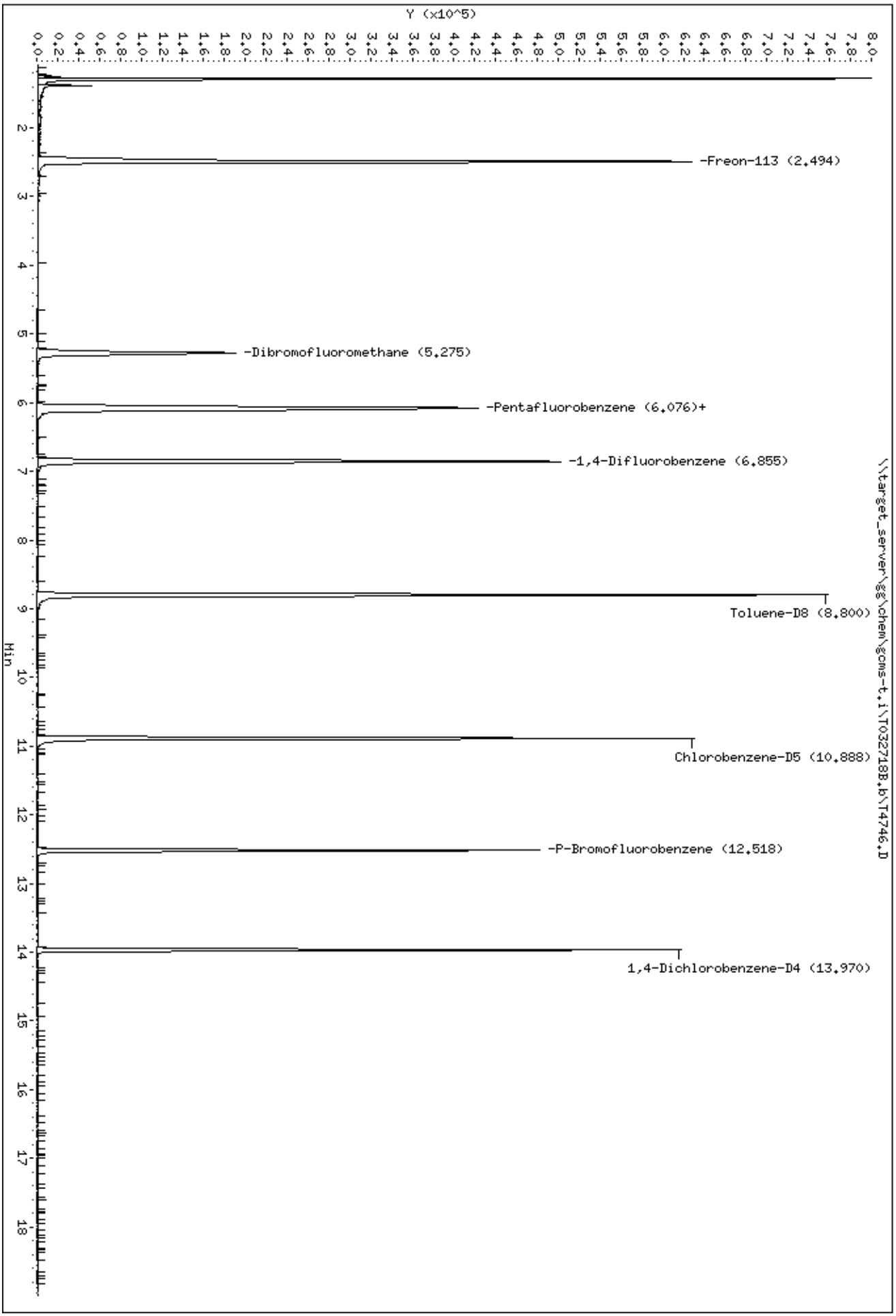
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4746.D
Lab Smp Id: SL2295-4DL Client Smp ID: HAAP-21C-LGIA-DPT08
Inj Date : 27-MAR-2018 15:41
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-4DL
Misc Info : WG225462,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 8
Dil Factor: 20.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	20.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.411)	195312	138.421	2770	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	177258	60.0283	60.0	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	293475	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	253103	62.9373	62.9	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	517839	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	613006	50.4481	50.4	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	407848	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	182624	46.4954	46.5	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	165758	50.0000		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Date : 27-MAR-2018 15:41
Client ID: HAAP-21C-LCIA-DPT08
Sample Info: SL2295-4DL
Instrument: gcms-t.i
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4746.D
Y (x10^5)
Min
-Freon-113 (2.494)
-Dibromofluoromethane (5.275)
-Pentafluorobenzene (6.076)+
-1,4-Difluorobenzene (6.855)
Toluene-D8 (8.800)
Chlorobenzene-D5 (10.888)
-P-Bromofluorobenzene (12.518)
1,4-Dichlorobenzene-D4 (13.970)

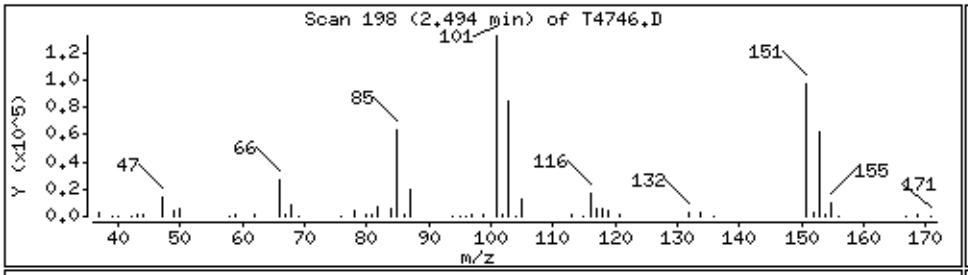
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4746.D

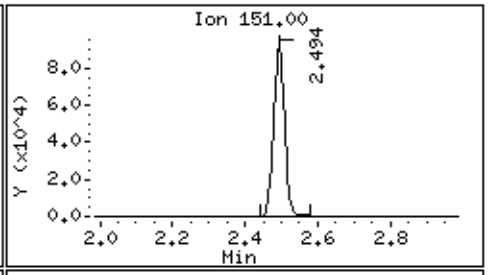
Date : 27-MAR-2018 15:41

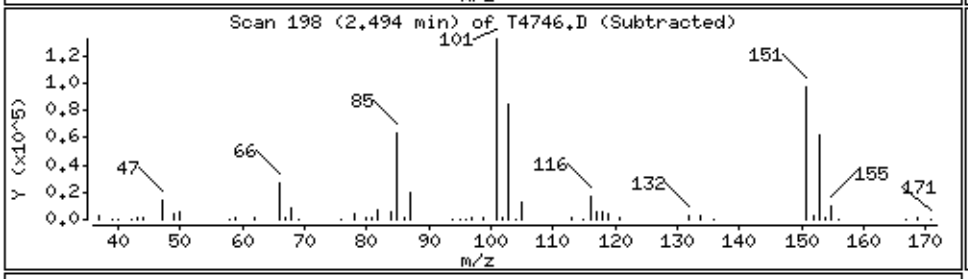
Client ID: HAAP-21C-LGIA-DPT08 Instrument: gcms-t.i

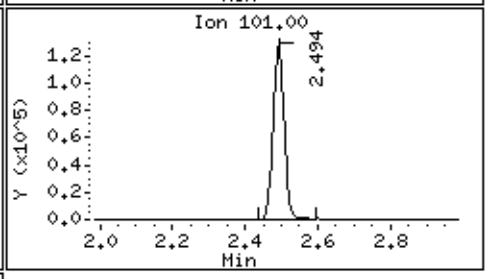
Sample Info: SL2295-4DL

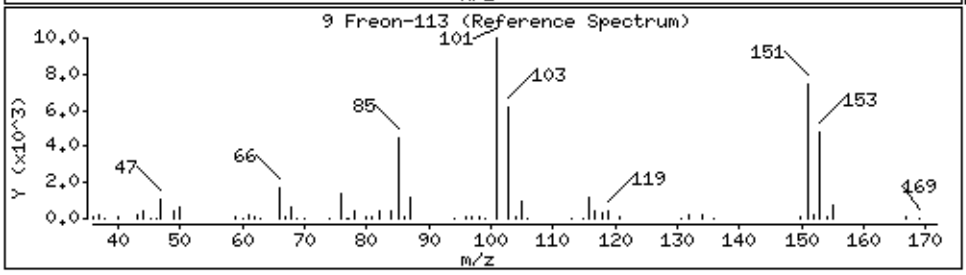
9 Freon-113 Concentration: 2770 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4RA
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4720.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	1900	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4RA
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4720.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		93.6	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4720.D
Report Date: 28-Mar-2018 09:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4720.D
Lab Smp Id: SL2295-4RA Client Smp ID: HAAP-21C-LGIA-DPT08
Inj Date : 26-MAR-2018 12:52
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-4RA
Misc Info : WG225399,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

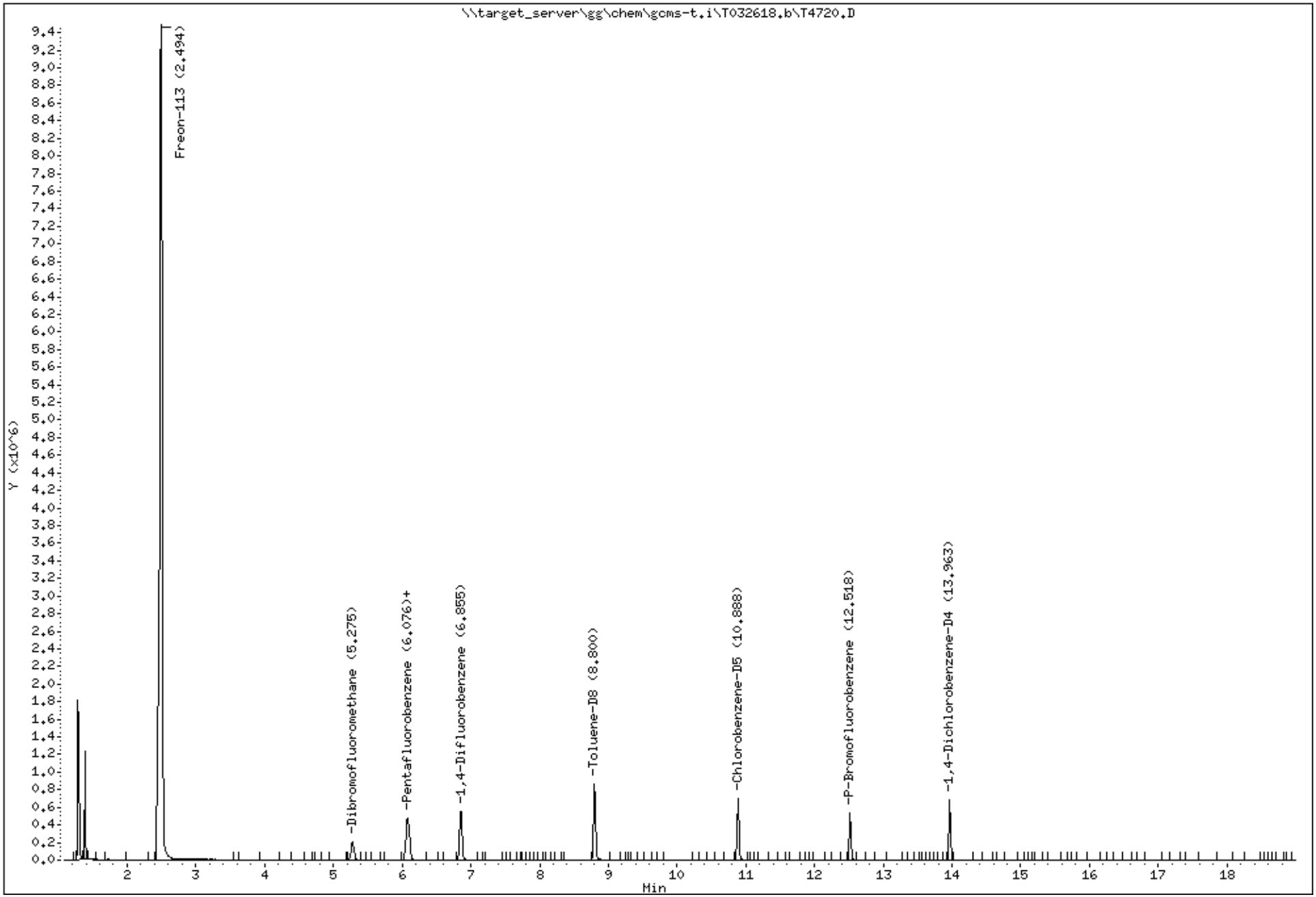
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.411)	3255700	1935.08	1940(A)	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	196370	55.7707	55.8	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	349937	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	279454	58.2777	58.3	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	587284	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	692626	50.2604	50.3	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	460555	50.0000		
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	208604	46.8297	46.8	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	188016	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4720.D
Date : 26-MAR-2018 12:52
Client ID: HAAP-21C-LGIA-DPT08 Instrument: gcms-t.i
Sample Info: SL2295-4RA



Katahdin Analytical Services 1000055

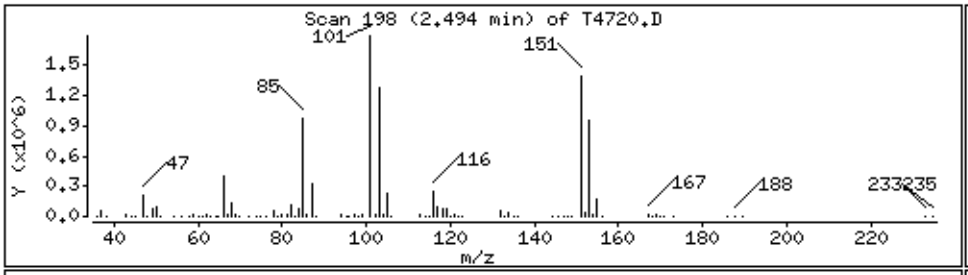
Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4720.D

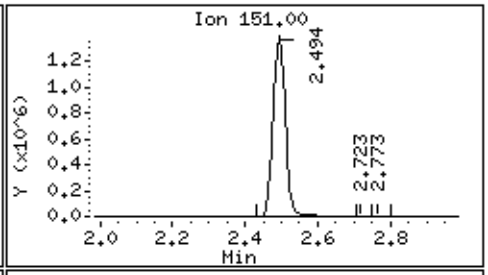
Date : 26-MAR-2018 12:52

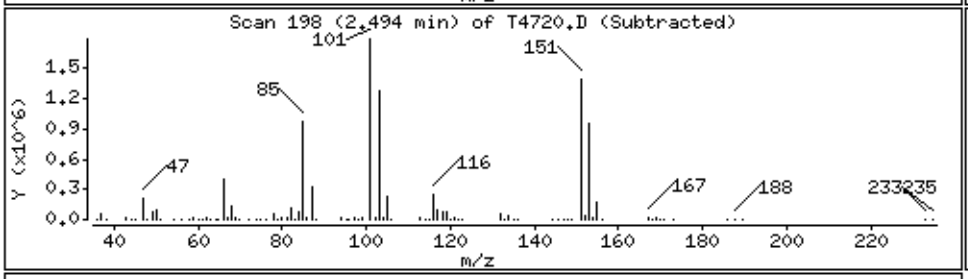
Client ID: HAAP-21C-LGIA-DPT08 Instrument: gcms-t.i

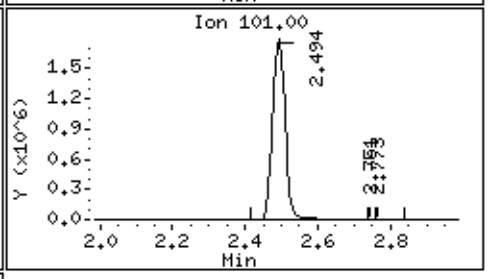
Sample Info: SL2295-4RA

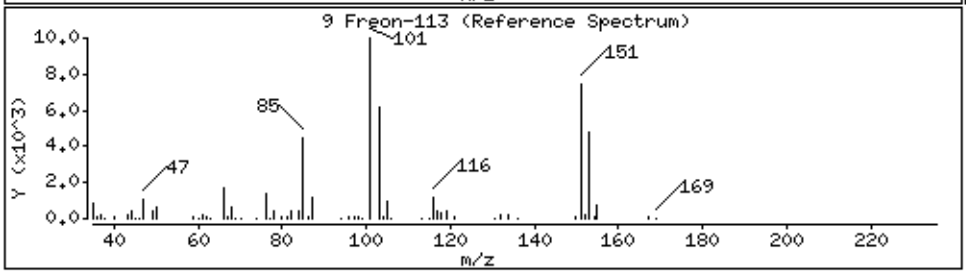
9 Freon-113 Concentration: 1940 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4896.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		11	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4896.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		114.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		96.8	%					
P-Bromofluorobenzene	*	80.9	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4896.D
Report Date: 28-Mar-2018 08:50

Katahdin Analytical Services

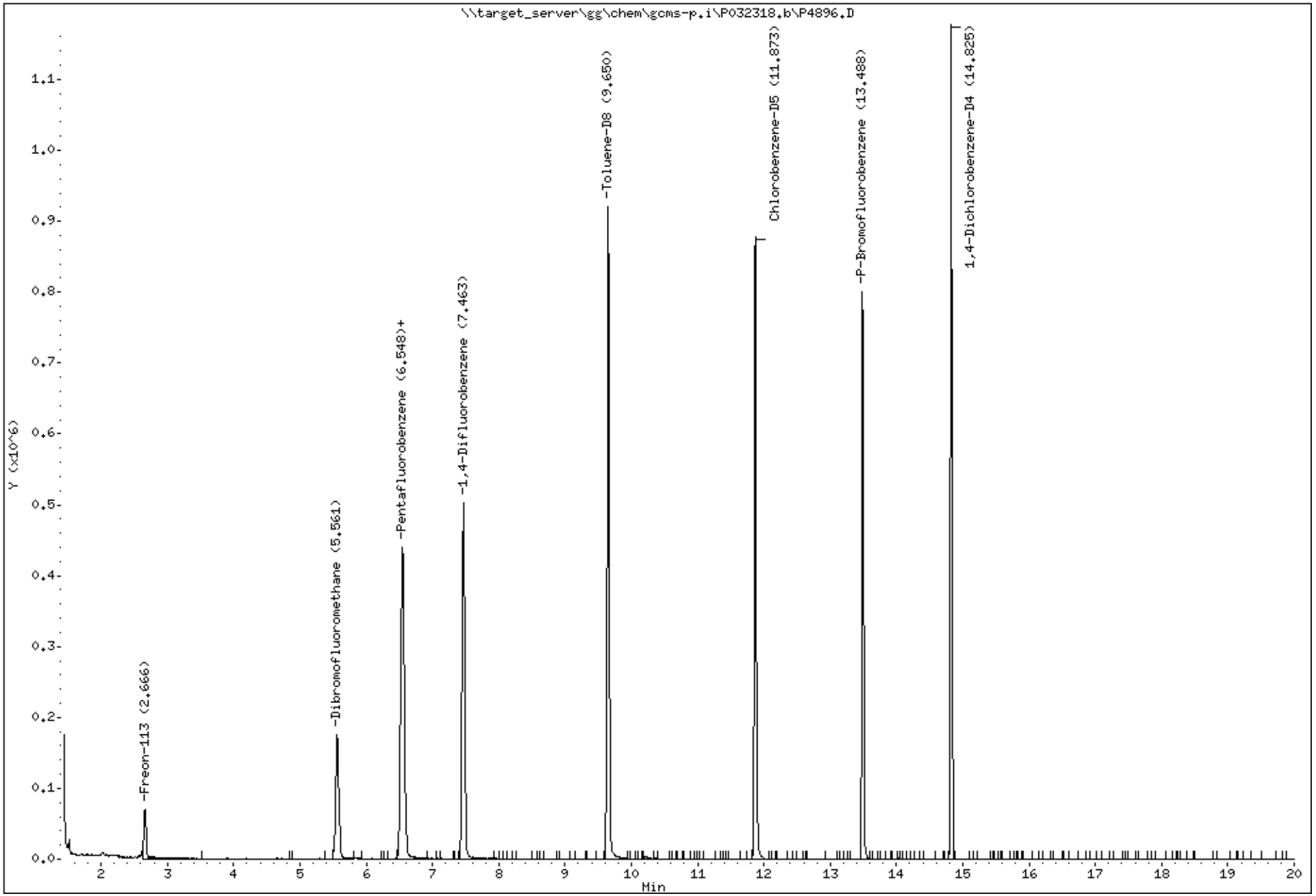
Data file : \\target_server\gg\chem\gcms-p.i\P032318.b\P4896.D
Lab Smp Id: SL2295-5 Client Smp ID: HAAP-21C-LGIA-DPT10
Inj Date : 23-MAR-2018 17:50 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-5
Misc Info : WG225300,WG225041-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032318.b\P8A05(62)D.m
Meth Date : 26-Mar-2018 12:22 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:17 Cal File: P4810.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.666	2.659	(0.408)	20061	11.1477	11.1	
$ 34	Dibromofluoromethane	113	5.561	5.561	(0.850)	176905	56.7747	56.8	
* 41	Pentafluorobenzene	168	6.540	6.533	(1.000)	317082	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.561	6.562	(1.003)	256060	57.9718	58.0	
* 48	1,4-Difluorobenzene	114	7.469	7.463	(1.000)	592461	50.0000		
$ 58	Toluene-D8	98	9.649	9.650	(1.292)	727211	48.4251	48.4	
* 68	Chlorobenzene-D5	117	11.872	11.873	(1.000)	572652	50.0000		
$ 78	P-Bromofluorobenzene	95	13.488	13.488	(1.806)	264368	40.4491	40.4	
* 94	1,4-Dichlorobenzene-D4	152	14.825	14.825	(1.000)	289257	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4896.D
Date : 23-MAR-2018 17:50
Client ID: HAAP-21C-LGIA-DPT10 Instrument: gcms-p.i
Sample Info: SL2295-5



Katahdin Analytical Services 1000060

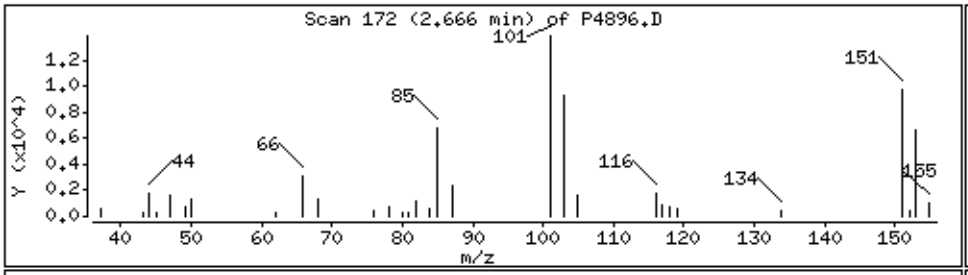
Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4896.D

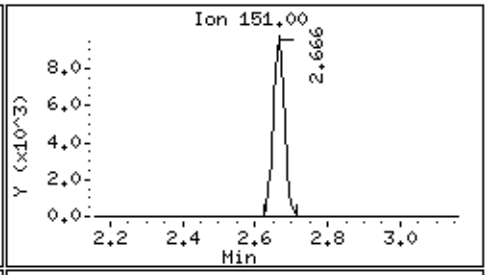
Date : 23-MAR-2018 17:50

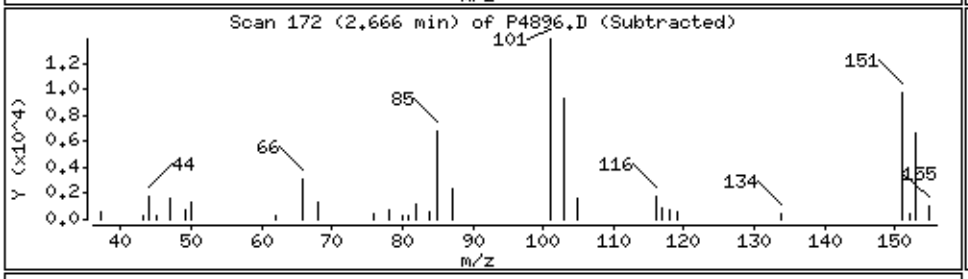
Client ID: HAAP-21C-LGIA-DPT10 Instrument: gcms-p.i

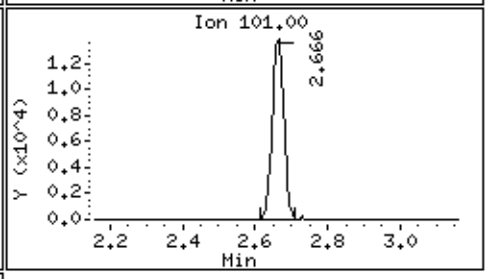
Sample Info: SL2295-5

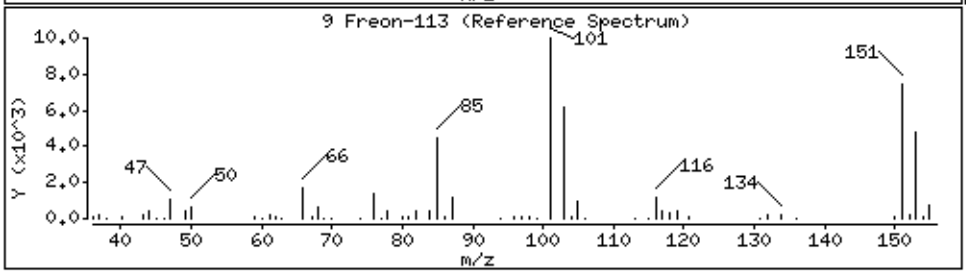
9 Freon-113 Concentration: 11.1 ug/l











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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5RA2
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4750.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		8.6	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5RA2
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4750.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.9	%					
P-Bromofluorobenzene		95.8	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4750.D
Report Date: 28-Mar-2018 09:57

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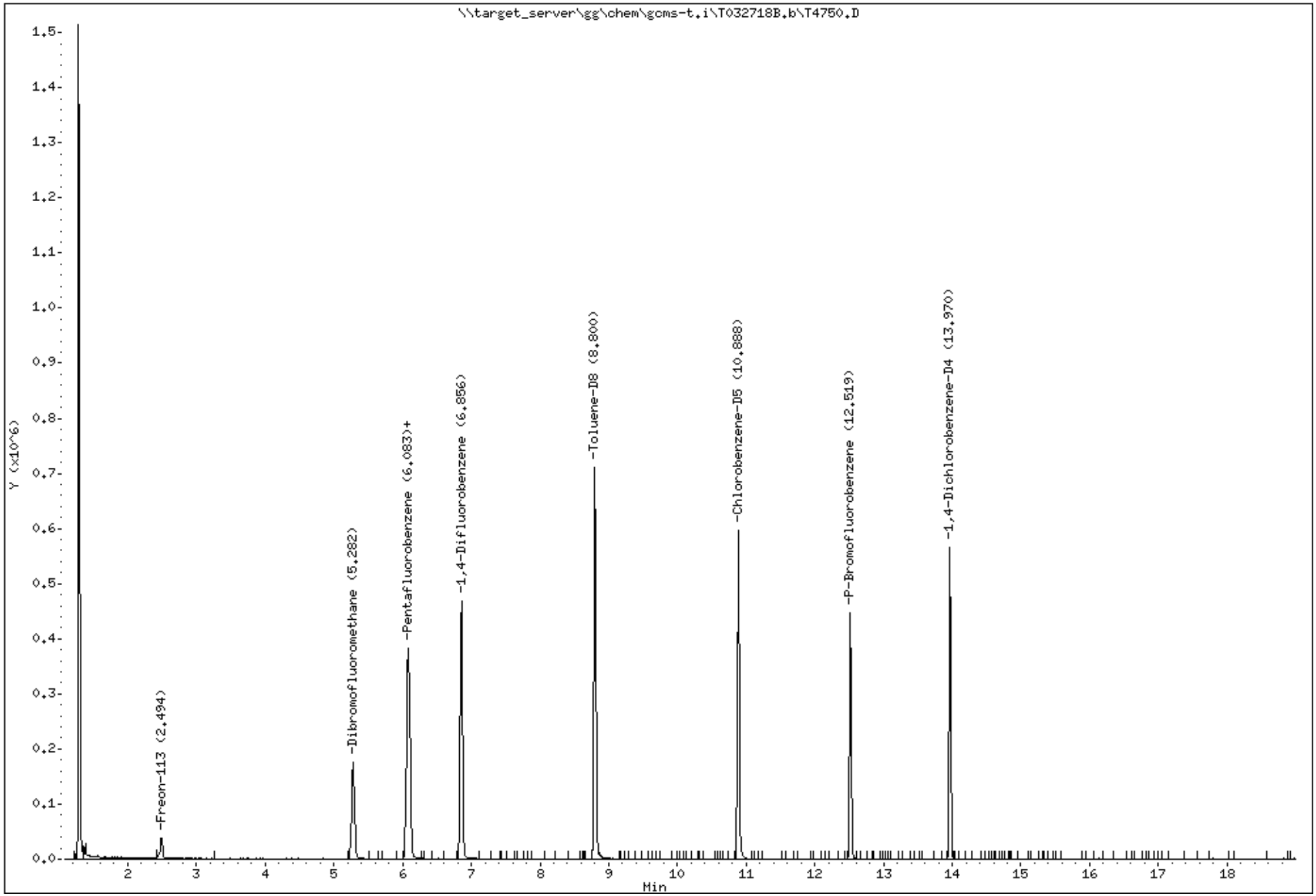
Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4750.D
Lab Smp Id: SL2295-5RA2 Client Smp ID: HAAP-21C-LGIA-DPT10
Inj Date : 27-MAR-2018 18:08
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-5RA2
Misc Info : WG225462,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.493	2.486	(0.410)	10948	8.55548	8.6	
$ 34	Dibromofluoromethane	113	5.275	5.275	(0.868)	160395	59.8932	59.9	
* 41	Pentafluorobenzene	168	6.076	6.068	(1.000)	266155	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.004)	229080	62.8108	62.8	
* 48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	467259	50.0000		
$ 58	Toluene-D8	98	8.800	8.800	(1.284)	547929	49.9737	50.0	
* 68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	372014	50.0000		
$ 78	P-Bromofluorobenzene	95	12.518	12.511	(1.826)	169730	47.8904	47.9	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	153685	50.0000		

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4750.D
Date : 27-MAR-2018 18:08
Client ID: HAAP-21C-LGIA-DPT10 Instrument: gcms-t.i
Sample Info: SL2295-5RA2



Katahdin Analytical Services 1000065

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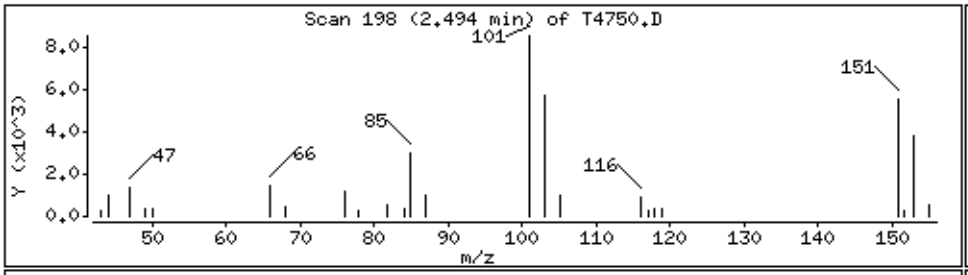
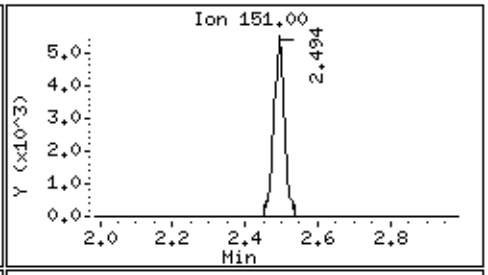
Date : 27-MAR-2018 18:08

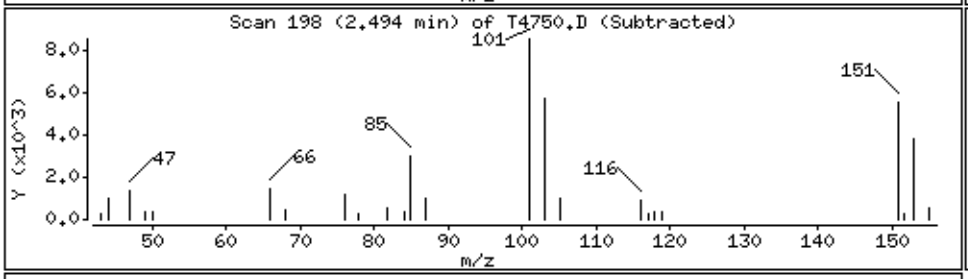
Client ID: HAAP-21C-LGIA-DPT10 Instrument: gcms-t.i

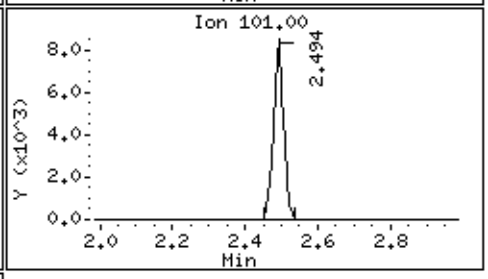
Sample Info: SL2295-5RA2

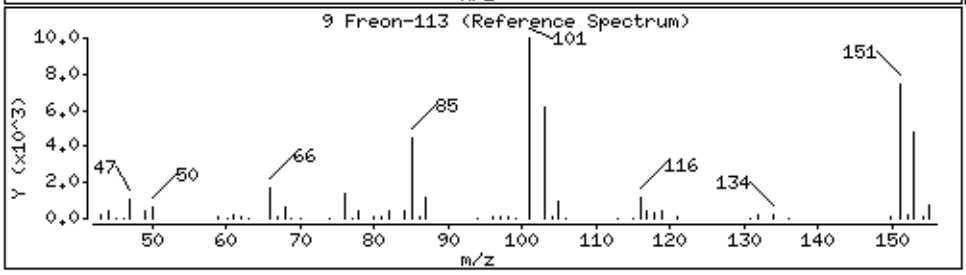
9 Freon-113 Concentration: 8.6 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6DL
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4744.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	50	ug/L	100	1	100	19.	50.
1,1,1-Trichloroethane	U	50	ug/L	100	1	100	20.	50.
1,1,2,2-Tetrachloroethane	U	50	ug/L	100	1	100	38.	50.
Freon-113		4800	ug/L	100	1	100	31.	50.
1,1,2-Trichloroethane	U	50	ug/L	100	1	100	33.	50.
1,1-Dichloroethane	U	50	ug/L	100	1	100	21.	50.
1,1-Dichloroethene	U	50	ug/L	100	1	100	35.	50.
1,1-Dichloropropene	U	50	ug/L	100	1	100	21.	50.
1,2,3-Trichlorobenzene	U	50	ug/L	100	1	100	27.	50.
1,2,3-Trichloropropane	U	50	ug/L	100	1	100	19.	50.
1,2,4-Trichlorobenzene	U	50	ug/L	100	1	100	37.	50.
1,2,4-Trimethylbenzene	U	50	ug/L	100	1	100	19.	50.
1,2-Dibromo-3-Chloropropane	U	50	ug/L	100	1	100	50.	50.
1,2-Dichlorobenzene	U	50	ug/L	100	1	100	15.	50.
1,2-Dichloroethane	U	50	ug/L	100	1	100	20.	50.
1,2-Dichloropropane	U	50	ug/L	100	1	100	25.	50.
1,3,5-Trimethylbenzene	U	50	ug/L	100	1	100	20.	50.
1,3-Dichlorobenzene	U	50	ug/L	100	1	100	26.	50.
1,3-Dichloropropane	U	50	ug/L	100	1	100	22.	50.
1,4-Dichlorobenzene	U	50	ug/L	100	1	100	24.	50.
2,2-Dichloropropane	U	50	ug/L	100	1	100	25.	50.
2-Butanone	U	250	ug/L	100	5	500	130	250
2-Chlorotoluene	U	50	ug/L	100	1	100	20.	50.
2-Hexanone	U	250	ug/L	100	5	500	170	250
4-Chlorotoluene	U	50	ug/L	100	1	100	26.	50.
P-Isopropyltoluene	U	50	ug/L	100	1	100	25.	50.
4-Methyl-2-Pentanone	U	250	ug/L	100	5	500	130	250
Acetone	U	250	ug/L	100	5	500	220	250
Benzene	U	50	ug/L	100	1	100	26.	50.
Bromobenzene	U	50	ug/L	100	1	100	24.	50.
Bromoform	U	50	ug/L	100	1	100	23.	50.
Bromomethane	U	100	ug/L	100	2	200	49.	100
Carbon Disulfide	U	50	ug/L	100	1	100	25.	50.
Carbon Tetrachloride	U	50	ug/L	100	1	100	22.	50.
Chlorobenzene	U	50	ug/L	100	1	100	22.	50.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6DL
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4744.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	50	ug/L	100	1	100	21.	50.
Dibromochloromethane	U	50	ug/L	100	1	100	30.	50.
Chloroethane	U	100	ug/L	100	2	200	55.	100
Chloroform	U	50	ug/L	100	1	100	32.	50.
Chloromethane	U	100	ug/L	100	2	200	36.	100
cis-1,2-Dichloroethene	U	50	ug/L	100	1	100	21.	50.
cis-1,3-Dichloropropene	U	50	ug/L	100	1	100	19.	50.
Dibromomethane	U	50	ug/L	100	1	100	46.	50.
Bromodichloromethane	U	50	ug/L	100	1	100	33.	50.
Dichlorodifluoromethane	U	100	ug/L	100	2	200	24.	100
Ethylbenzene	U	50	ug/L	100	1	100	21.	50.
1,2-Dibromoethane	U	50	ug/L	100	1	100	22.	50.
Hexachlorobutadiene	U	75	ug/L	100	1	100	52.	75.
Isopropylbenzene	U	50	ug/L	100	1	100	23.	50.
Methyl tert-butyl Ether	U	50	ug/L	100	1	100	36.	50.
Methylene Chloride	U	250	ug/L	100	5	500	110	250
m+p-Xylenes	U	100	ug/L	100	2	200	59.	100
Naphthalene	U	50	ug/L	100	1	100	30.	50.
N-Butylbenzene	U	50	ug/L	100	1	100	23.	50.
N-Propylbenzene	U	50	ug/L	100	1	100	26.	50.
o-Xylene	U	50	ug/L	100	1	100	25.	50.
sec-Butylbenzene	U	50	ug/L	100	1	100	21.	50.
Styrene	U	50	ug/L	100	1	100	23.	50.
tert-Butylbenzene	U	50	ug/L	100	1	100	31.	50.
Tetrachloroethene	U	50	ug/L	100	1	100	40.	50.
Toluene	U	50	ug/L	100	1	100	27.	50.
trans-1,2-Dichloroethene	U	50	ug/L	100	1	100	25.	50.
trans-1,3-Dichloropropene	U	50	ug/L	100	1	100	20.	50.
Trichloroethene	U	50	ug/L	100	1	100	28.	50.
Trichlorofluoromethane	U	100	ug/L	100	2	200	24.	100
Vinyl Chloride	U	100	ug/L	100	2	200	25.	100
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		91.9	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4744.D
Report Date: 28-Mar-2018 09:57

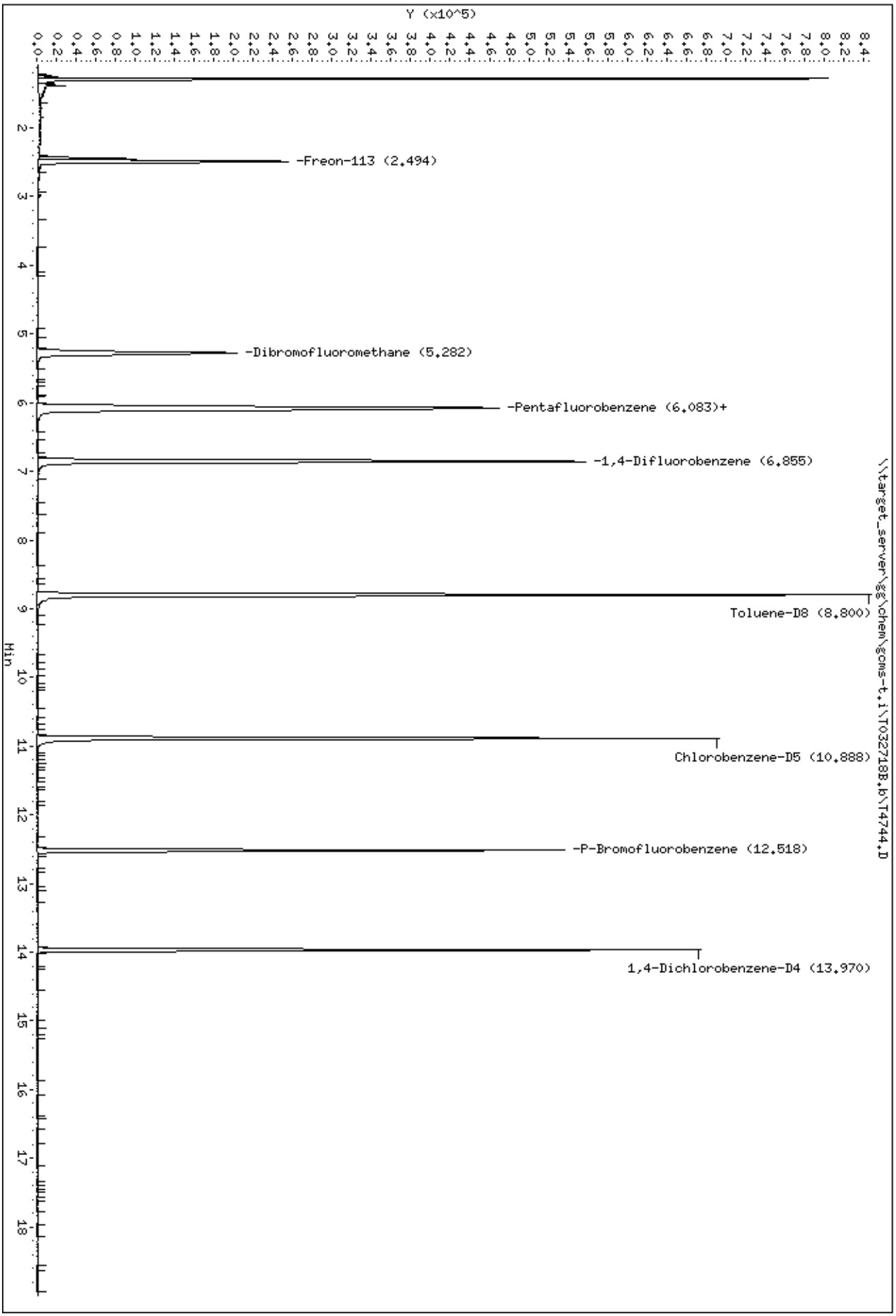
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4744.D
Lab Smp Id: SL2295-6DL Client Smp ID: HAAP-21C-LGIA-DPT12
Inj Date : 27-MAR-2018 14:28
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-6DL
Misc Info : WG225462,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 6
Dil Factor: 100.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	100.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.411)	78872	48.4269	4840	
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	192323	56.4250	56.4	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	338751	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	273679	58.9580	59.0	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	576041	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	680265	50.3269	50.3	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	448340	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	200854	45.9700	46.0	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	178307	50.0000		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Date : 27-MAR-2018 14:28
Client ID: HAAP-21C-LCIA-DPT12
Sample Info: SL2295-6DL
Instrument: gcms-t.i
Y (x10^5)
Min
-Freon-113 (2.494)
-Dibromofluoromethane (5.282)
-Pentafluorobenzene (6.083)+
-1,4-Difluorobenzene (6.855)
Toluene-D8 (8.800)
Chlorobenzene-D5 (10.888)
-P-Bromofluorobenzene (12.518)
1,4-Dichlorobenzene-D4 (13.970)
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4744.D

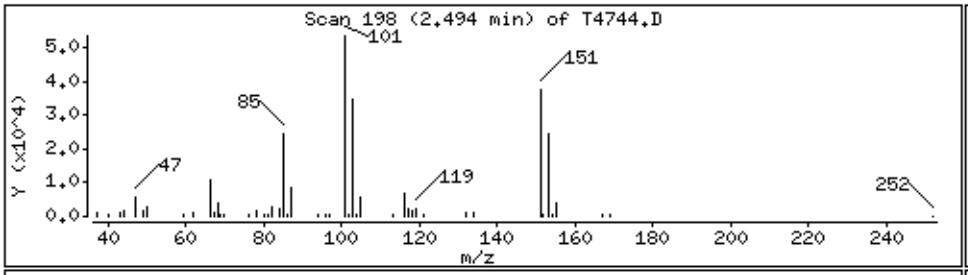
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4744.D

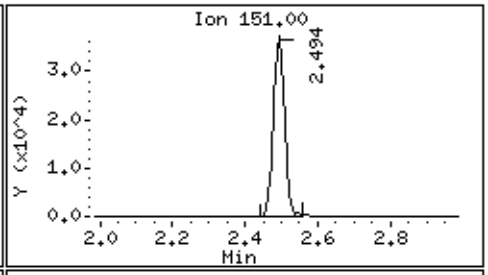
Date : 27-MAR-2018 14:28

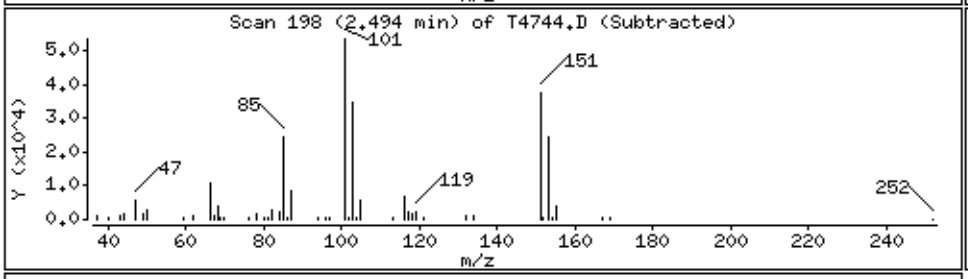
Client ID: HAAP-21C-LGIA-DPT12 Instrument: gcms-t.i

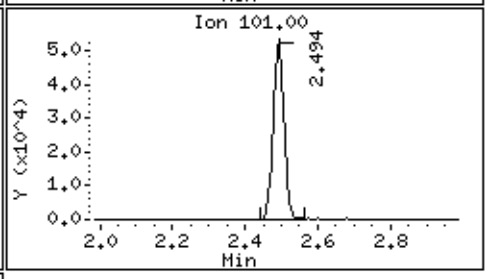
Sample Info: SL2295-6DL

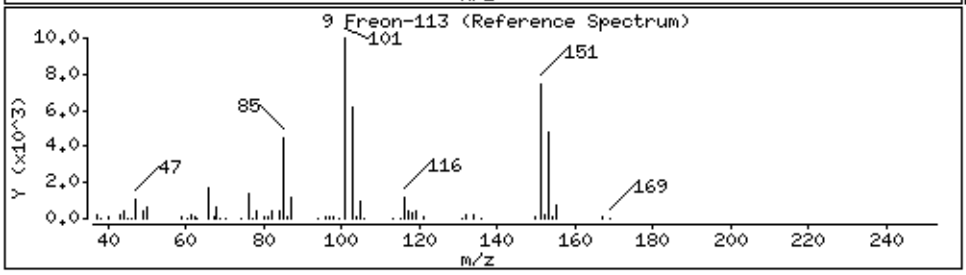
9 Freon-113 Concentration: 4840 ug/l











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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6RA
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4722.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	3400	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6RA
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4722.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	J	0.53	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		116.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		90.5	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4722.D
Report Date: 28-Mar-2018 09:35

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Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4722.D
Lab Smp Id: SL2295-6RA Client Smp ID: HAAP-21C-LGIA-DPT12
Inj Date : 26-MAR-2018 14:05
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-6RA
Misc Info : WG225399,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.411)	5302581	3435.80	3440(A)	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	187997	58.2061	58.2	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	320999	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	271871	61.8075	61.8	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	557521	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	654047	49.9946	50.0	
	59 Toluene	92	8.864	8.864	(1.293)	4480	0.53139	0.53(a)	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	431933	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	191312	45.2406	45.2	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	175260	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
    exceeded maximum amount.

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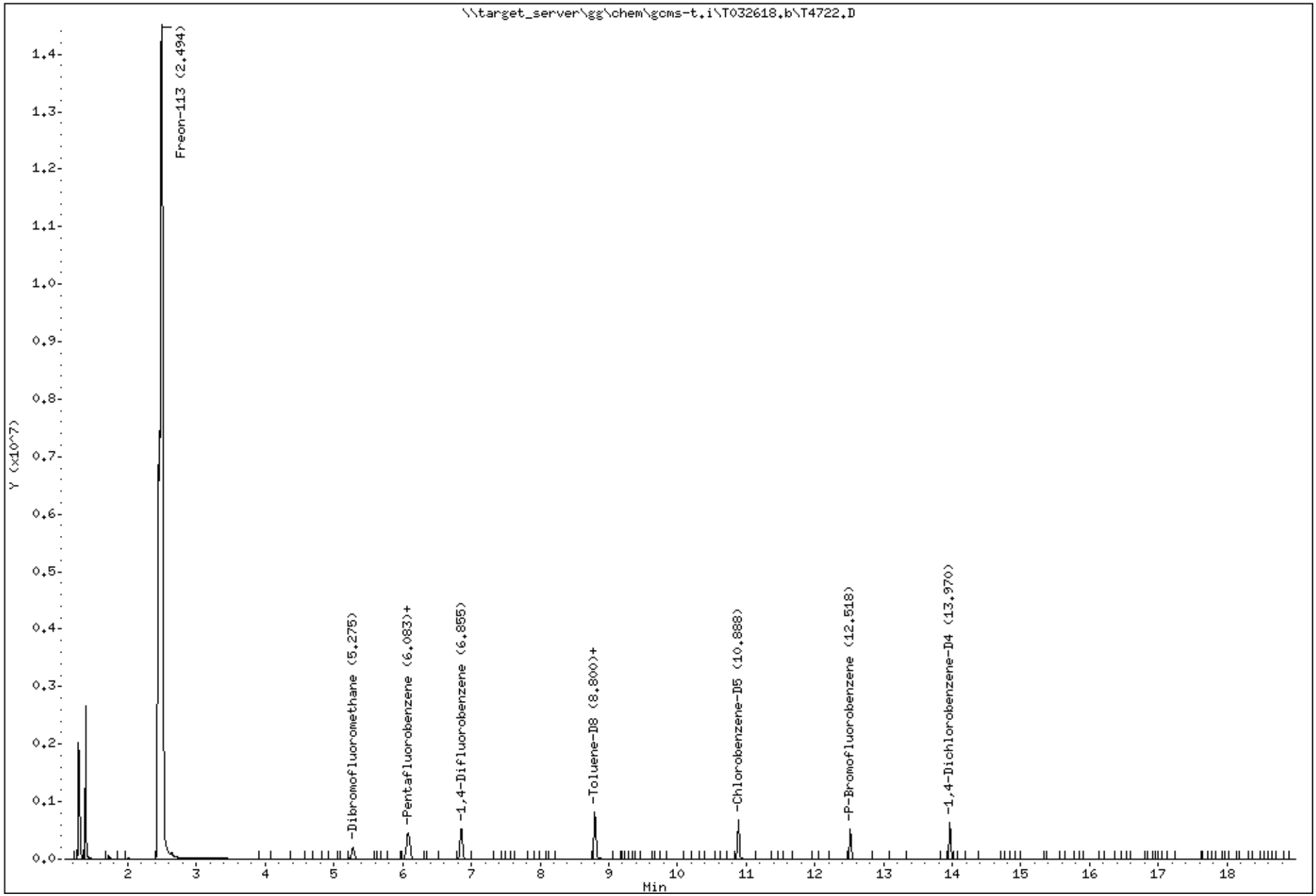
Date : 26-MAR-2018 14:05
Client ID: HAAP-21C-LGIA-DPT12 Instrument: gcms-t.i
Sample Info: SL2295-6RA



Katahdin Analytical Services 1000075

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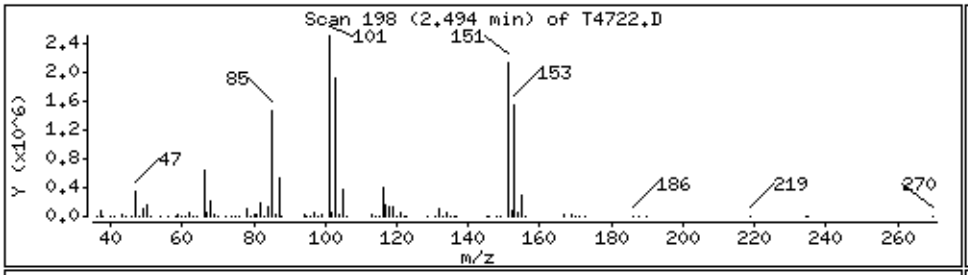
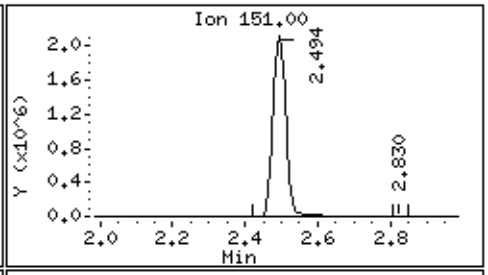
Date : 26-MAR-2018 14:05

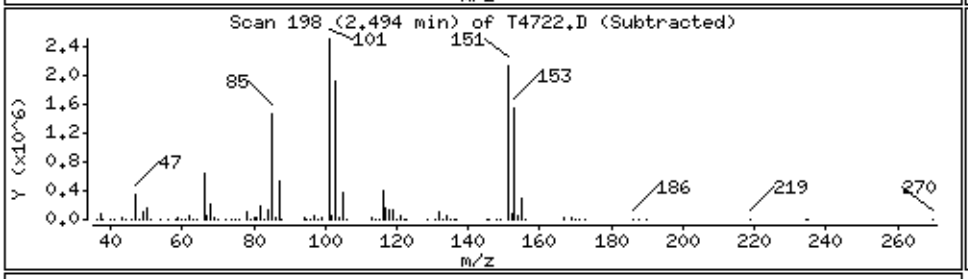
Client ID: HAAP-21C-LGIA-DPT12 Instrument: gcms-t.i

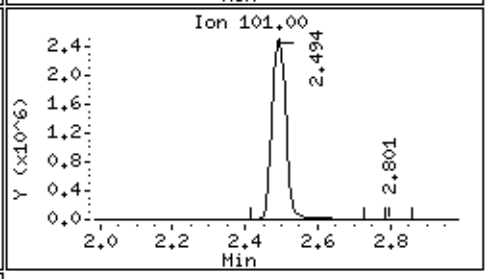
Sample Info: SL2295-6RA

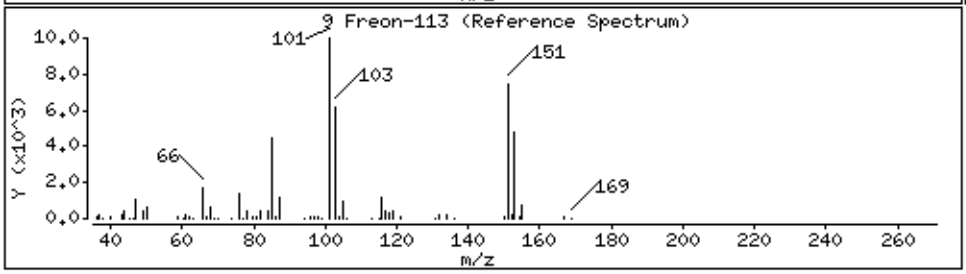
9 Freon-113 Concentration: 3440 ug/l



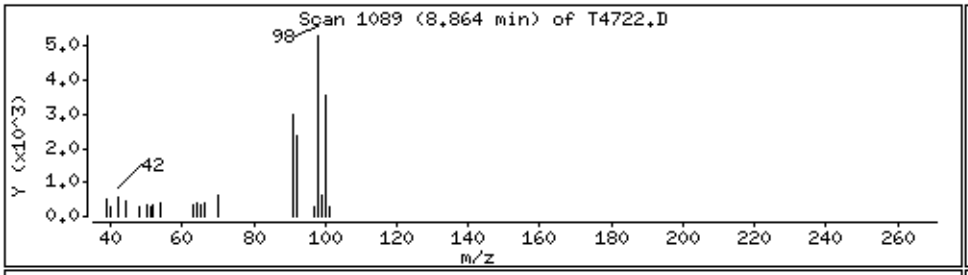


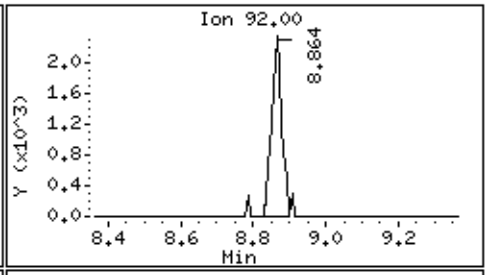


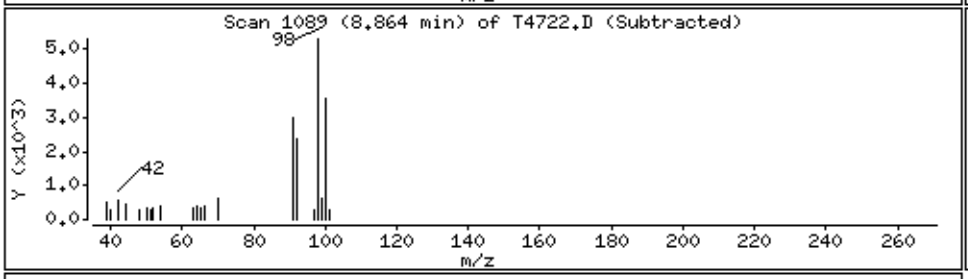


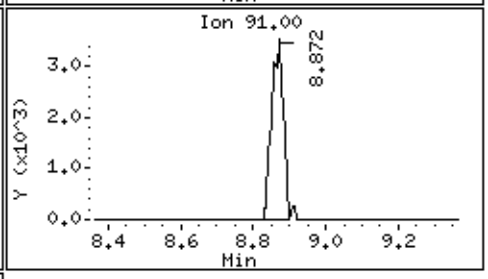


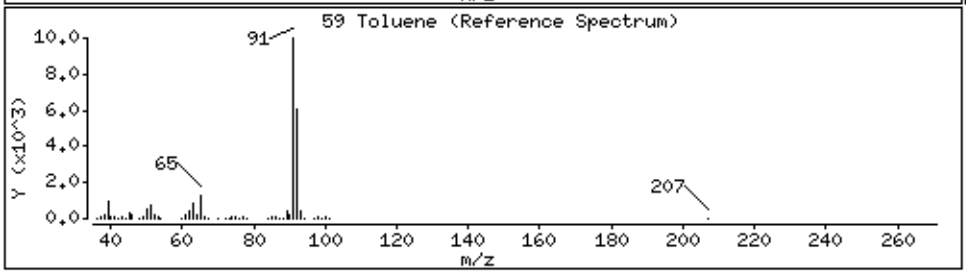
59 Toluene Concentration: 0.53 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4723.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		43	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4723.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		115.	%					
1,2-Dichloroethane-d4	*	122.	%					
Toluene-d8		99.8	%					
P-Bromofluorobenzene		91.2	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4723.D
Report Date: 28-Mar-2018 09:35

Katahdin Analytical Services

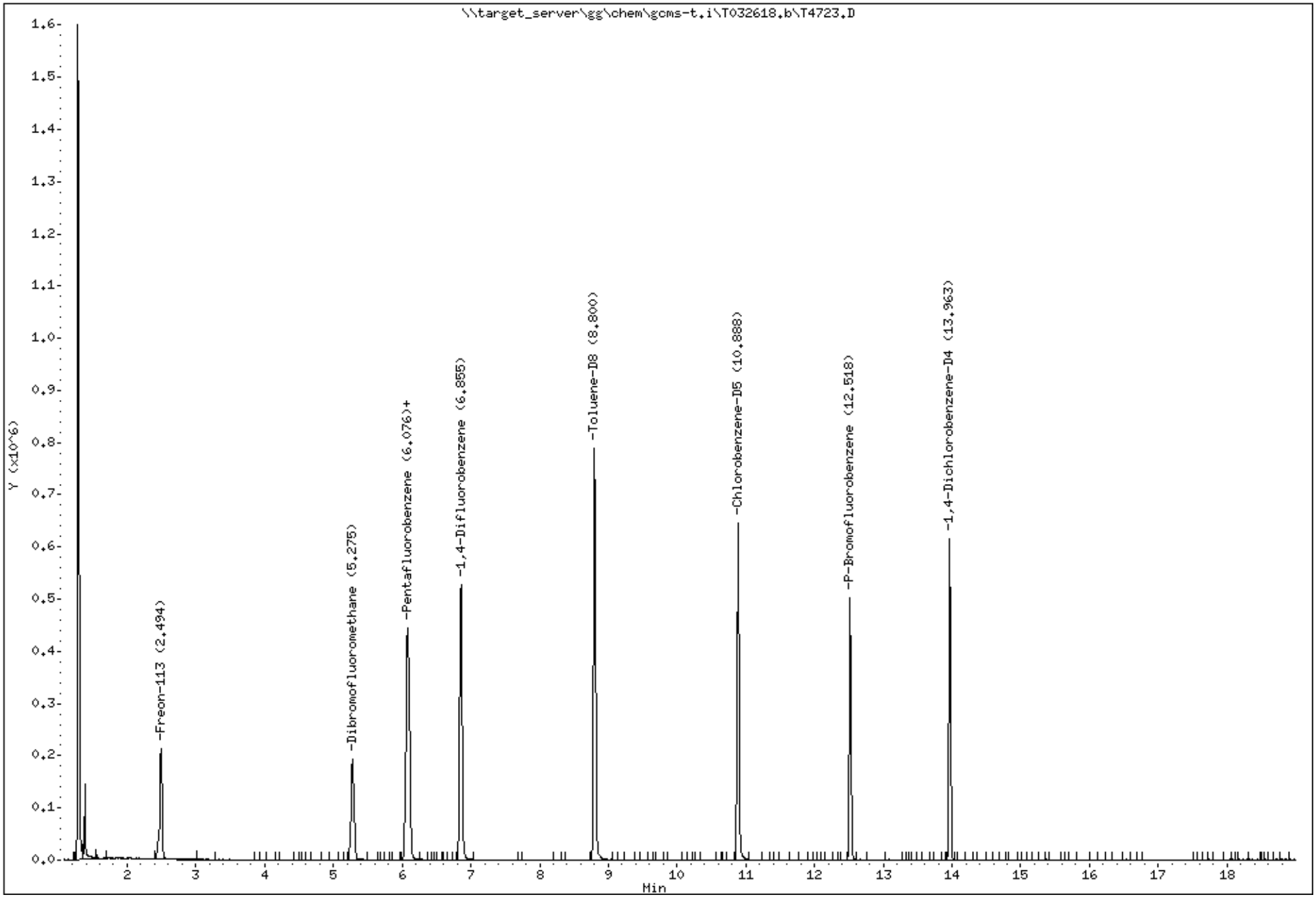
Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4723.D
Lab Smp Id: SL2295-7 Client Smp ID: HAAP-21C-LGIA-DPT14
Inj Date : 26-MAR-2018 14:42
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-7
Misc Info : WG225399,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9 Freon-113	151	2.493	2.486	(0.411)	65797	43.3413	43.3	
$ 34 Dibromofluoromethane	113	5.275	5.275	(0.869)	182592	57.4717	57.5	
* 41 Pentafluorobenzene	168	6.068	6.068	(1.000)	315754	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	262886	60.7576	60.8	
* 48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	551551	50.0000		
$ 58 Toluene-D8	98	8.800	8.800	(1.284)	646118	49.9231	49.9	
* 68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	431454	50.0000		
$ 78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	190789	45.6053	45.6	
* 94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	174898	50.0000		

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4723.D
Date : 26-MAR-2018 14:42
Client ID: HAAP-21C-LGIA-DPT14 Instrument: gcms-t.i
Sample Info: SL2295-7



Katahdin Analytical Services 1000080

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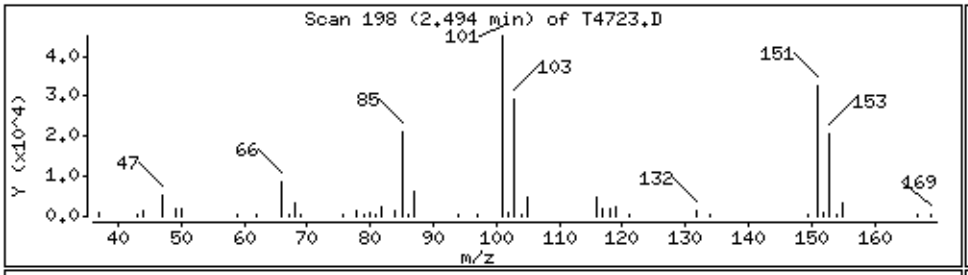
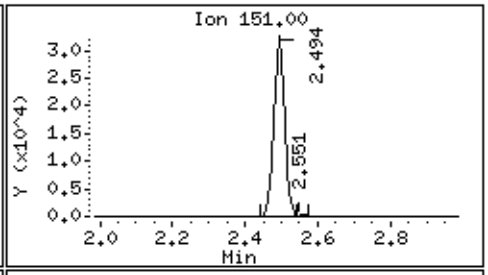
Date : 26-MAR-2018 14:42

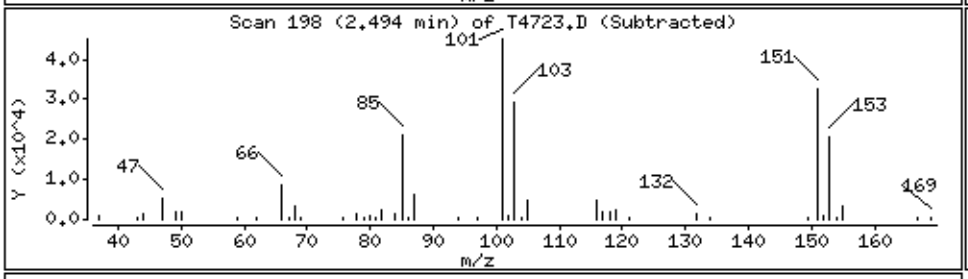
Client ID: HAAP-21C-LGIA-DPT14 Instrument: gcms-t.i

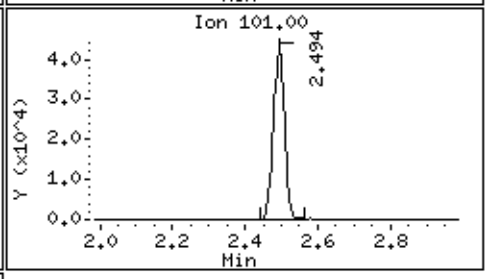
Sample Info: SL2295-7

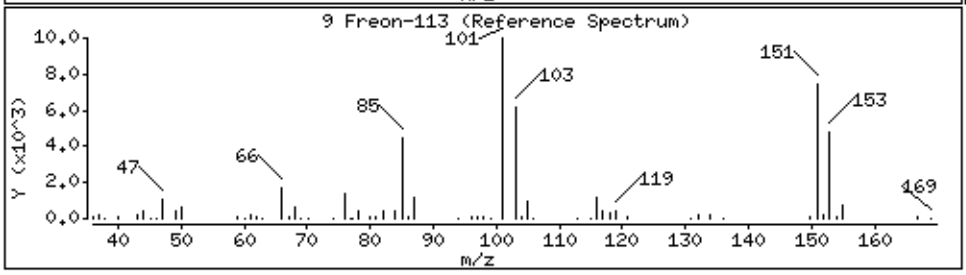
9 Freon-113 Concentration: 43.3 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7RA
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4751.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		42	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7RA
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4751.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	128.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		92.7	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4751.D
Report Date: 28-Mar-2018 09:57

Katahdin Analytical Services

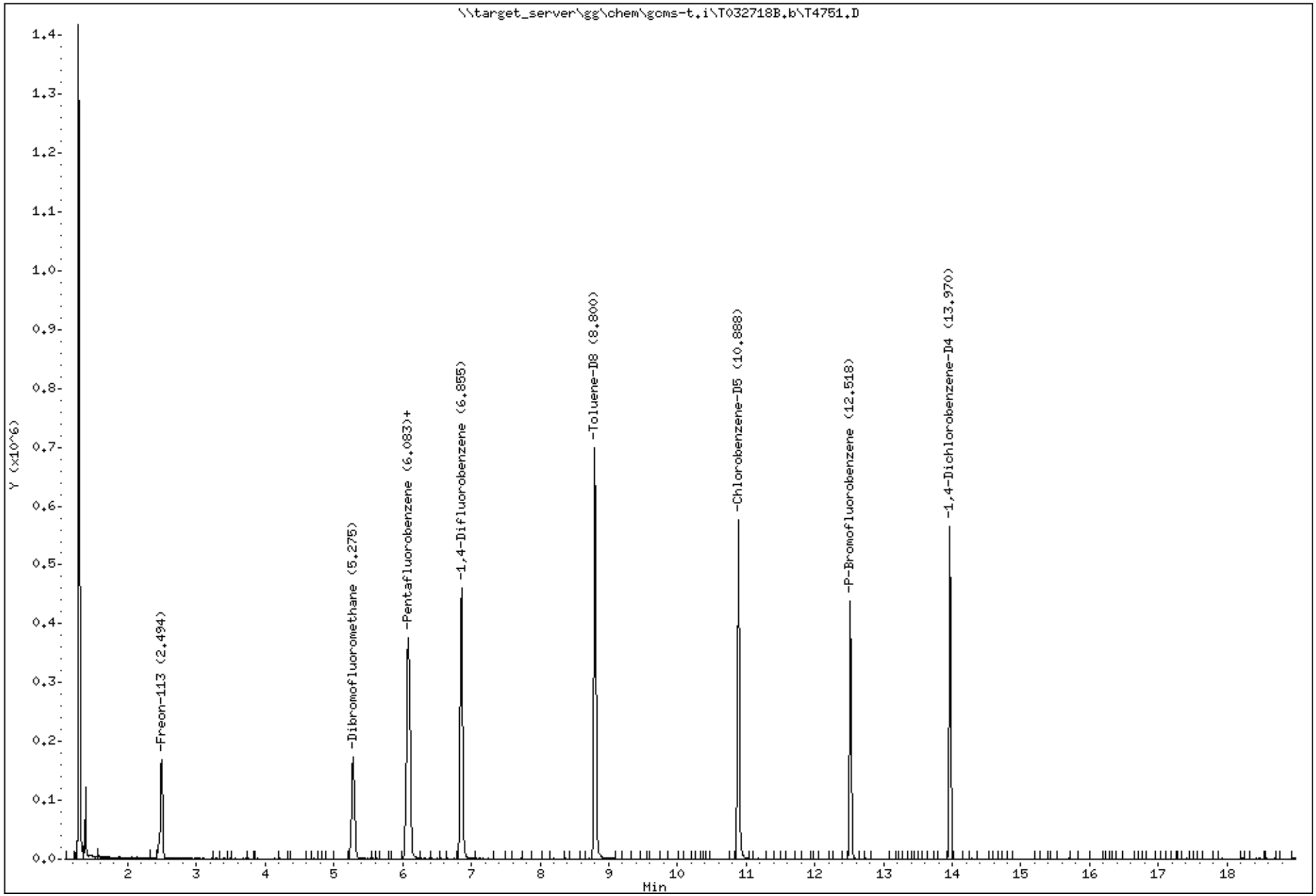
Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4751.D
Lab Smp Id: SL2295-7RA Client Smp ID: HAAP-21C-LGIA-DPT14
Inj Date : 27-MAR-2018 18:45
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-7RA
Misc Info : WG225462,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.410)	52748	41.6297	41.6	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.868)	158736	59.8618	59.9	
*	41 Pentafluorobenzene	168	6.076	6.068	(1.000)	263540	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.004)	231095	63.9921	64.0	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	468675	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	559402	50.8660	50.9	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	370677	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	164839	46.3698	46.4	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	151180	50.0000		

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4751.D
Date : 27-MAR-2018 18:45
Client ID: HAAP-21C-LGIA-DPT14 Instrument: gcms-t.i
Sample Info: SL2295-7RA



Katahdin Analytical Services 1000085

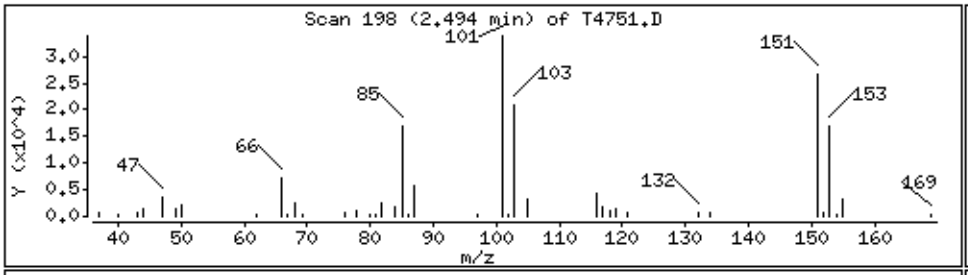
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4751.D

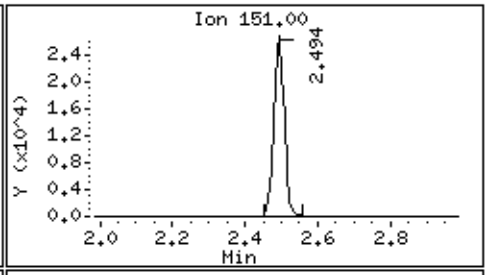
Date : 27-MAR-2018 18:45

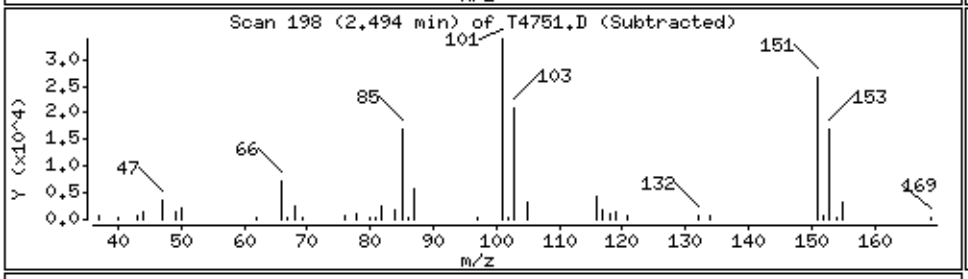
Client ID: HAAP-21C-LGIA-DPT14 Instrument: gcms-t.i

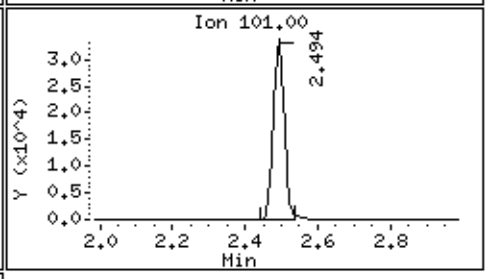
Sample Info: SL2295-7RA

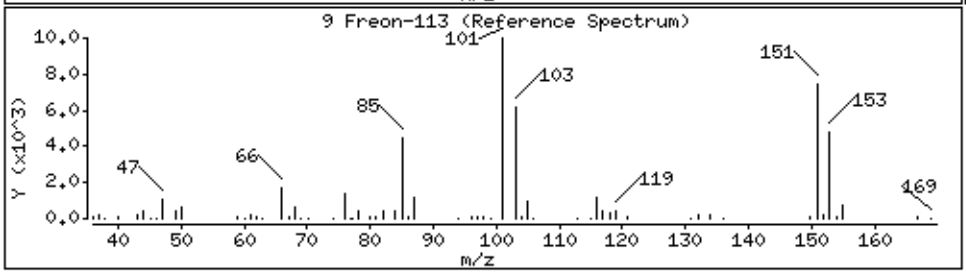
9 Freon-113 Concentration: 41.6 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-8RA
Client ID: CHAAP-21C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4972.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-8RA
Client ID: CHAAP-21C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4972.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		108.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		99.4	%					
P-Bromofluorobenzene		94.6	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4972.D
Report Date: 04-Apr-2018 05:26

Katahdin Analytical Services

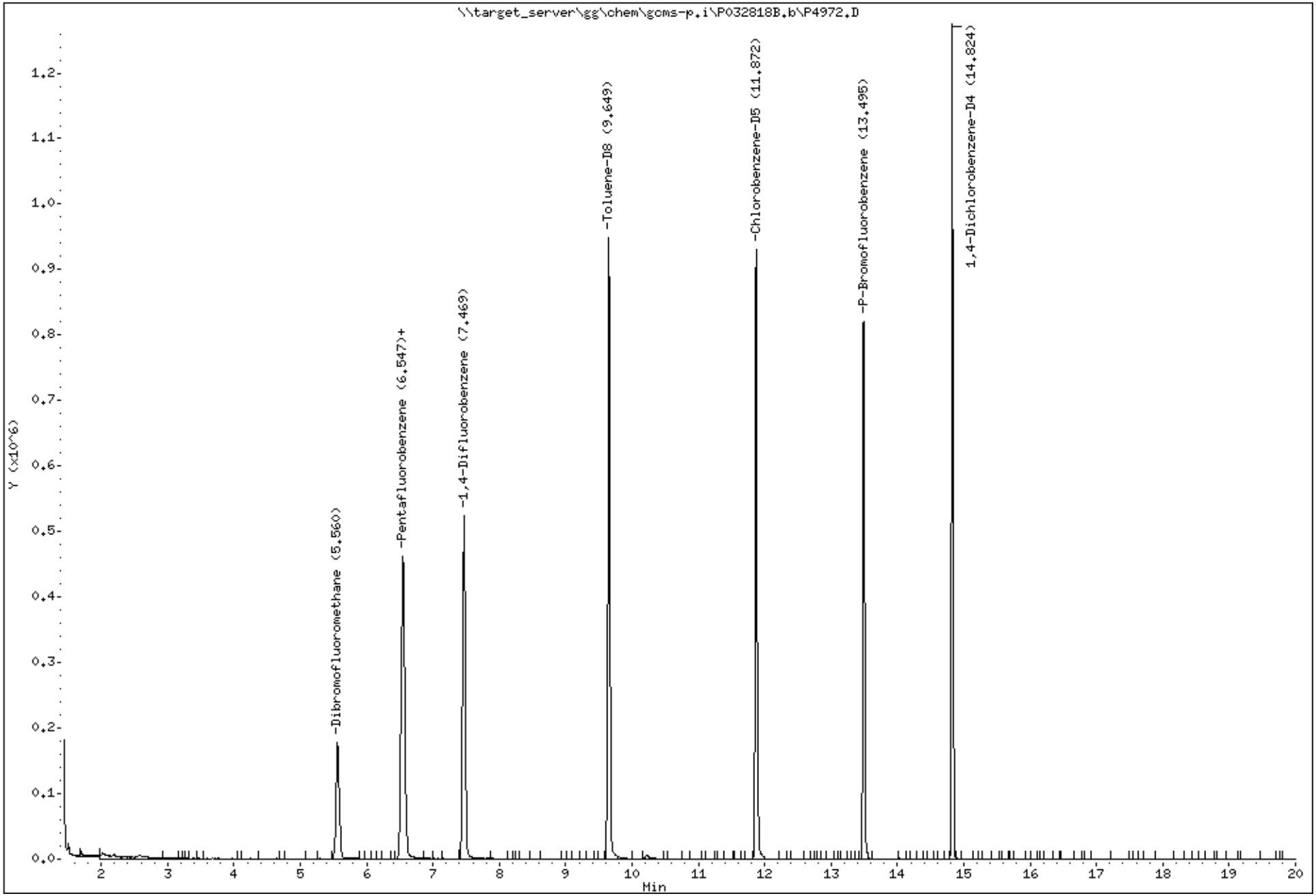
Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4972.D
Lab Smp Id: SL2295-8RA Client Smp ID: HAAP-21C-LGIA-DPT16
Inj Date : 28-MAR-2018 13:21 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-8RA
Misc Info : WG225530,WG225349-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 04-Apr-2018 05:23 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$ 34 Dibromofluoromethane	113	5.560	5.561	(0.850)	179496	54.0856	54.1	
* 41 Pentafluorobenzene	168	6.539	6.541	(1.000)	341680	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.561	6.569	(1.003)	268554	57.2633	57.3	
* 48 1,4-Difluorobenzene	114	7.468	7.470	(1.000)	609127	50.0000		
$ 58 Toluene-D8	98	9.649	9.650	(1.292)	746784	49.7015	49.7	
* 68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	597150	50.0000		
$ 78 P-Bromofluorobenzene	95	13.494	13.496	(1.807)	281322	47.3012	47.3	
* 94 1,4-Dichlorobenzene-D4	152	14.831	14.832	(1.000)	307078	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4972.D
Date : 28-MAR-2018 13:21
Client ID: HAAP-21C-LGIA-DPT16 Instrument: gcms-p.i
Sample Info: SL2295-8RA



Katahdin Analytical Services 1000090

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-9RA
Client ID: CHAAP-21C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4973.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	J	4.3	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-9RA
Client ID: CHAAP-21C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4973.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		93.8	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4973.D
Report Date: 04-Apr-2018 05:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4973.D
Lab Smp Id: SL2295-9RA Client Smp ID: HAAP-21C-LGIA-DPT18
Inj Date : 28-MAR-2018 13:55 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-9RA
Misc Info : WG225530,WG225349-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 04-Apr-2018 05:23 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

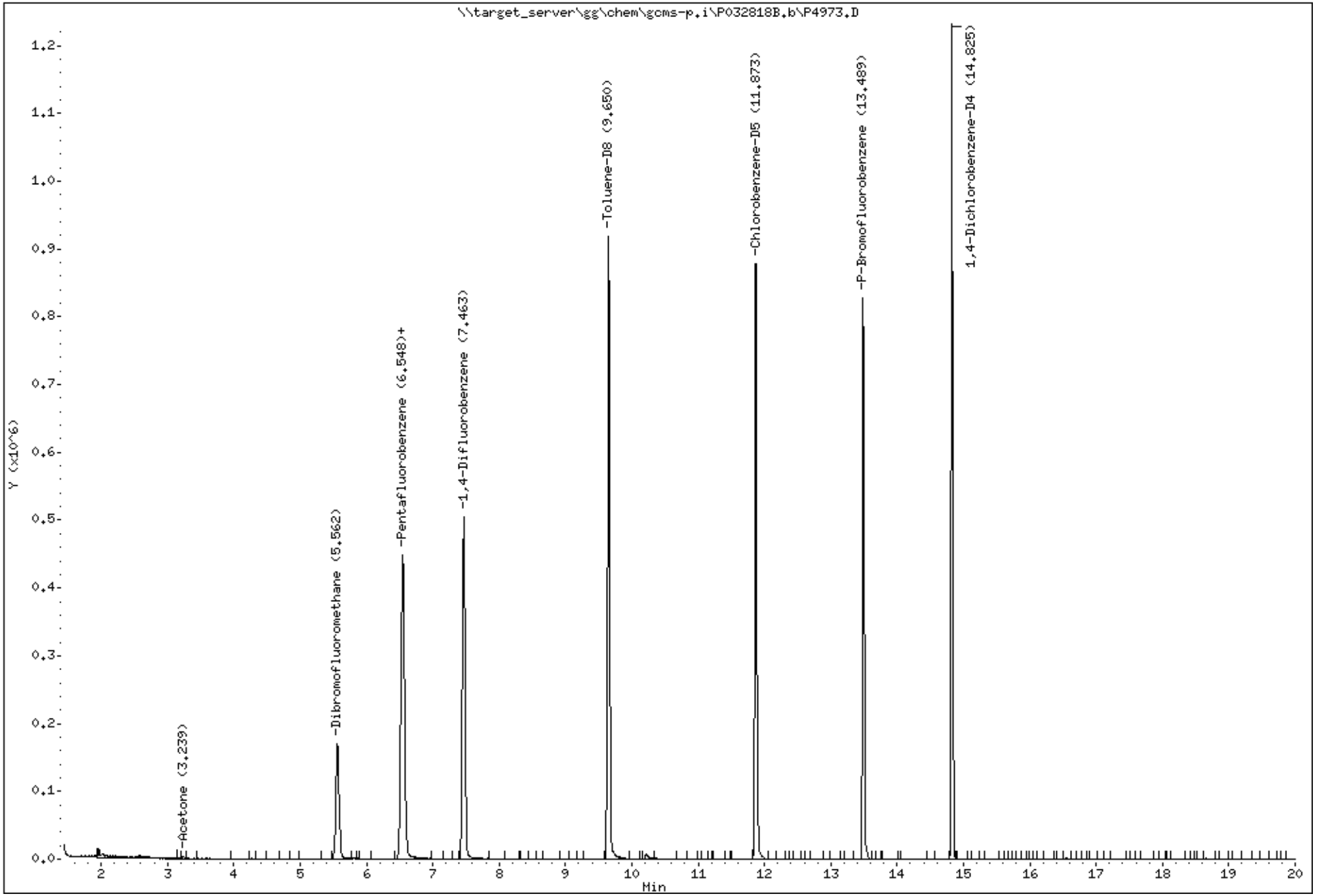
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	15 Acetone	43	3.238	3.238	(0.496)	4072	4.33536	4.3(a)	
$	34 Dibromofluoromethane	113	5.561	5.561	(0.851)	176063	55.2638	55.3	
*	41 Pentafluorobenzene	168	6.533	6.541	(1.000)	328000	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.562	6.569	(1.004)	257270	57.1452	57.1	
*	48 1,4-Difluorobenzene	114	7.470	7.470	(1.000)	593238	50.0000		
$	58 Toluene-D8	98	9.650	9.650	(1.292)	732748	50.0735	50.1	
*	68 Chlorobenzene-D5	117	11.873	11.873	(1.000)	580205	50.0000		
$	78 P-Bromofluorobenzene	95	13.488	13.496	(1.806)	271771	46.9191	46.9	
*	94 1,4-Dichlorobenzene-D4	152	14.825	14.832	(1.000)	297544	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4973.D
Date : 28-MAR-2018 13:55
Client ID: HAAP-21C-LGIA-DPT18 Instrument: gcms-p.i
Sample Info: SL2295-9RA



Katahdin Analytical Services 1000094

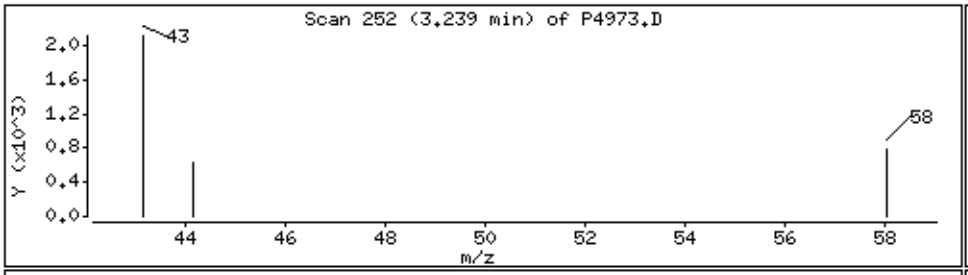
Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4973.D

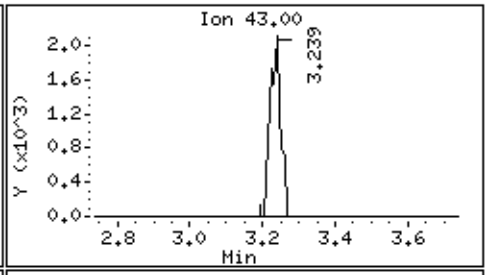
Date : 28-MAR-2018 13:55

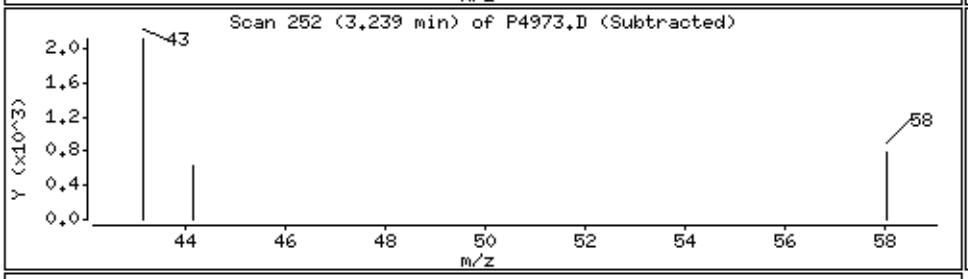
Client ID: HAAP-21C-LGIA-DPT18 Instrument: gcms-p.i

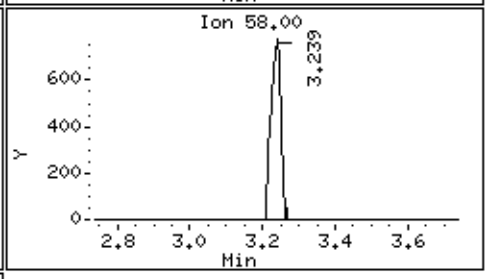
Sample Info: SL2295-9RA

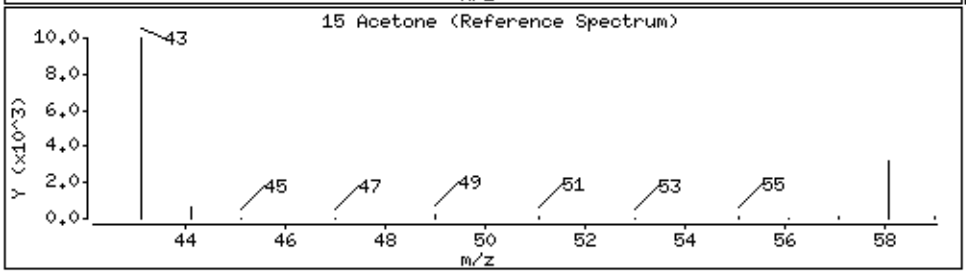
15 Acetone Concentration: 4.3 ug/l











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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4726.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	2700	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4726.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		119.	%					
1,2-Dichloroethane-d4	*	127.	%					
Toluene-d8		99.9	%					
P-Bromofluorobenzene		91.4	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4726.D
Report Date: 28-Mar-2018 09:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4726.D
Lab Smp Id: SL2295-10 Client Smp ID: HAAP-21C-LGIA-DPT20
Inj Date : 26-MAR-2018 16:31
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-10
Misc Info : WG225399,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

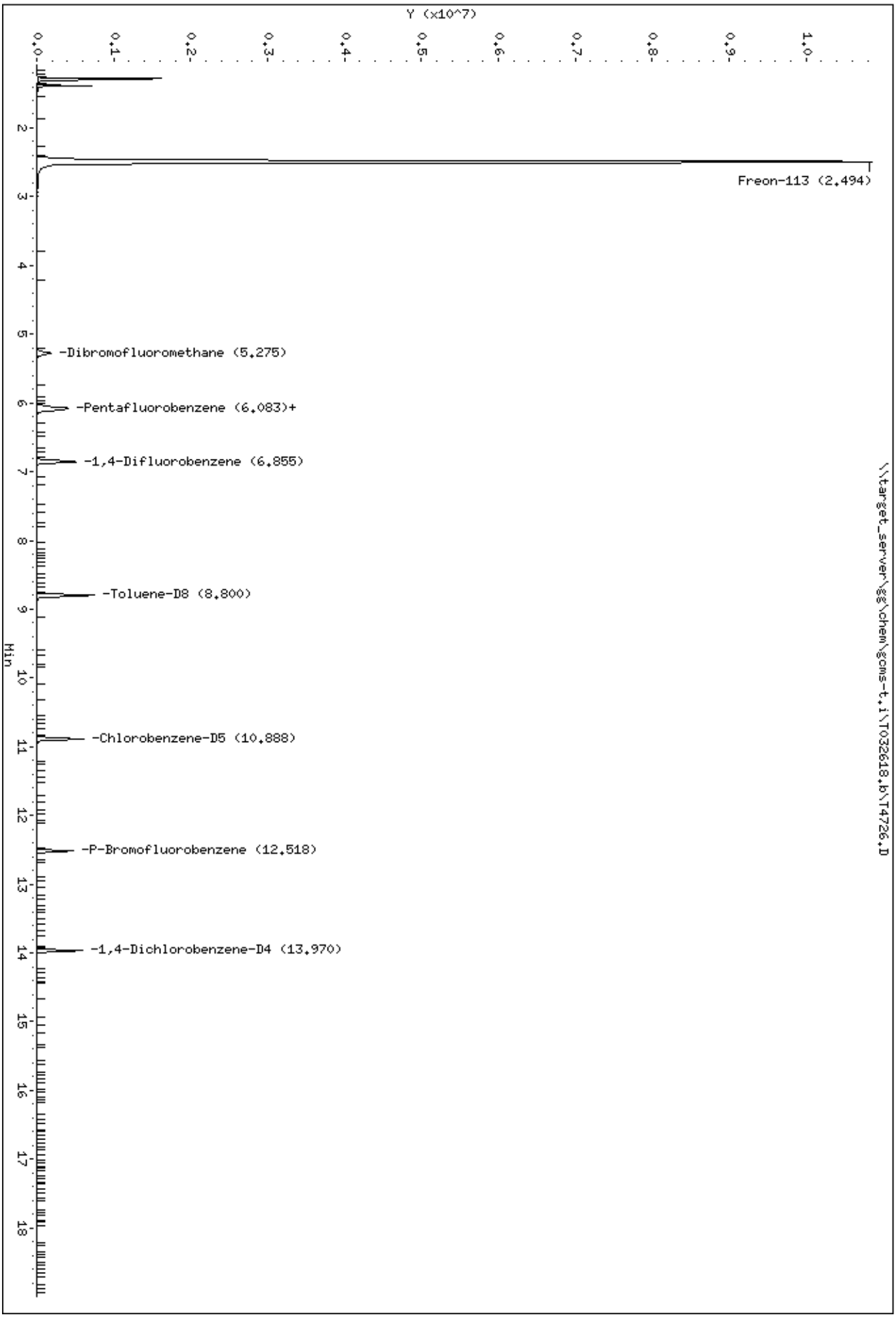
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9 Freon-113	151	2.493	2.486	(0.411)	3751123	2689.99	2690(A)	
$ 34 Dibromofluoromethane	113	5.282	5.275	(0.870)	173300	59.3834	59.4	
* 41 Pentafluorobenzene	168	6.068	6.068	(1.000)	290038	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	253324	63.7387	63.7	
* 48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	516491	50.0000		
$ 58 Toluene-D8	98	8.800	8.800	(1.284)	605386	49.9511	50.0	
* 68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	395379	50.0000		
$ 78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	179105	45.7185	45.7	
* 94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	164683	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.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Date : 26-MAR-2018 16:31
Client ID: HAAP-21C-LCIA-DPT20
Sample Info: SL2295-10
Instrument: gcms-t.i
\\target_server\gg\chem\gcms-t.i\T032618.b\T4726.D
Y (x10^7)
Min
Freon-113 (2.494)
-Dibromofluoromethane (5.275)
-Pentafluorobenzene (6.083)+
-1,4-Difluorobenzene (6.855)
-Toluene-D8 (8.800)
-Chlorobenzene-D5 (10.888)
-P-Bromofluorobenzene (12.518)
-1,4-Dichlorobenzene-D4 (13.970)

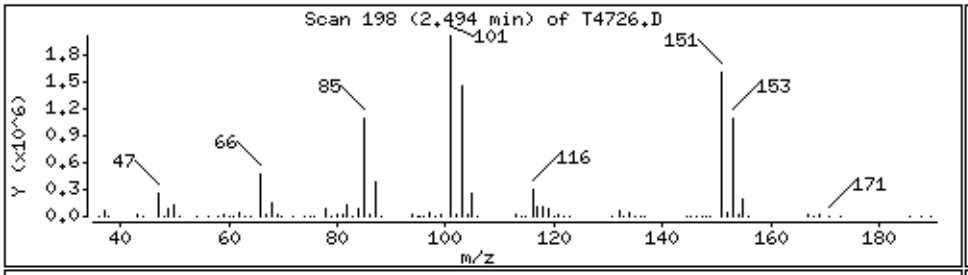
Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4726.D

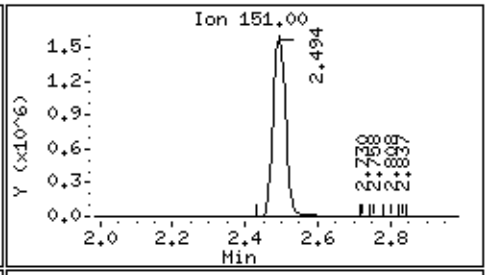
Date : 26-MAR-2018 16:31

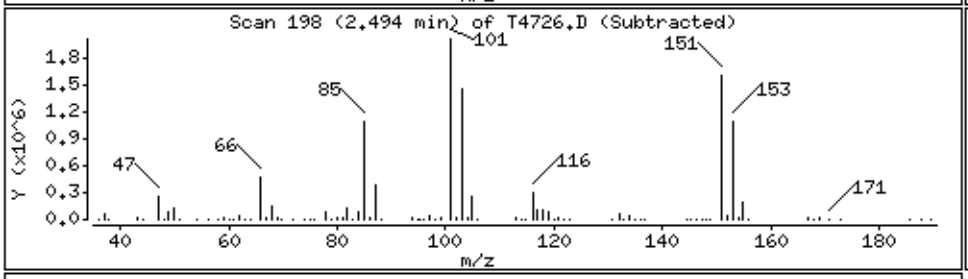
Client ID: HAAP-21C-LGIA-DPT20 Instrument: gcms-t.i

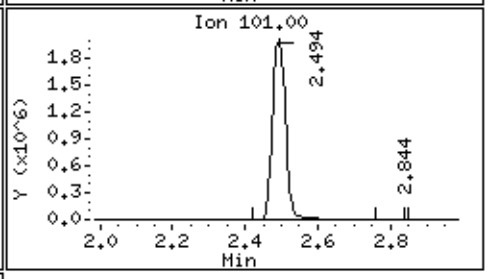
Sample Info: SL2295-10

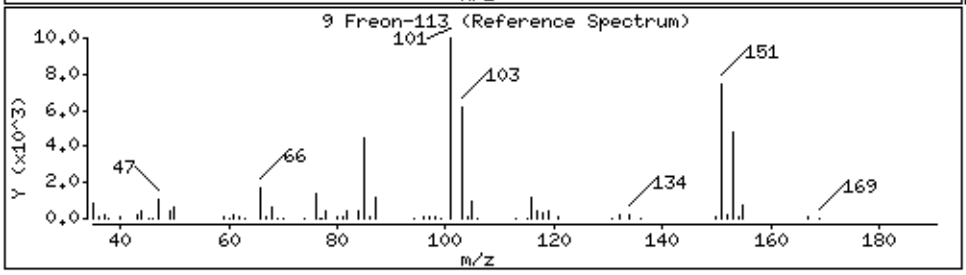
9 Freon-113 Concentration: 2690 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10DL
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4745.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	25	ug/L	50	1	50.	9.5	25.
1,1,1-Trichloroethane	U	25	ug/L	50	1	50.	10.	25.
1,1,2,2-Tetrachloroethane	U	25	ug/L	50	1	50.	19.	25.
Freon-113		3300	ug/L	50	1	50.	16.	25.
1,1,2-Trichloroethane	U	25	ug/L	50	1	50.	16.	25.
1,1-Dichloroethane	U	25	ug/L	50	1	50.	10.	25.
1,1-Dichloroethene	U	25	ug/L	50	1	50.	18.	25.
1,1-Dichloropropene	U	25	ug/L	50	1	50.	10.	25.
1,2,3-Trichlorobenzene	U	25	ug/L	50	1	50.	14.	25.
1,2,3-Trichloropropane	U	25	ug/L	50	1	50.	9.5	25.
1,2,4-Trichlorobenzene	U	25	ug/L	50	1	50.	18.	25.
1,2,4-Trimethylbenzene	U	25	ug/L	50	1	50.	9.5	25.
1,2-Dibromo-3-Chloropropane	U	25	ug/L	50	1	50.	25.	25.
1,2-Dichlorobenzene	U	25	ug/L	50	1	50.	7.5	25.
1,2-Dichloroethane	U	25	ug/L	50	1	50.	10.	25.
1,2-Dichloropropane	U	25	ug/L	50	1	50.	12.	25.
1,3,5-Trimethylbenzene	U	25	ug/L	50	1	50.	10.	25.
1,3-Dichlorobenzene	U	25	ug/L	50	1	50.	13.	25.
1,3-Dichloropropane	U	25	ug/L	50	1	50.	11.	25.
1,4-Dichlorobenzene	U	25	ug/L	50	1	50.	12.	25.
2,2-Dichloropropane	U	25	ug/L	50	1	50.	12.	25.
2-Butanone	U	120	ug/L	50	5	250	66.	120
2-Chlorotoluene	U	25	ug/L	50	1	50.	10.	25.
2-Hexanone	U	120	ug/L	50	5	250	85.	120
4-Chlorotoluene	U	25	ug/L	50	1	50.	13.	25.
P-Isopropyltoluene	U	25	ug/L	50	1	50.	12.	25.
4-Methyl-2-Pentanone	U	120	ug/L	50	5	250	66.	120
Acetone	U	120	ug/L	50	5	250	110	120
Benzene	U	25	ug/L	50	1	50.	13.	25.
Bromobenzene	U	25	ug/L	50	1	50.	12.	25.
Bromoform	U	25	ug/L	50	1	50.	12.	25.
Bromomethane	U	50	ug/L	50	2	100	24.	50.
Carbon Disulfide	U	25	ug/L	50	1	50.	12.	25.
Carbon Tetrachloride	U	25	ug/L	50	1	50.	11.	25.
Chlorobenzene	U	25	ug/L	50	1	50.	11.	25.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10DL
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4745.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	25	ug/L	50	1	50.	10.	25.
Dibromochloromethane	U	25	ug/L	50	1	50.	15.	25.
Chloroethane	U	50	ug/L	50	2	100	28.	50.
Chloroform	U	25	ug/L	50	1	50.	16.	25.
Chloromethane	U	50	ug/L	50	2	100	18.	50.
cis-1,2-Dichloroethene	U	25	ug/L	50	1	50.	10.	25.
cis-1,3-Dichloropropene	U	25	ug/L	50	1	50.	9.5	25.
Dibromomethane	U	25	ug/L	50	1	50.	23.	25.
Bromodichloromethane	U	25	ug/L	50	1	50.	16.	25.
Dichlorodifluoromethane	U	50	ug/L	50	2	100	12.	50.
Ethylbenzene	U	25	ug/L	50	1	50.	10.	25.
1,2-Dibromoethane	U	25	ug/L	50	1	50.	11.	25.
Hexachlorobutadiene	U	38	ug/L	50	1	50.	26.	38.
Isopropylbenzene	U	25	ug/L	50	1	50.	12.	25.
Methyl tert-butyl Ether	U	25	ug/L	50	1	50.	18.	25.
Methylene Chloride	U	120	ug/L	50	5	250	56.	120
m+p-Xylenes	U	50	ug/L	50	2	100	30.	50.
Naphthalene	U	25	ug/L	50	1	50.	15.	25.
N-Butylbenzene	U	25	ug/L	50	1	50.	12.	25.
N-Propylbenzene	U	25	ug/L	50	1	50.	13.	25.
o-Xylene	U	25	ug/L	50	1	50.	12.	25.
sec-Butylbenzene	U	25	ug/L	50	1	50.	10.	25.
Styrene	U	25	ug/L	50	1	50.	12.	25.
tert-Butylbenzene	U	25	ug/L	50	1	50.	16.	25.
Tetrachloroethene	U	25	ug/L	50	1	50.	20.	25.
Toluene	U	25	ug/L	50	1	50.	14.	25.
trans-1,2-Dichloroethene	U	25	ug/L	50	1	50.	12.	25.
trans-1,3-Dichloropropene	U	25	ug/L	50	1	50.	10.	25.
Trichloroethene	U	25	ug/L	50	1	50.	14.	25.
Trichlorofluoromethane	U	50	ug/L	50	2	100	12.	50.
Vinyl Chloride	U	50	ug/L	50	2	100	12.	50.
Dibromofluoromethane		115.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		92.5	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4745.D
Report Date: 28-Mar-2018 09:57

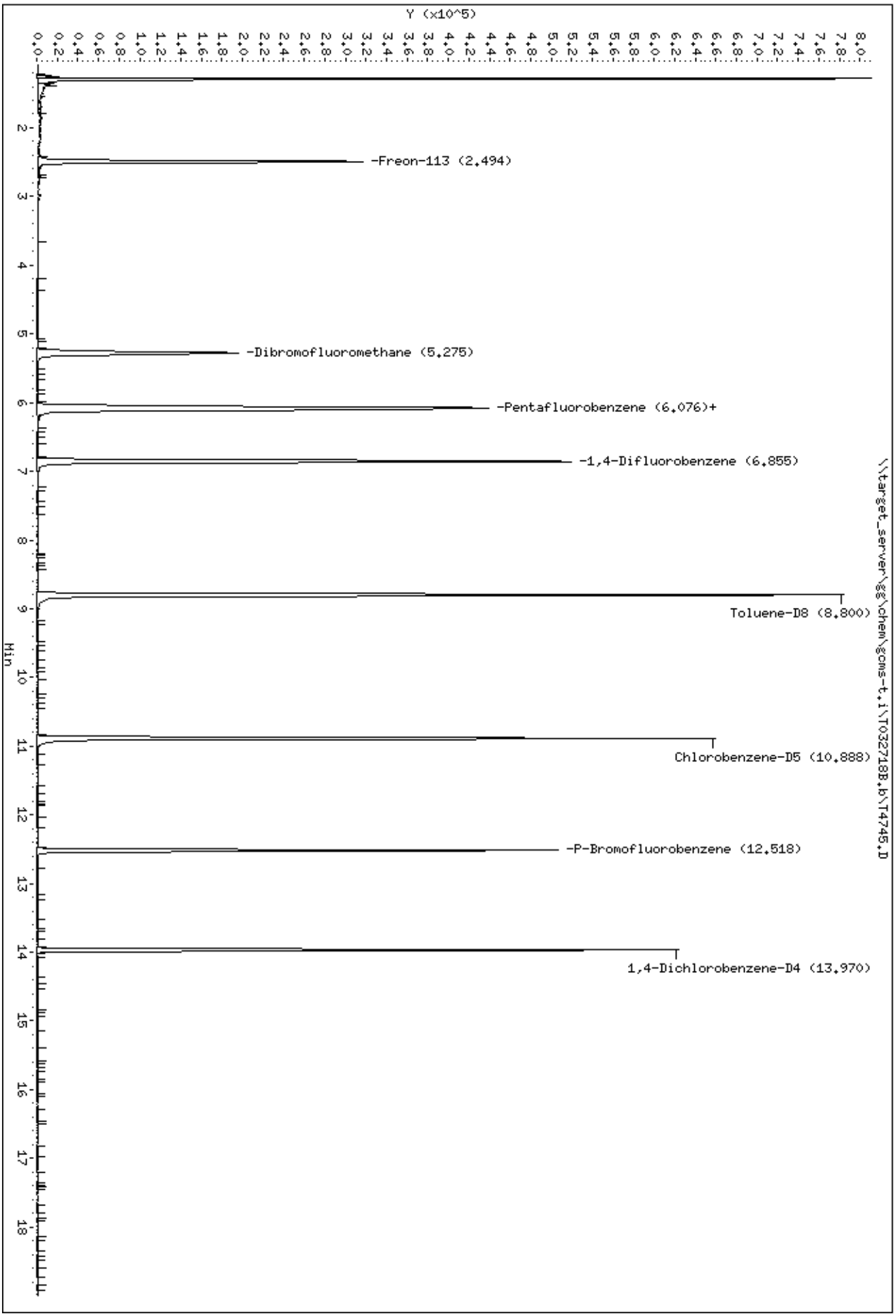
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4745.D
Lab Smp Id: SL2295-10DL Client Smp ID: HAAP-21C-LGIA-DPT20
Inj Date : 27-MAR-2018 15:05
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-10DL
Misc Info : WG225462,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 7
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	50.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.411)	99050	66.0078	3300	
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	180273	57.4048	57.4	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	312107	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	266467	62.3049	62.3	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	540806	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	635452	50.0745	50.1	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	426330	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	189708	46.2478	46.2	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	169880	50.0000		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Date : 27-MAR-2018 15:05
Client ID: HAAP-21C-LCIA-DPT20
Sample Info: SL2295-10DL
Instrument: gcms-t.i
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4745.D
Y (x10^5)
Min
-Freon-113 (2.494)
-Dibromofluoromethane (5.275)
-Pentafluorobenzene (6.076)+
-1,4-Difluorobenzene (6.855)
Toluene-D8 (8.800)
Chlorobenzene-D5 (10.888)
-P-Bromofluorobenzene (12.518)
1,4-Dichlorobenzene-D4 (13.970)

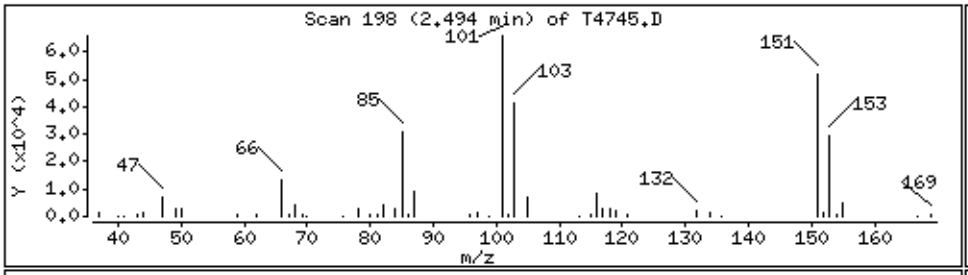
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4745.D

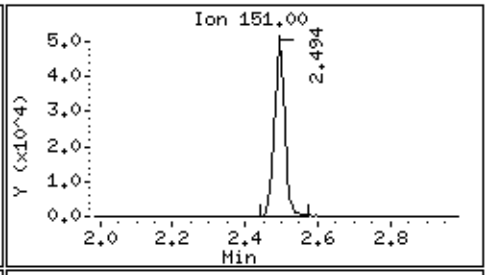
Date : 27-MAR-2018 15:05

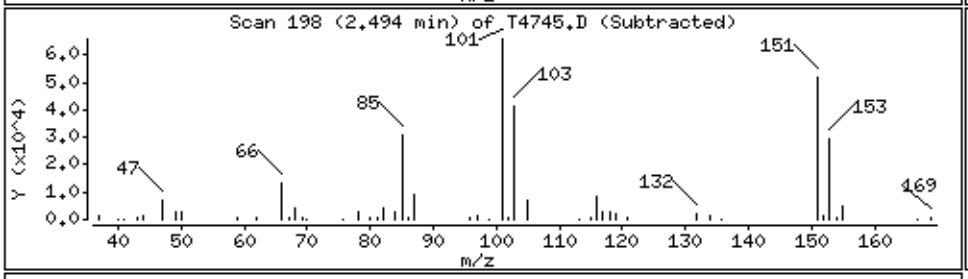
Client ID: HAAP-21C-LGIA-DPT20 Instrument: gcms-t.i

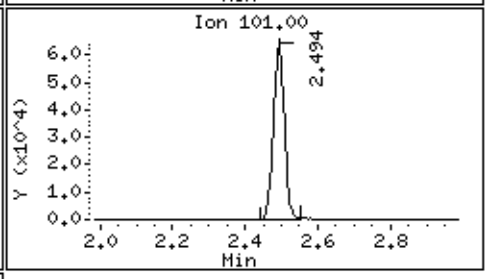
Sample Info: SL2295-10DL

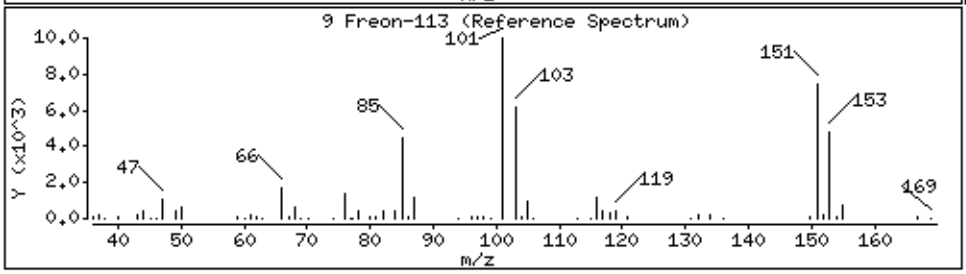
9 Freon-113 Concentration: 3300 ug/l











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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4727.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	1400	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4727.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		117.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		99.2	%					
P-Bromofluorobenzene		91.8	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4727.D
Report Date: 28-Mar-2018 09:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4727.D
Lab Smp Id: SL2295-11 Client Smp ID: HAAP-21C-UGIA-DPT01
Inj Date : 26-MAR-2018 17:08
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-11
Misc Info : WG225399,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.493	2.486	(0.411)	1961178	1448.37	1450(A)	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	165333	58.3443	58.3	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	281632	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	244227	63.2840	63.3	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	498448	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	579932	49.5830	49.6	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	387572	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	173541	45.9018	45.9	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	156526	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

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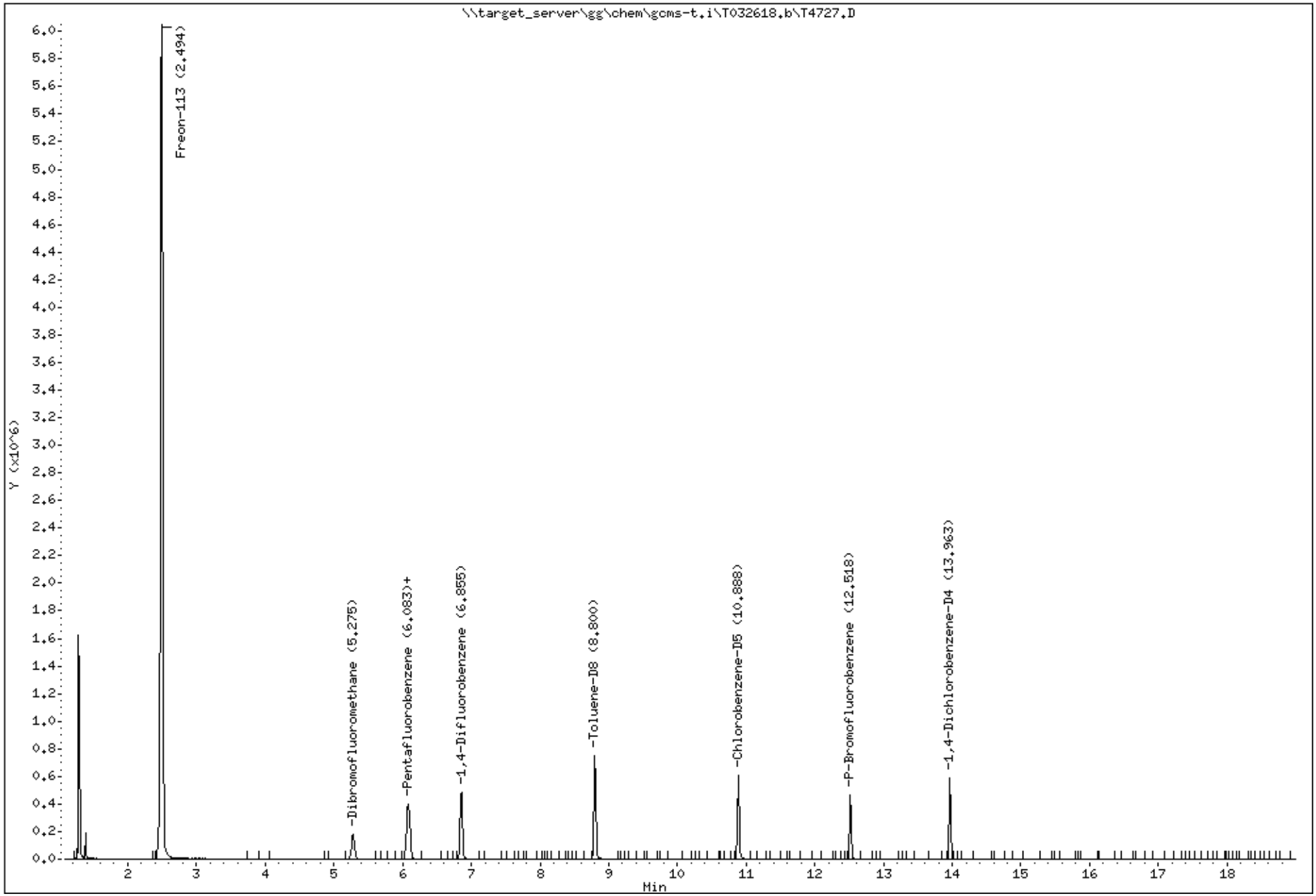
Date : 26-MAR-2018 17:08
Client ID: HAAP-21C-UGIA-DPT01 Instrument: gcms-t.i
Sample Info: SL2295-11



Katahdin Analytical Services 1000109

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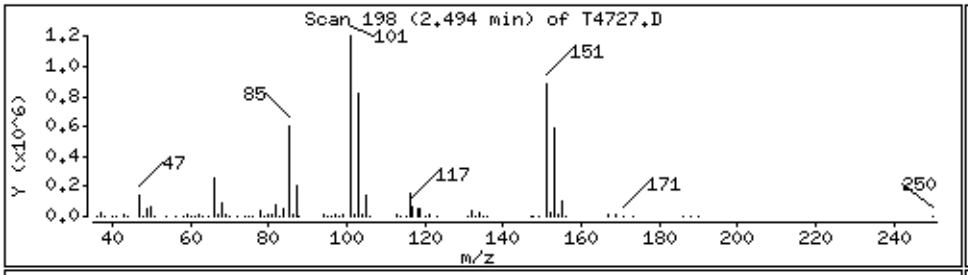
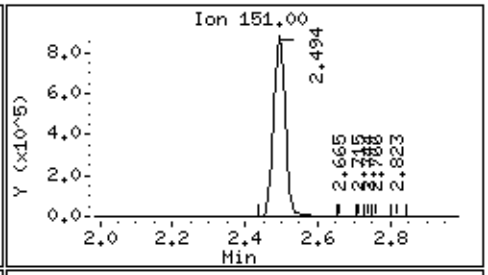
Date : 26-MAR-2018 17:08

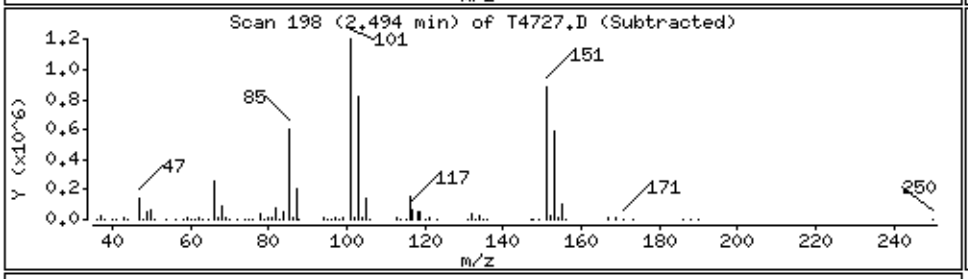
Client ID: HAAP-21C-UGIA-DPT01 Instrument: gcms-t.i

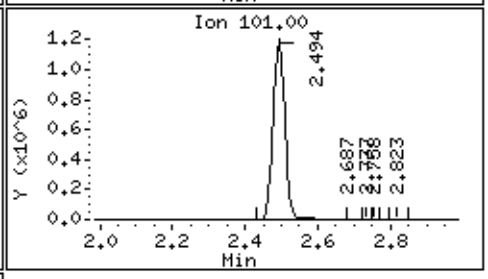
Sample Info: SL2295-11

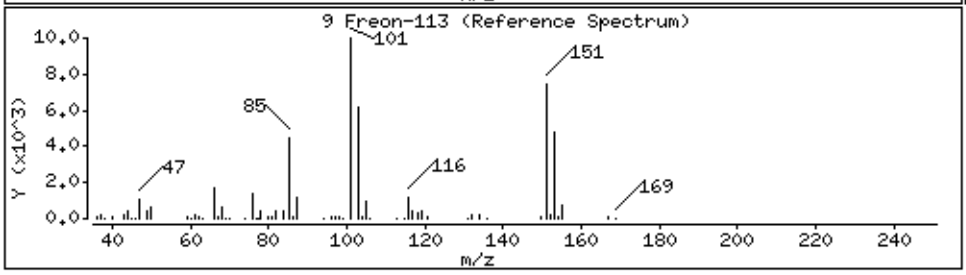
9 Freon-113 Concentration: 1450 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11DL
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4747.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	10	ug/L	20	1	20.	3.8	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
Freon-113		1700	ug/L	20	1	20.	6.2	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
1,1-Dichloropropene	U	10	ug/L	20	1	20.	4.2	10.
1,2,3-Trichlorobenzene	U	10	ug/L	20	1	20.	5.4	10.
1,2,3-Trichloropropane	U	10	ug/L	20	1	20.	3.8	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
1,2,4-Trimethylbenzene	U	10	ug/L	20	1	20.	3.8	10.
1,2-Dibromo-3-Chloropropane	U	10	ug/L	20	1	20.	10.	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
1,3,5-Trimethylbenzene	U	10	ug/L	20	1	20.	4.0	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,3-Dichloropropane	U	10	ug/L	20	1	20.	4.4	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
2,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
2-Butanone	U	50	ug/L	20	5	100	26.	50.
2-Chlorotoluene	U	10	ug/L	20	1	20.	4.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
4-Chlorotoluene	U	10	ug/L	20	1	20.	5.2	10.
P-Isopropyltoluene	U	10	ug/L	20	1	20.	5.0	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
Acetone	U	50	ug/L	20	5	100	44.	50.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
Bromobenzene	U	10	ug/L	20	1	20.	4.8	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11DL
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4747.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	10	ug/L	20	1	20.	4.2	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Dibromomethane	U	10	ug/L	20	1	20.	9.2	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
Dichlorodifluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
Hexachlorobutadiene	U	15	ug/L	20	1	20.	10.	15.
Isopropylbenzene	U	10	ug/L	20	1	20.	4.6	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
m+p-Xylenes	U	20	ug/L	20	2	40.	12.	20.
Naphthalene	U	10	ug/L	20	1	20.	6.0	10.
N-Butylbenzene	U	10	ug/L	20	1	20.	4.6	10.
N-Propylbenzene	U	10	ug/L	20	1	20.	5.2	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
sec-Butylbenzene	U	10	ug/L	20	1	20.	4.2	10.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
tert-Butylbenzene	U	10	ug/L	20	1	20.	6.2	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
trans-1,2-Dichloroethene	U	10	ug/L	20	1	20.	5.0	10.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	125.	%					
Toluene-d8		99.5	%					
P-Bromofluorobenzene		91.7	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4747.D
Report Date: 28-Mar-2018 09:57

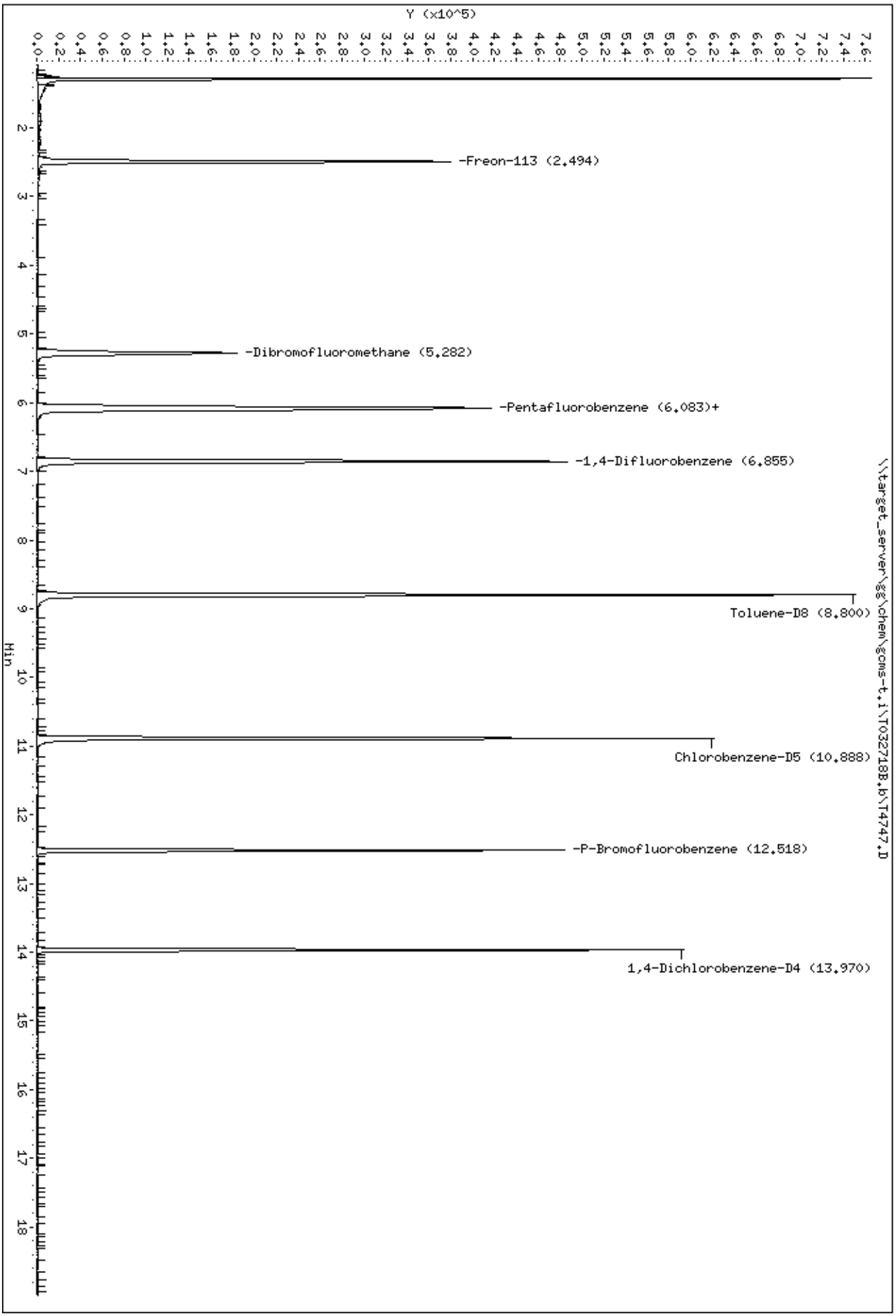
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4747.D
Lab Smp Id: SL2295-11DL Client Smp ID: HAAP-21C-UGIA-DPT01
Inj Date : 27-MAR-2018 16:18
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-11DL
Misc Info : WG225462,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 9
Dil Factor: 20.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	20.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
9 Freon-113	151	2.493	2.486	(0.411)	119190	85.3912	1710	
$ 34 Dibromofluoromethane	113	5.282	5.275	(0.870)	172970	59.2135	59.2	
* 41 Pentafluorobenzene	168	6.068	6.068	(1.000)	290316	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	247871	62.3070	62.3	
* 48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	506099	50.0000		
$ 58 Toluene-D8	98	8.800	8.800	(1.284)	591046	49.7692	49.8	
* 68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	394796	50.0000		
$ 78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	175986	45.8448	45.8	
* 94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	159777	50.0000		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Date : 27-MAR-2018 16:18
Client ID: HAAP-21C-UGIA-DPT01
Sample Info: SL2295-11DL
Instrument: gcms-t.i
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4747.D
Y (x10^5)
Min
-Freon-113 (2.494)
-Dibromofluoromethane (5.282)
-Pentafluorobenzene (6.083)+
-1,4-Difluorobenzene (6.855)
Toluene-D8 (8.800)
Chlorobenzene-D5 (10.888)
-P-Bromofluorobenzene (12.518)
1,4-Dichlorobenzene-D4 (13.970)

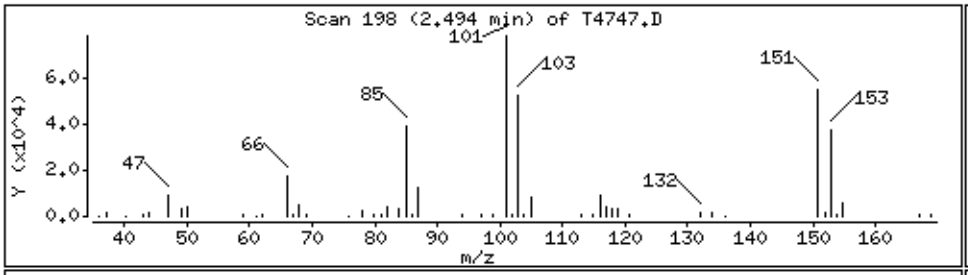
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4747.D

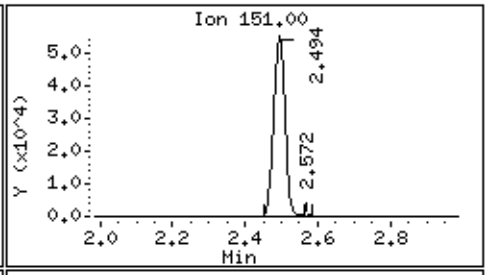
Date : 27-MAR-2018 16:18

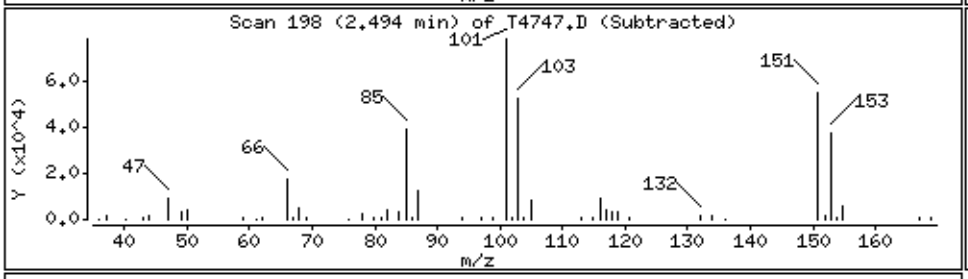
Client ID: HAAP-21C-UGIA-DPT01 Instrument: gcms-t.i

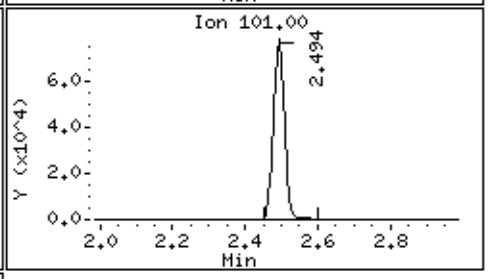
Sample Info: SL2295-11DL

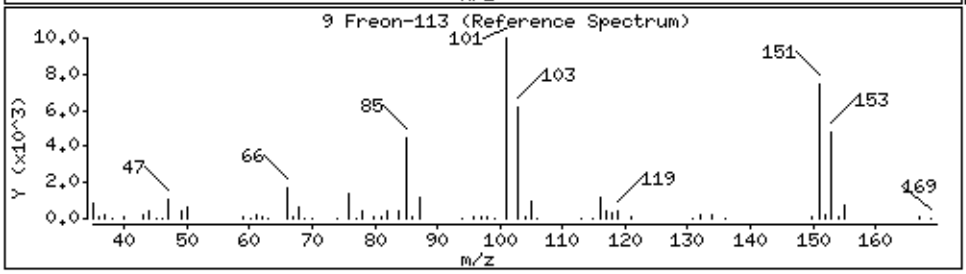
9 Freon-113 Concentration: 1710 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4728.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	450	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4728.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	124.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		91.6	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4728.D
Report Date: 28-Mar-2018 09:35

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4728.D
Lab Smp Id: SL2295-12 Client Smp ID: HAAP-21C-UGIA-DPT03
Inj Date : 26-MAR-2018 17:44
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-12
Misc Info : WG225399,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

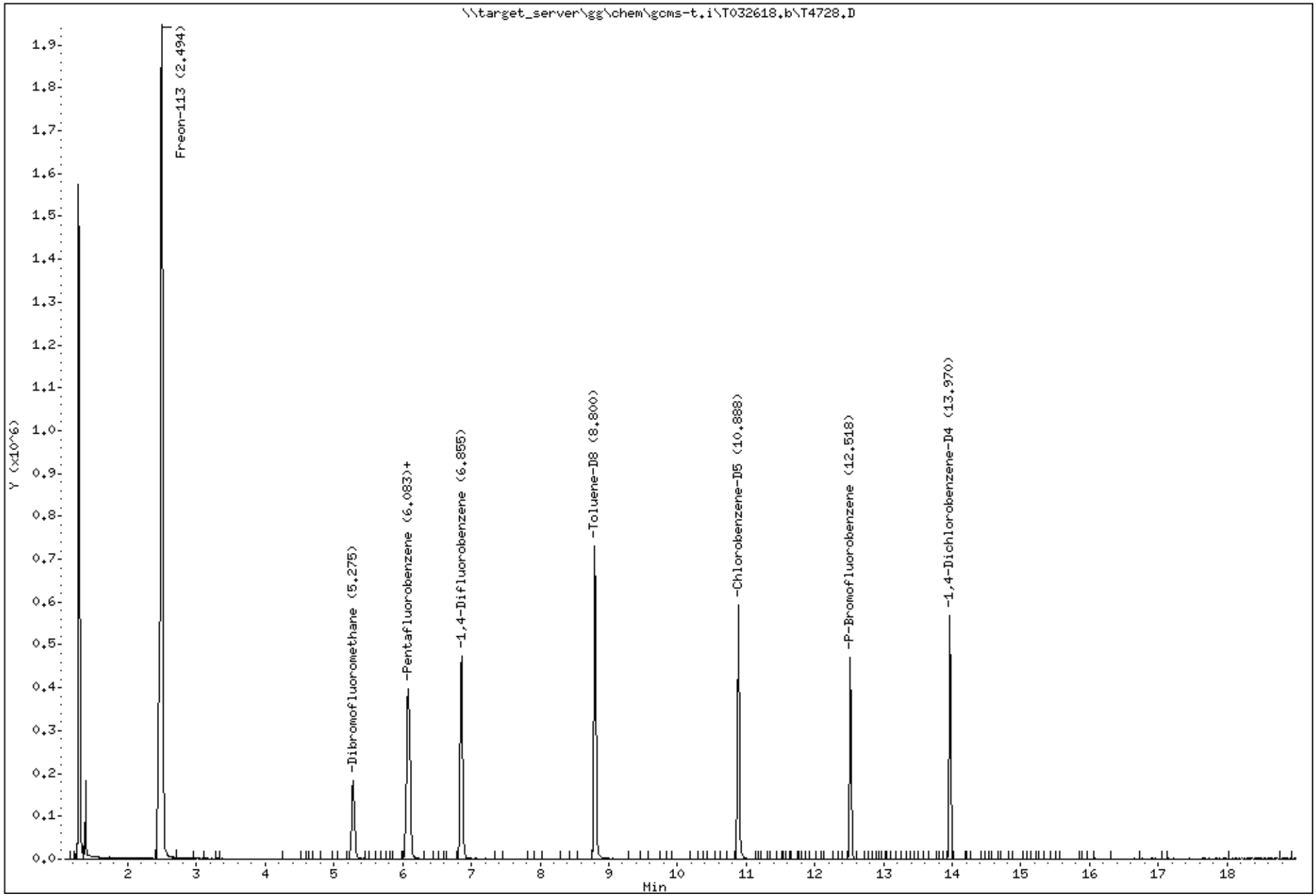
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9 Freon-113	151	2.493	2.486	(0.411)	606126	450.826	451(A)	
$ 34 Dibromofluoromethane	113	5.275	5.275	(0.869)	165896	58.9603	59.0	
* 41 Pentafluorobenzene	168	6.068	6.068	(1.000)	279639	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	237432	61.9617	62.0	
* 48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	484100	50.0000		
$ 58 Toluene-D8	98	8.800	8.800	(1.284)	573301	50.4688	50.5	
* 68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	379327	50.0000		
$ 78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	168226	45.8147	45.8	
* 94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	151900	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4728.D
Date : 26-MAR-2018 17:44
Client ID: HAAP-21C-UGIA-DPT03 Instrument: gcms-t.i
Sample Info: SL2295-12



Katahdin Analytical Services 1000119

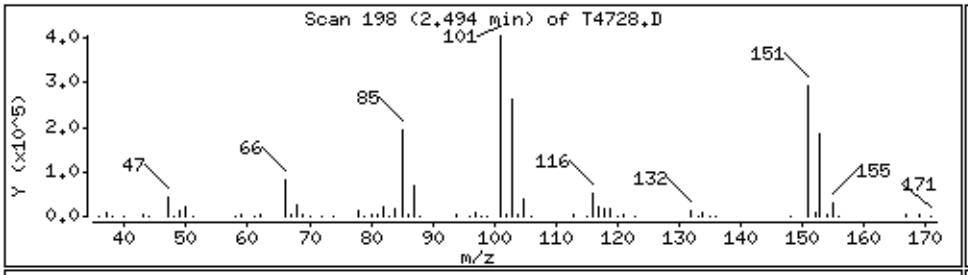
Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4728.D

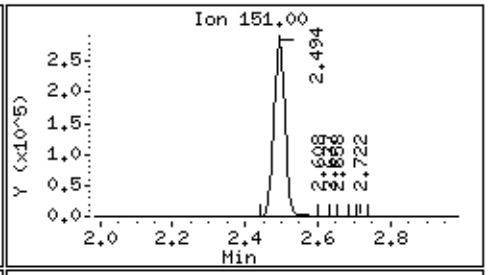
Date : 26-MAR-2018 17:44

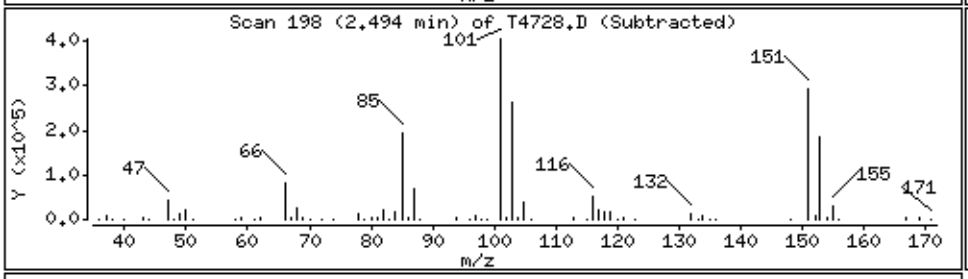
Client ID: HAAP-21C-UGIA-DPT03 Instrument: gcms-t.i

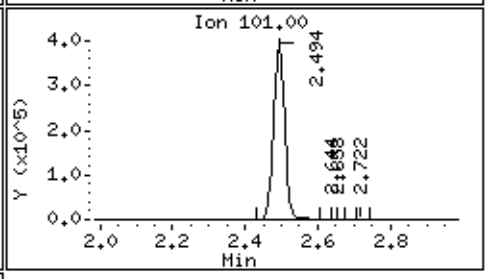
Sample Info: SL2295-12

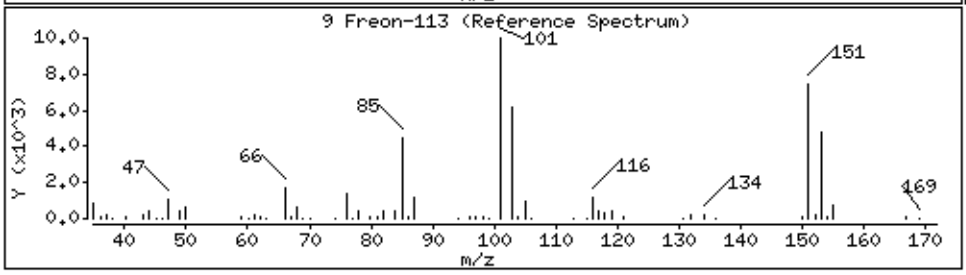
9 Freon-113 Concentration: 451 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12DL
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4749.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.5	ug/L	5	1	5.0	0.95	2.5
1,1,1-Trichloroethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,1,2,2-Tetrachloroethane	U	2.5	ug/L	5	1	5.0	1.9	2.5
Freon-113		380	ug/L	5	1	5.0	1.6	2.5
1,1,2-Trichloroethane	U	2.5	ug/L	5	1	5.0	1.6	2.5
1,1-Dichloroethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,1-Dichloroethene	U	2.5	ug/L	5	1	5.0	1.8	2.5
1,1-Dichloropropene	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,2,3-Trichlorobenzene	U	2.5	ug/L	5	1	5.0	1.4	2.5
1,2,3-Trichloropropane	U	2.5	ug/L	5	1	5.0	0.95	2.5
1,2,4-Trichlorobenzene	U	2.5	ug/L	5	1	5.0	1.8	2.5
1,2,4-Trimethylbenzene	U	2.5	ug/L	5	1	5.0	0.95	2.5
1,2-Dibromo-3-Chloropropane	U	2.5	ug/L	5	1	5.0	2.5	2.5
1,2-Dichlorobenzene	U	2.5	ug/L	5	1	5.0	0.75	2.5
1,2-Dichloroethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,2-Dichloropropane	U	2.5	ug/L	5	1	5.0	1.2	2.5
1,3,5-Trimethylbenzene	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,3-Dichlorobenzene	U	2.5	ug/L	5	1	5.0	1.3	2.5
1,3-Dichloropropane	U	2.5	ug/L	5	1	5.0	1.1	2.5
1,4-Dichlorobenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
2,2-Dichloropropane	U	2.5	ug/L	5	1	5.0	1.2	2.5
2-Butanone	U	12	ug/L	5	5	25.	6.6	12.
2-Chlorotoluene	U	2.5	ug/L	5	1	5.0	1.0	2.5
2-Hexanone	U	12	ug/L	5	5	25.	8.5	12.
4-Chlorotoluene	U	2.5	ug/L	5	1	5.0	1.3	2.5
P-Isopropyltoluene	U	2.5	ug/L	5	1	5.0	1.2	2.5
4-Methyl-2-Pentanone	U	12	ug/L	5	5	25.	6.6	12.
Acetone	U	12	ug/L	5	5	25.	11.	12.
Benzene	U	2.5	ug/L	5	1	5.0	1.3	2.5
Bromobenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
Bromoform	U	2.5	ug/L	5	1	5.0	1.2	2.5
Bromomethane	U	5.0	ug/L	5	2	10.	2.4	5.0
Carbon Disulfide	U	2.5	ug/L	5	1	5.0	1.2	2.5
Carbon Tetrachloride	U	2.5	ug/L	5	1	5.0	1.1	2.5
Chlorobenzene	U	2.5	ug/L	5	1	5.0	1.1	2.5

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12DL
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4749.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	2.5	ug/L	5	1	5.0	1.0	2.5
Dibromochloromethane	U	2.5	ug/L	5	1	5.0	1.5	2.5
Chloroethane	U	5.0	ug/L	5	2	10.	2.8	5.0
Chloroform	U	2.5	ug/L	5	1	5.0	1.6	2.5
Chloromethane	U	5.0	ug/L	5	2	10.	1.8	5.0
cis-1,2-Dichloroethene	U	2.5	ug/L	5	1	5.0	1.0	2.5
cis-1,3-Dichloropropene	U	2.5	ug/L	5	1	5.0	0.95	2.5
Dibromomethane	U	2.5	ug/L	5	1	5.0	2.3	2.5
Bromodichloromethane	U	2.5	ug/L	5	1	5.0	1.6	2.5
Dichlorodifluoromethane	U	5.0	ug/L	5	2	10.	1.2	5.0
Ethylbenzene	U	2.5	ug/L	5	1	5.0	1.0	2.5
1,2-Dibromoethane	U	2.5	ug/L	5	1	5.0	1.1	2.5
Hexachlorobutadiene	U	3.8	ug/L	5	1	5.0	2.6	3.8
Isopropylbenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
Methyl tert-butyl Ether	U	2.5	ug/L	5	1	5.0	1.8	2.5
Methylene Chloride	U	12	ug/L	5	5	25.	5.6	12.
m+p-Xylenes	U	5.0	ug/L	5	2	10.	3.0	5.0
Naphthalene	U	2.5	ug/L	5	1	5.0	1.5	2.5
N-Butylbenzene	U	2.5	ug/L	5	1	5.0	1.2	2.5
N-Propylbenzene	U	2.5	ug/L	5	1	5.0	1.3	2.5
o-Xylene	U	2.5	ug/L	5	1	5.0	1.2	2.5
sec-Butylbenzene	U	2.5	ug/L	5	1	5.0	1.0	2.5
Styrene	U	2.5	ug/L	5	1	5.0	1.2	2.5
tert-Butylbenzene	U	2.5	ug/L	5	1	5.0	1.6	2.5
Tetrachloroethene	U	2.5	ug/L	5	1	5.0	2.0	2.5
Toluene	U	2.5	ug/L	5	1	5.0	1.4	2.5
trans-1,2-Dichloroethene	U	2.5	ug/L	5	1	5.0	1.2	2.5
trans-1,3-Dichloropropene	U	2.5	ug/L	5	1	5.0	1.0	2.5
Trichloroethene	U	2.5	ug/L	5	1	5.0	1.4	2.5
Trichlorofluoromethane	U	5.0	ug/L	5	2	10.	1.2	5.0
Vinyl Chloride	U	5.0	ug/L	5	2	10.	1.2	5.0
Dibromofluoromethane	*	120.	%					
1,2-Dichloroethane-d4	*	127.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		92.4	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4749.D
Report Date: 28-Mar-2018 09:57

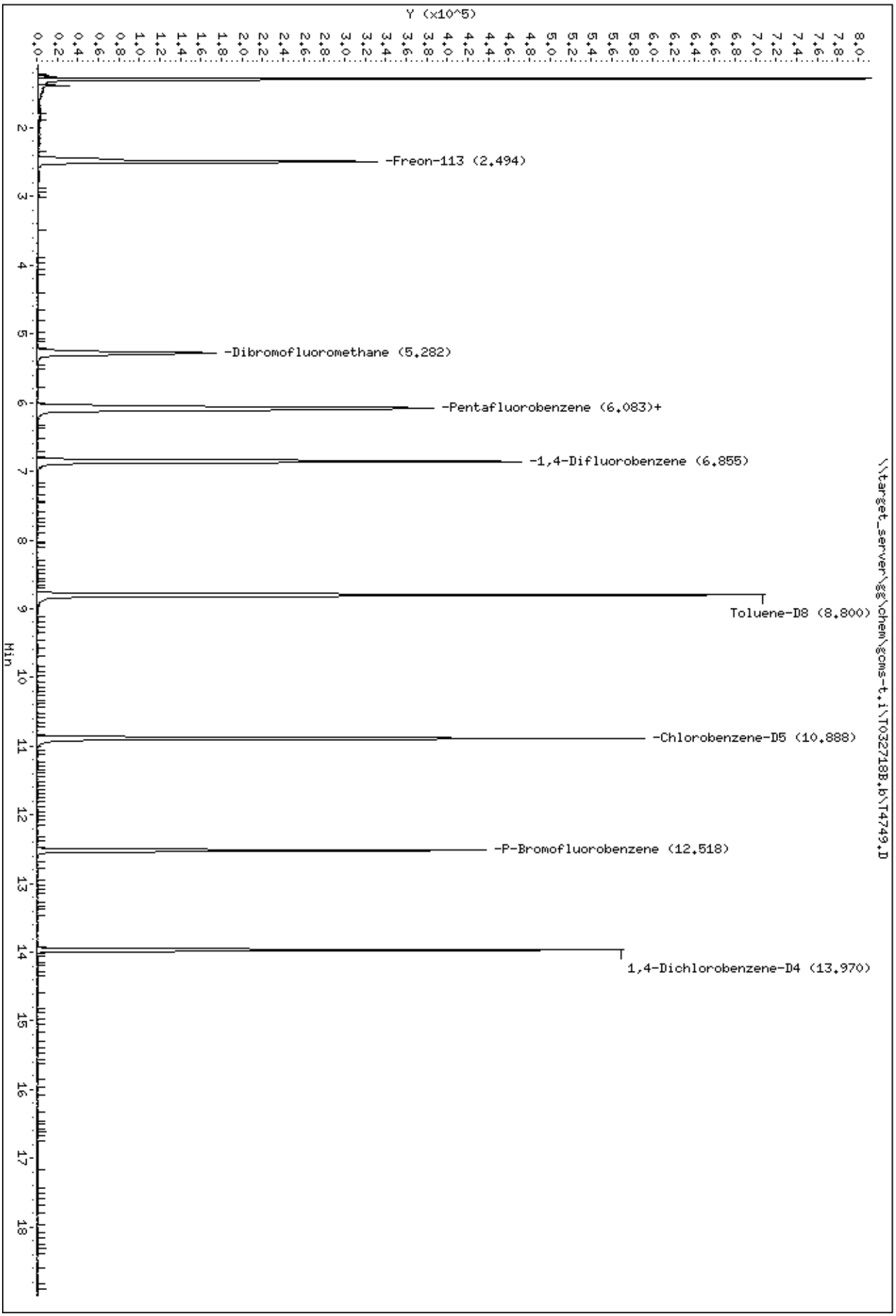
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4749.D
Lab Smp Id: SL2295-12DL Client Smp ID: HAAP-21C-UGIA-DPT03
Inj Date : 27-MAR-2018 17:32
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-12DL
Misc Info : WG225462,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 11
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.493	2.486	(0.410)	99171	77.0819	385	
$ 34	Dibromofluoromethane	113	5.282	5.275	(0.869)	161847	60.1104	60.1	
* 41	Pentafluorobenzene	168	6.075	6.068	(1.000)	267594	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.004)	232186	63.3201	63.3	
* 48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	472465	50.0000		
$ 58	Toluene-D8	98	8.800	8.800	(1.284)	561928	50.6858	50.7	
* 68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	367534	50.0000		
$ 78	P-Bromofluorobenzene	95	12.518	12.511	(1.826)	165500	46.1823	46.2	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	151369	50.0000		


Y (x10^5)
-Freon-113 (2.494)
-Dibromofluoromethane (5.282)
-Pentafluorobenzene (6.083)+
-1,4-Difluorobenzene (6.855)
Toluene-D8 (8.800)
-Chlorobenzene-D5 (10.888)
-P-Bromofluorobenzene (12.518)
1,4-Dichlorobenzene-D4 (13.970)
Min
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Date : 27-MAR-2018 17:32
Client ID: HAAP-21C-UGIA-DPT03
Sample Info: SL2295-12DL
Instrument: gcms-t.i
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4749.D

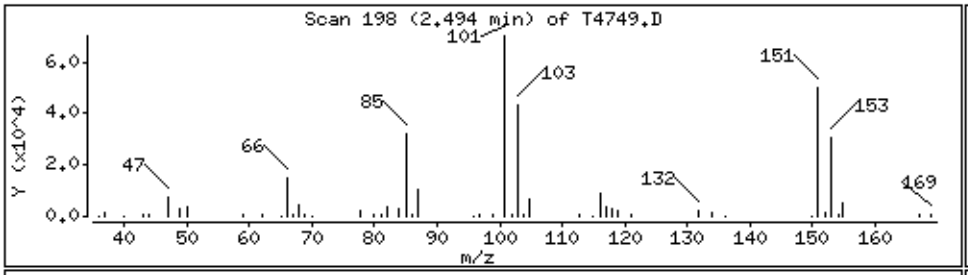
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4749.D

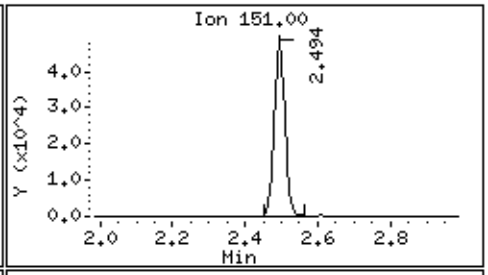
Date : 27-MAR-2018 17:32

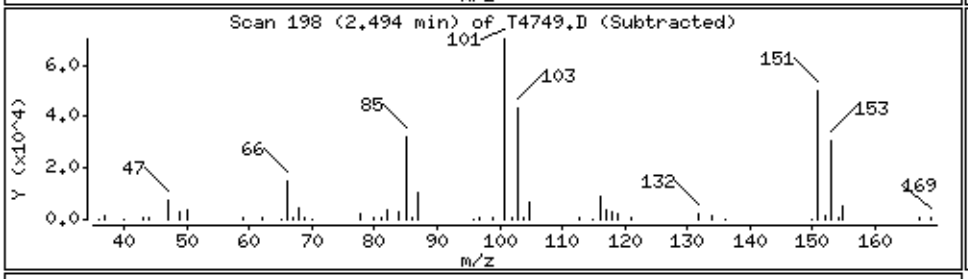
Client ID: HAAP-21C-UGIA-DPT03 Instrument: gcms-t.i

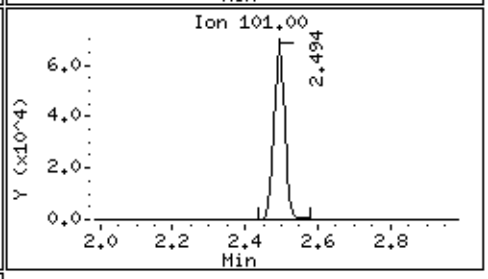
Sample Info: SL2295-12DL

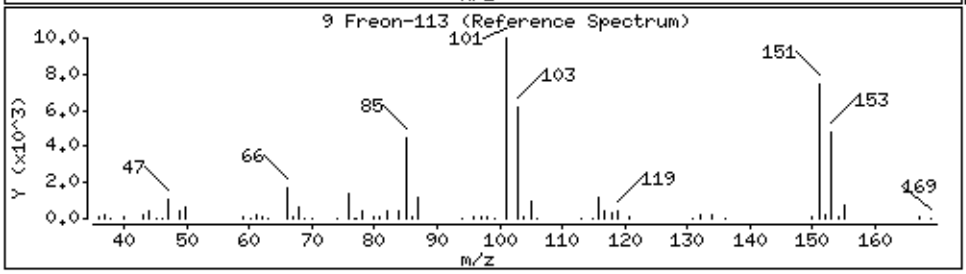
9 Freon-113 Concentration: 385 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-13
Client ID: CHAAP-21C-UGIA-DPT05
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4944.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	J	0.46	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-13
Client ID: CHAAP-21C-UGIA-DPT05
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4944.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		117.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		102.	%					
P-Bromofluorobenzene		94.3	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4944.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4944.D
Lab Smp Id: SL2295-13 Client Smp ID: HAAP-21C-UGIA-DPT05
Inj Date : 27-MAR-2018 18:50 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-13
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

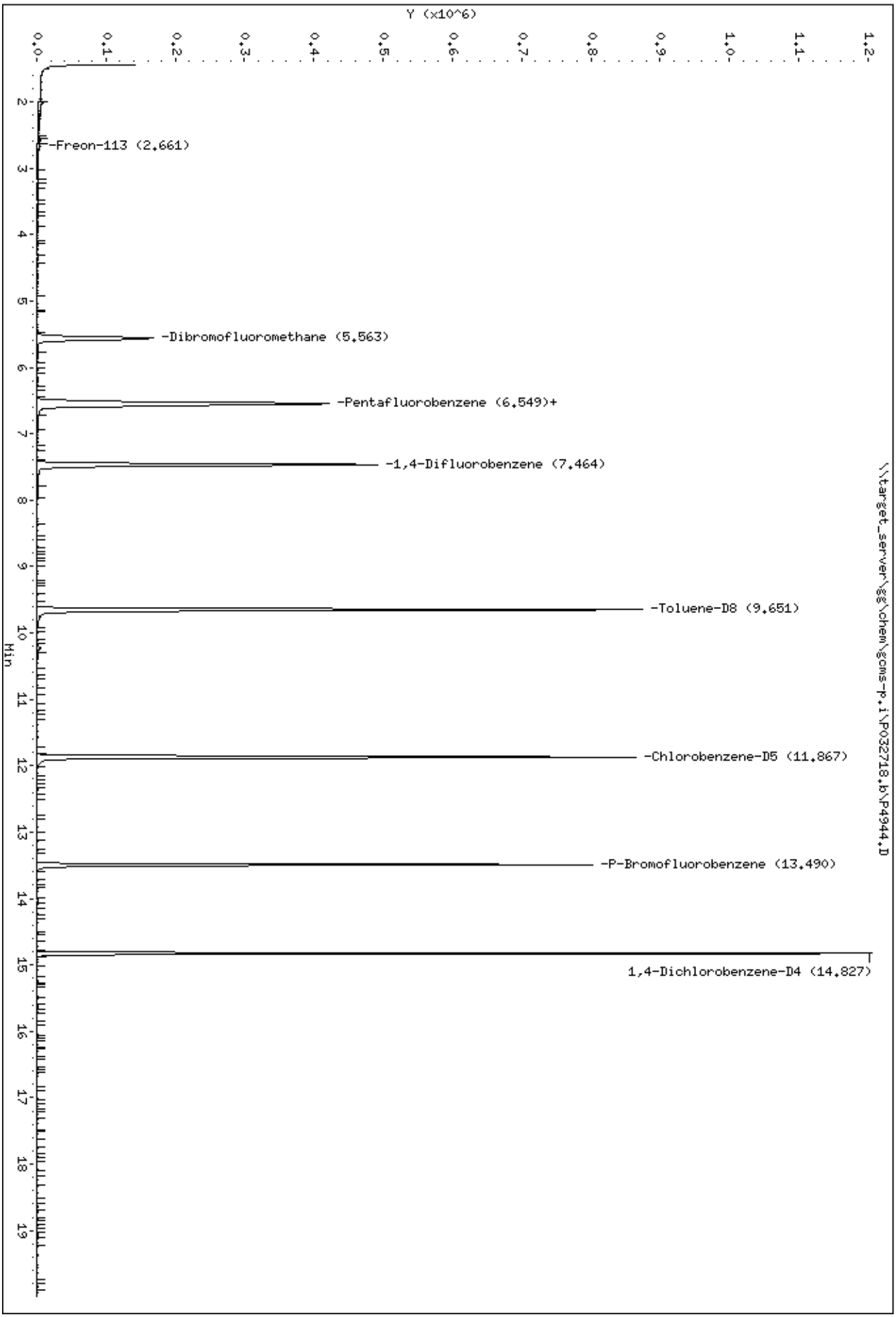
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.667	2.659	(0.408)	930	0.46264	0.46(a)	
$ 34	Dibromofluoromethane	113	5.562	5.561	(0.850)	171655	58.4316	58.4	
* 41	Pentafluorobenzene	168	6.542	6.541	(1.000)	302451	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.563	6.569	(1.003)	245325	59.0950	59.1	
* 48	1,4-Difluorobenzene	114	7.464	7.470	(1.000)	559039	50.0000		
$ 58	Toluene-D8	98	9.651	9.650	(1.293)	703341	51.0043	51.0	
* 68	Chlorobenzene-D5	117	11.867	11.873	(1.000)	552918	50.0000		
$ 78	P-Bromofluorobenzene	95	13.489	13.496	(1.807)	257469	47.1692	47.2	
* 94	1,4-Dichlorobenzene-D4	152	14.826	14.832	(1.000)	285311	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Date : 27-MAR-2018 18:50
Client ID: HAAP-21C-UGIA-DPT05
Sample Info: SL2295-13
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032718.b\P4944.D
Y (x10^6)
Min
-Freon-113 (2.661)
-Dibromofluoromethane (5.563)
-Pentafluorobenzene (6.549)+
-1,4-Difluorobenzene (7.464)
-Toluene-D8 (9.651)
-Chlorobenzene-D5 (11.867)
-P-Bromofluorobenzene (13.490)
1,4-Dichlorobenzene-D4 (14.827)

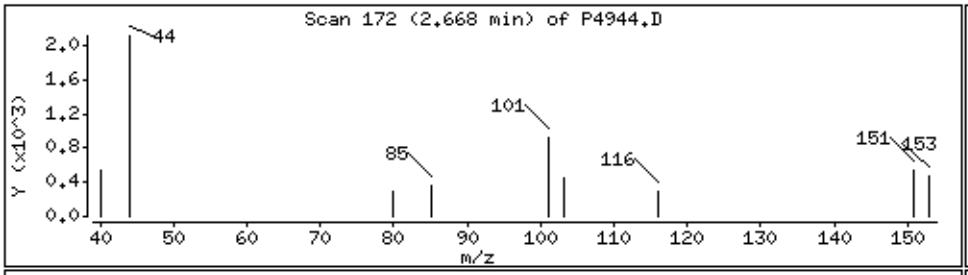
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4944.D

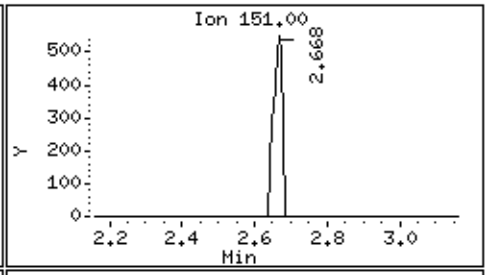
Date : 27-MAR-2018 18:50

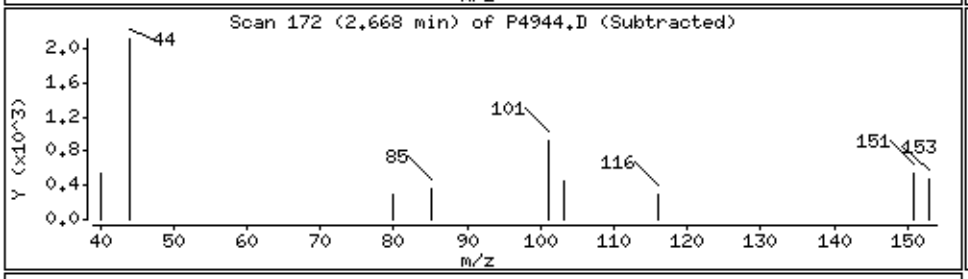
Client ID: HAAP-21C-UGIA-DPT05 Instrument: gcms-p.i

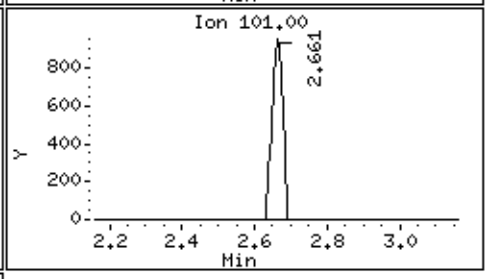
Sample Info: SL2295-13

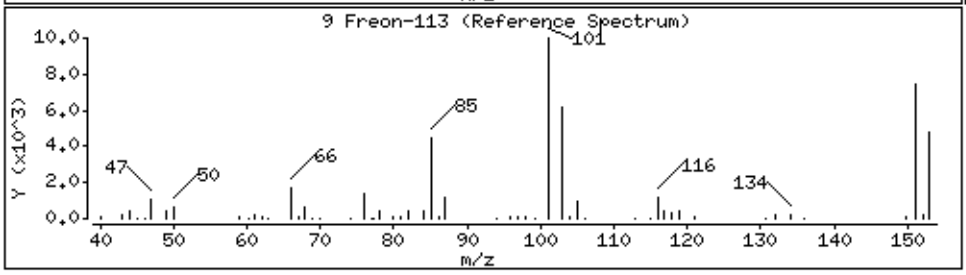
9 Freon-113 Concentration: 0.46 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4730.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	1800	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4730.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		119.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		92.3	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4730.D
Report Date: 28-Mar-2018 11:00

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4730.D
Lab Smp Id: SL2295-14 Client Smp ID: HAAP-21C-UGIA-DPT07
Inj Date : 26-MAR-2018 18:57
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-14
Misc Info : WG225399,WG225352-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

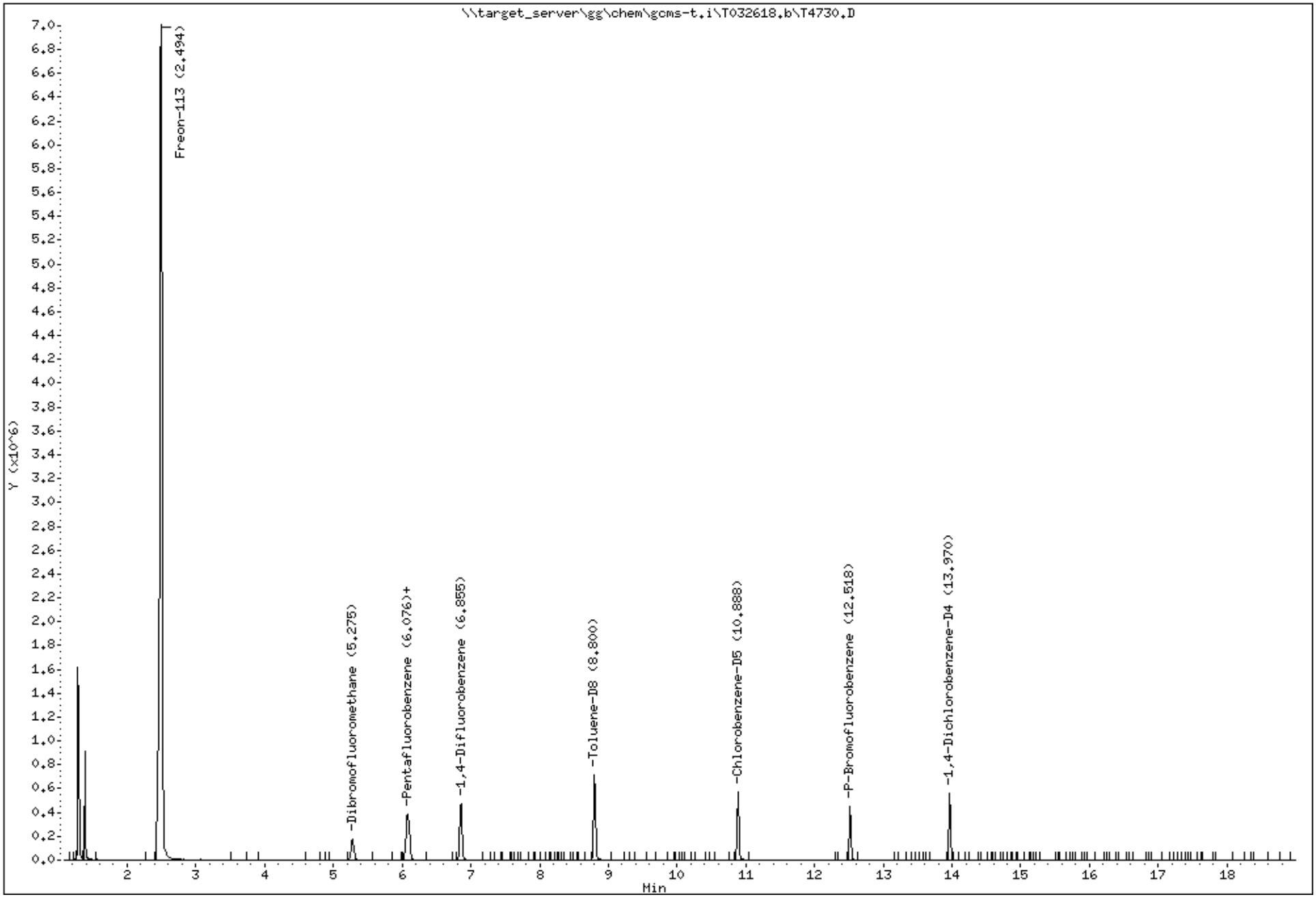
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9 Freon-113	151	2.493	2.486	(0.411)	2278431	1761.72	1760(A)	
$ 34 Dibromofluoromethane	113	5.275	5.275	(0.869)	160508	59.3028	59.3	
* 41 Pentafluorobenzene	168	6.068	6.068	(1.000)	268994	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	232433	63.0576	63.0	
* 48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	477698	50.0000		
$ 58 Toluene-D8	98	8.800	8.800	(1.284)	564986	50.4034	50.4	
* 68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	375322	50.0000		
$ 78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	167291	46.1707	46.2	
* 94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	151896	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4730.D
Date : 26-MAR-2018 18:57
Client ID: HAAP-21C-UGIA-DPT07 Instrument: gcms-t.i
Sample Info: SL2295-14



Katahdin Analytical Services 1000134

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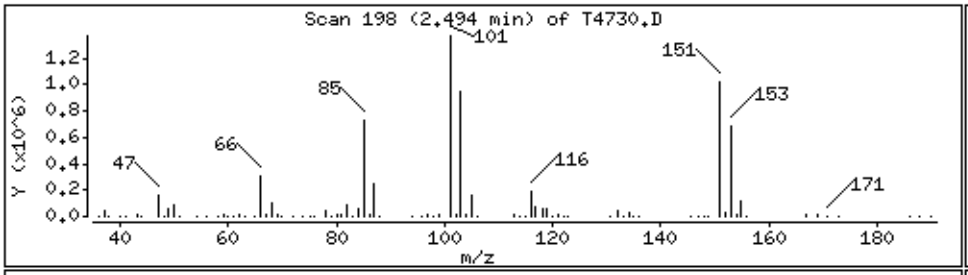
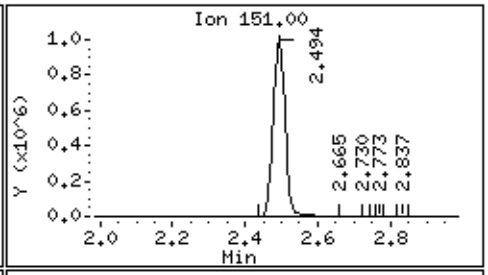
Date : 26-MAR-2018 18:57

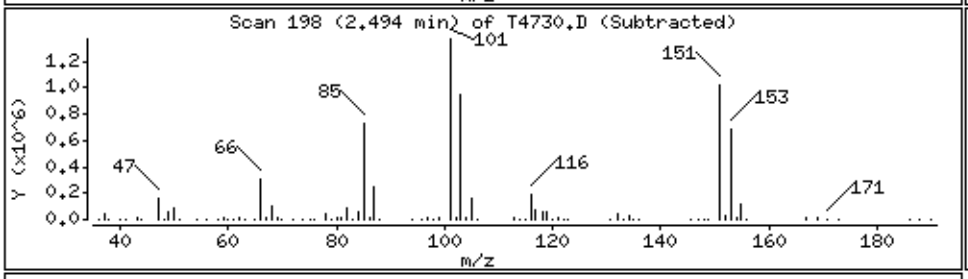
Client ID: HAAP-21C-UGIA-DPT07 Instrument: gcms-t.i

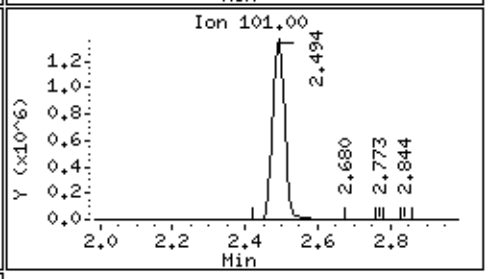
Sample Info: SL2295-14

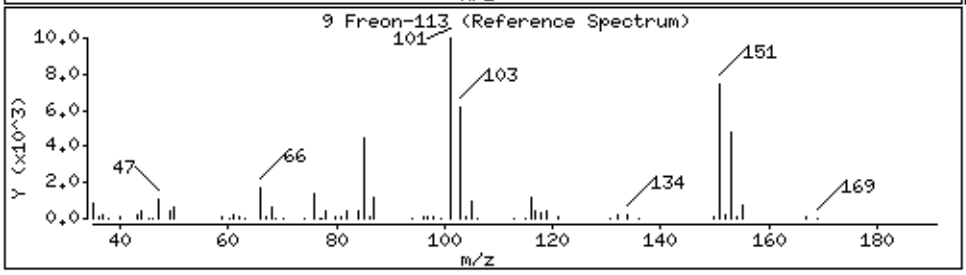
9 Freon-113 Concentration: 1760 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14DL
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4748.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	10	ug/L	20	1	20.	3.8	10.
1,1,1-Trichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,1,2,2-Tetrachloroethane	U	10	ug/L	20	1	20.	7.6	10.
Freon-113		1800	ug/L	20	1	20.	6.2	10.
1,1,2-Trichloroethane	U	10	ug/L	20	1	20.	6.6	10.
1,1-Dichloroethane	U	10	ug/L	20	1	20.	4.2	10.
1,1-Dichloroethene	U	10	ug/L	20	1	20.	7.0	10.
1,1-Dichloropropene	U	10	ug/L	20	1	20.	4.2	10.
1,2,3-Trichlorobenzene	U	10	ug/L	20	1	20.	5.4	10.
1,2,3-Trichloropropane	U	10	ug/L	20	1	20.	3.8	10.
1,2,4-Trichlorobenzene	U	10	ug/L	20	1	20.	7.4	10.
1,2,4-Trimethylbenzene	U	10	ug/L	20	1	20.	3.8	10.
1,2-Dibromo-3-Chloropropane	U	10	ug/L	20	1	20.	10.	10.
1,2-Dichlorobenzene	U	10	ug/L	20	1	20.	3.0	10.
1,2-Dichloroethane	U	10	ug/L	20	1	20.	4.0	10.
1,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
1,3,5-Trimethylbenzene	U	10	ug/L	20	1	20.	4.0	10.
1,3-Dichlorobenzene	U	10	ug/L	20	1	20.	5.2	10.
1,3-Dichloropropane	U	10	ug/L	20	1	20.	4.4	10.
1,4-Dichlorobenzene	U	10	ug/L	20	1	20.	4.8	10.
2,2-Dichloropropane	U	10	ug/L	20	1	20.	5.0	10.
2-Butanone	U	50	ug/L	20	5	100	26.	50.
2-Chlorotoluene	U	10	ug/L	20	1	20.	4.0	10.
2-Hexanone	U	50	ug/L	20	5	100	34.	50.
4-Chlorotoluene	U	10	ug/L	20	1	20.	5.2	10.
P-Isopropyltoluene	U	10	ug/L	20	1	20.	5.0	10.
4-Methyl-2-Pentanone	U	50	ug/L	20	5	100	26.	50.
Acetone	U	50	ug/L	20	5	100	44.	50.
Benzene	U	10	ug/L	20	1	20.	5.2	10.
Bromobenzene	U	10	ug/L	20	1	20.	4.8	10.
Bromoform	U	10	ug/L	20	1	20.	4.6	10.
Bromomethane	U	20	ug/L	20	2	40.	9.8	20.
Carbon Disulfide	U	10	ug/L	20	1	20.	5.0	10.
Carbon Tetrachloride	U	10	ug/L	20	1	20.	4.4	10.
Chlorobenzene	U	10	ug/L	20	1	20.	4.4	10.

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14DL
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: T4748.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	10	ug/L	20	1	20.	4.2	10.
Dibromochloromethane	U	10	ug/L	20	1	20.	6.0	10.
Chloroethane	U	20	ug/L	20	2	40.	11.	20.
Chloroform	U	10	ug/L	20	1	20.	6.4	10.
Chloromethane	U	20	ug/L	20	2	40.	7.2	20.
cis-1,2-Dichloroethene	U	10	ug/L	20	1	20.	4.2	10.
cis-1,3-Dichloropropene	U	10	ug/L	20	1	20.	3.8	10.
Dibromomethane	U	10	ug/L	20	1	20.	9.2	10.
Bromodichloromethane	U	10	ug/L	20	1	20.	6.6	10.
Dichlorodifluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Ethylbenzene	U	10	ug/L	20	1	20.	4.2	10.
1,2-Dibromoethane	U	10	ug/L	20	1	20.	4.4	10.
Hexachlorobutadiene	U	15	ug/L	20	1	20.	10.	15.
Isopropylbenzene	U	10	ug/L	20	1	20.	4.6	10.
Methyl tert-butyl Ether	U	10	ug/L	20	1	20.	7.2	10.
Methylene Chloride	U	50	ug/L	20	5	100	23.	50.
m+p-Xylenes	U	20	ug/L	20	2	40.	12.	20.
Naphthalene	U	10	ug/L	20	1	20.	6.0	10.
N-Butylbenzene	U	10	ug/L	20	1	20.	4.6	10.
N-Propylbenzene	U	10	ug/L	20	1	20.	5.2	10.
o-Xylene	U	10	ug/L	20	1	20.	5.0	10.
sec-Butylbenzene	U	10	ug/L	20	1	20.	4.2	10.
Styrene	U	10	ug/L	20	1	20.	4.6	10.
tert-Butylbenzene	U	10	ug/L	20	1	20.	6.2	10.
Tetrachloroethene	U	10	ug/L	20	1	20.	8.0	10.
Toluene	U	10	ug/L	20	1	20.	5.4	10.
trans-1,2-Dichloroethene	U	10	ug/L	20	1	20.	5.0	10.
trans-1,3-Dichloropropene	U	10	ug/L	20	1	20.	4.0	10.
Trichloroethene	U	10	ug/L	20	1	20.	5.6	10.
Trichlorofluoromethane	U	20	ug/L	20	2	40.	4.8	20.
Vinyl Chloride	U	20	ug/L	20	2	40.	5.0	20.
Dibromofluoromethane		118.	%					
1,2-Dichloroethane-d4	*	126.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		90.6	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4748.D
Report Date: 28-Mar-2018 09:57

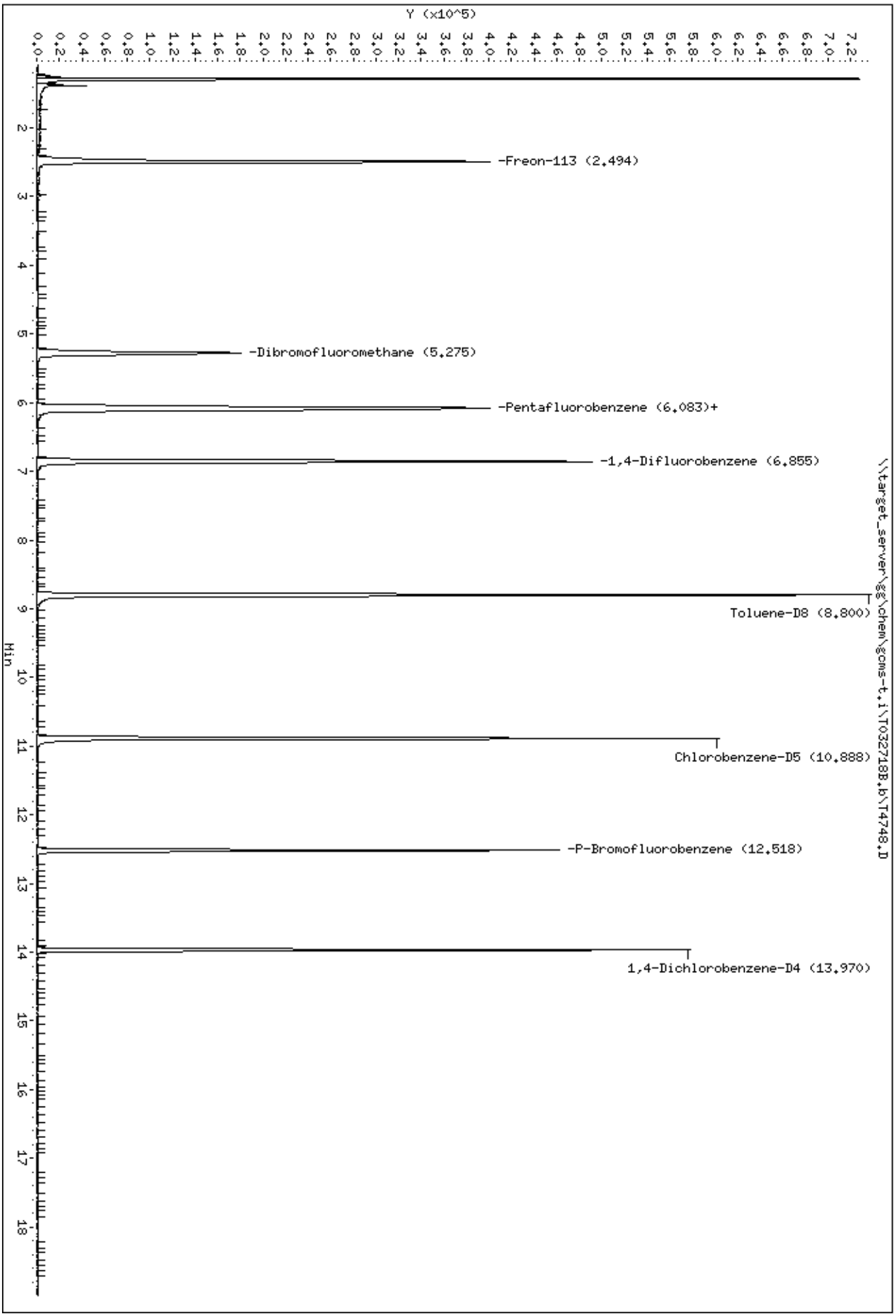
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4748.D
Lab Smp Id: SL2295-14DL Client Smp ID: HAAP-21C-UGIA-DPT07
Inj Date : 27-MAR-2018 16:55
Operator : JSS Inst ID: gcms-t.i
Smp Info : SL2295-14DL
Misc Info : WG225462,WG225352-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 10
Dil Factor: 20.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	20.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.493	2.486	(0.410)	120327	89.5328	1790	
$ 34	Dibromofluoromethane	113	5.275	5.275	(0.868)	165775	58.9406	58.9	
* 41	Pentafluorobenzene	168	6.075	6.068	(1.000)	279528	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.004)	241028	62.9251	62.9	
* 48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	487996	50.0000		
$ 58	Toluene-D8	98	8.800	8.800	(1.284)	578364	50.5080	50.5	
* 68	Chlorobenzene-D5	117	10.887	10.888	(1.000)	386042	50.0000		
$ 78	P-Bromofluorobenzene	95	12.518	12.511	(1.826)	167597	45.2790	45.3	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	157532	50.0000		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Date : 27-MAR-2018 16:55
Client ID: HAAP-21C-UGIA-DPT07
Sample Info: SL2295-14DL
Instrument: gcms-t.i
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4748.D
Y (x10^5)
Min
-Freon-113 (2.494)
-Dibromofluoromethane (5.275)
-Pentafluorobenzene (6.083)+
-1,4-Difluorobenzene (6.855)
Toluene-D8 (8.800)
Chlorobenzene-D5 (10.888)
-P-Bromofluorobenzene (12.518)
1,4-Dichlorobenzene-D4 (13.970)

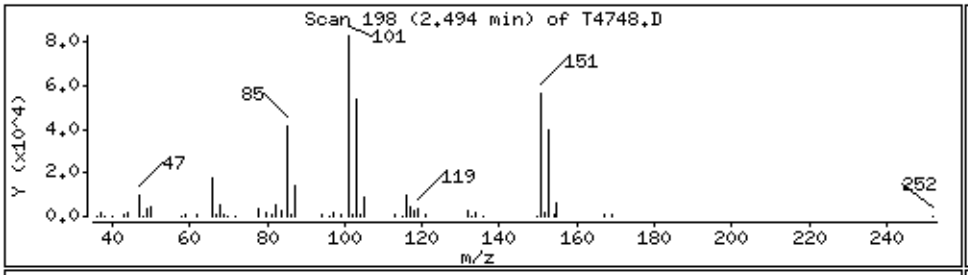
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4748.D

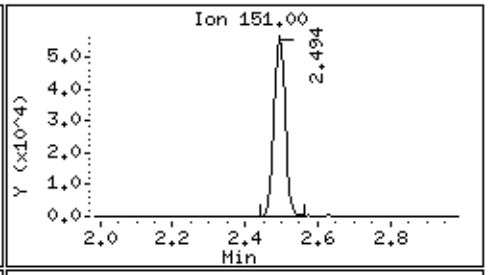
Date : 27-MAR-2018 16:55

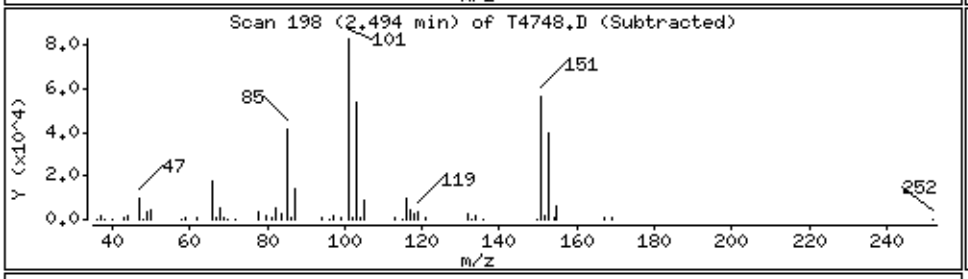
Client ID: HAAP-21C-UGIA-DPT07 Instrument: gcms-t.i

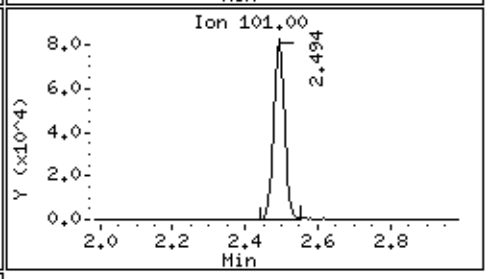
Sample Info: SL2295-14DL

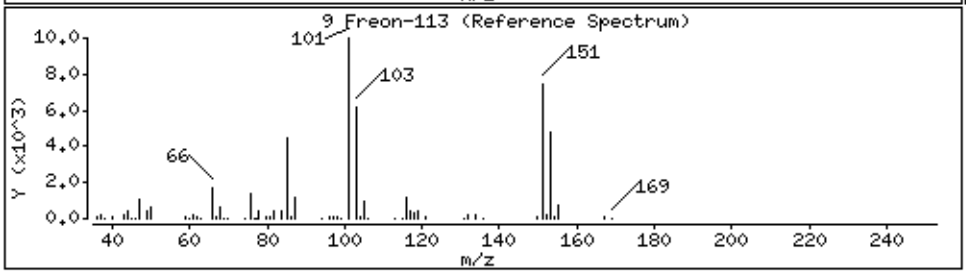
9 Freon-113 Concentration: 1790 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-15
Client ID: CHAAP-21C-UGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4936.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		32	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-15
Client ID: CHAAP-21C-UGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4936.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		94.9	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4936.D
Report Date: 28-Mar-2018 09:37

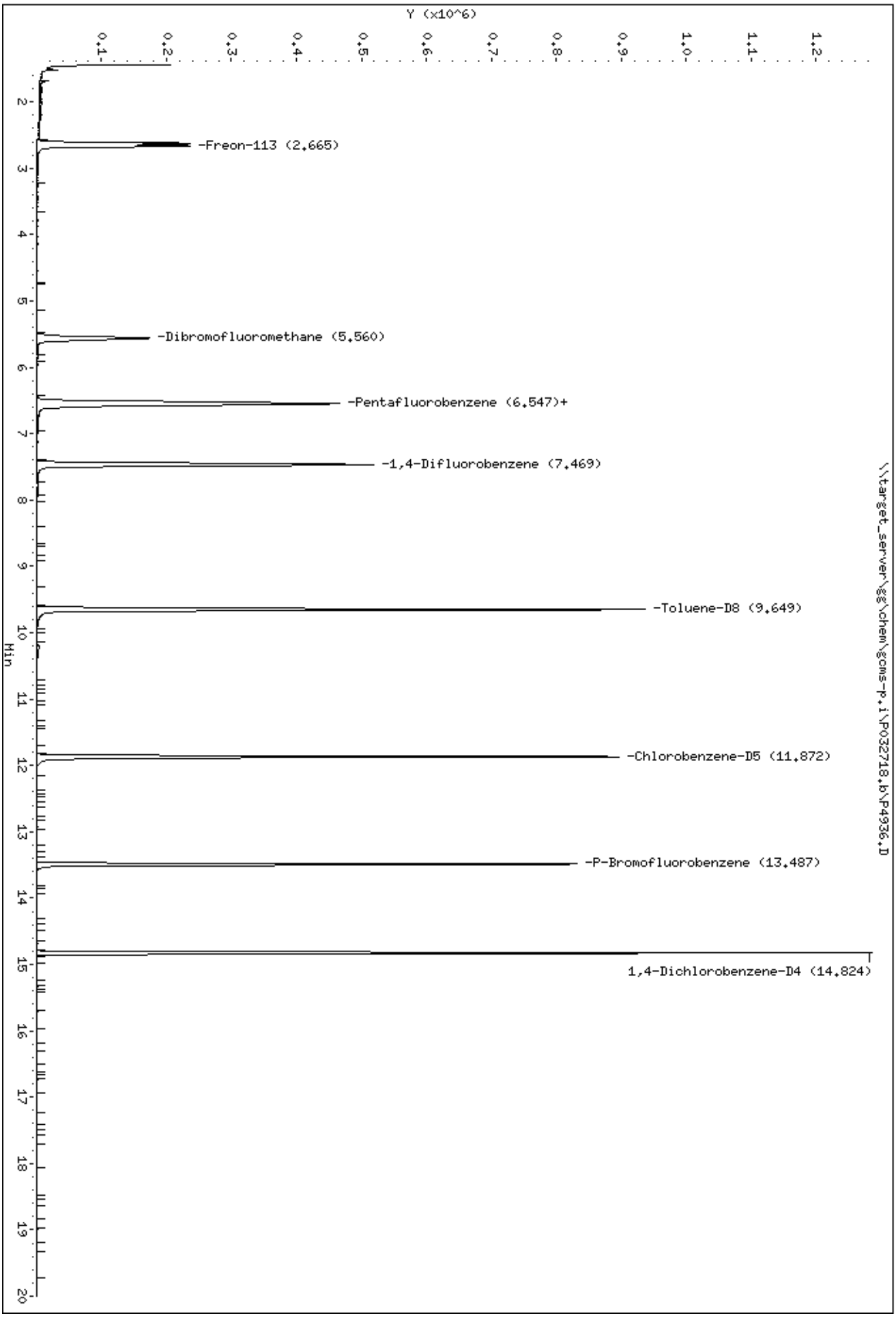
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4936.D
Lab Smp Id: SL2295-15 Client Smp ID: HAAP-21C-UGIA-DPT09
Inj Date : 27-MAR-2018 14:17 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-15
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.665	2.659	(0.408)	70796	32.1787	32.2	
$ 34	Dibromofluoromethane	113	5.560	5.561	(0.850)	182211	56.6716	56.7	
* 41	Pentafluorobenzene	168	6.539	6.541	(1.000)	331021	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.561	6.569	(1.003)	265994	58.5437	58.5	
* 48	1,4-Difluorobenzene	114	7.468	7.470	(1.000)	606242	50.0000		
$ 58	Toluene-D8	98	9.649	9.650	(1.292)	748246	50.0358	50.0	
* 68	Chlorobenzene-D5	117	11.872	11.873	(1.000)	595799	50.0000		
$ 78	P-Bromofluorobenzene	95	13.487	13.496	(1.806)	280858	47.4479	47.4	
* 94	1,4-Dichlorobenzene-D4	152	14.824	14.832	(1.000)	308067	50.0000		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Date : 27-MAR-2018 14:17
Client ID: MAAP-21C-UGIA-DPT09
Sample Info: SL2295-15
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032718.b\P4936.D
Y (x10^6)
Min
-Freon-113 (2.665)
-Dibromofluoromethane (5.560)
-Pentafluorobenzene (6.547)+
-1,4-Difluorobenzene (7.469)
-Toluene-D8 (9.649)
-Chlorobenzene-D5 (11.872)
-P-Bromofluorobenzene (13.487)
1,4-Dichlorobenzene-D4 (14.824)

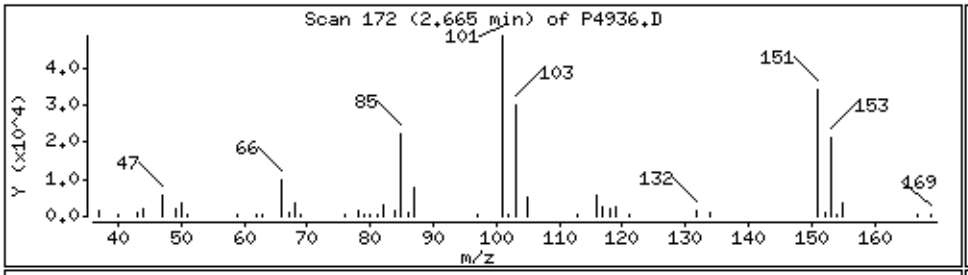
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4936.D

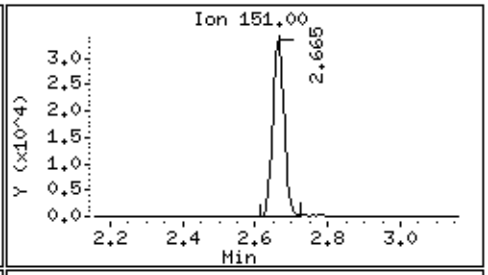
Date : 27-MAR-2018 14:17

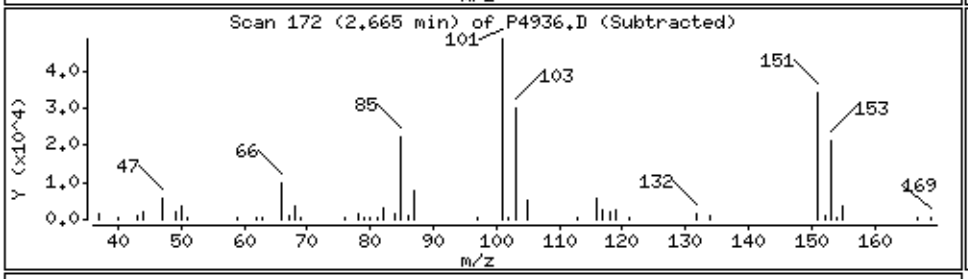
Client ID: HAAP-21C-UGIA-DPT09 Instrument: gcms-p.i

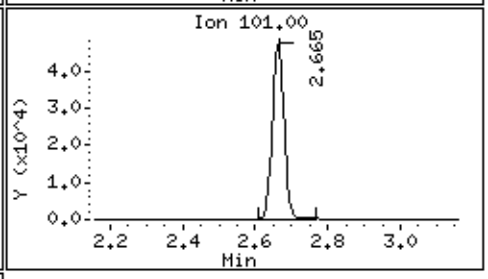
Sample Info: SL2295-15

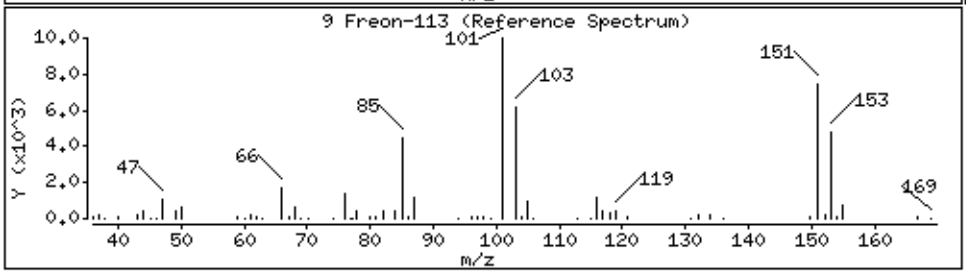
9 Freon-113 Concentration: 32.2 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4937.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	650	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4937.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		94.2	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4937.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4937.D
Lab Smp Id: SL2295-16 Client Smp ID: HAAP-21C-UGIA-DPT11
Inj Date : 27-MAR-2018 14:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-16
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

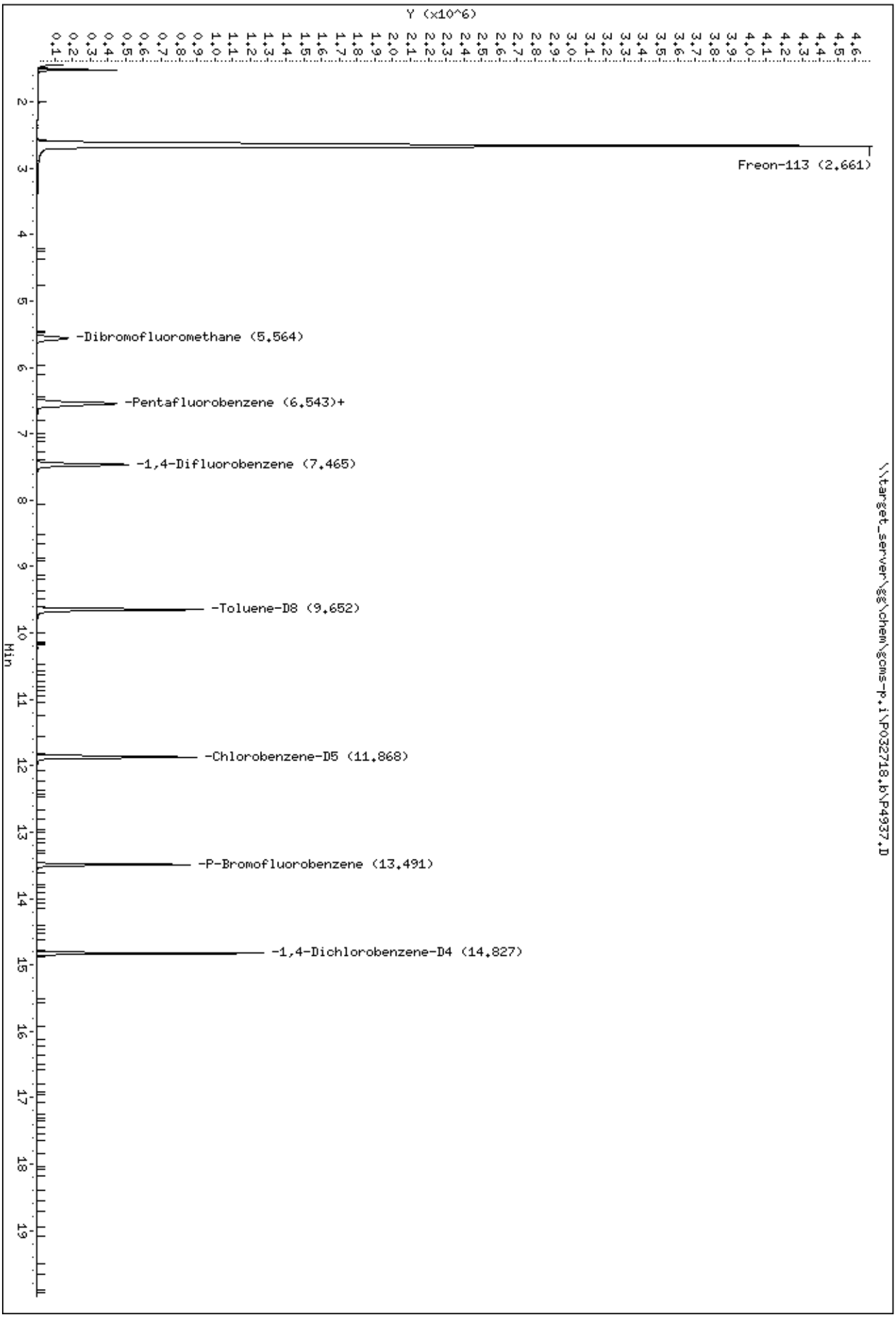
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.661	2.659	(0.407)	1420391	651.822	652(A)	
$	34 Dibromofluoromethane	113	5.563	5.561	(0.851)	179438	56.3465	56.3	
*	41 Pentafluorobenzene	168	6.535	6.541	(1.000)	327864	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.564	6.569	(1.004)	261980	58.2155	58.2	
*	48 1,4-Difluorobenzene	114	7.464	7.470	(1.000)	595941	50.0000		
$	58 Toluene-D8	98	9.652	9.650	(1.293)	745477	50.7123	50.7	
*	68 Chlorobenzene-D5	117	11.875	11.873	(1.000)	585048	50.0000		
$	78 P-Bromofluorobenzene	95	13.490	13.496	(1.807)	273985	47.0868	47.1	
*	94 1,4-Dichlorobenzene-D4	152	14.827	14.832	(1.000)	301163	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


Y (x10^6)
Min
Freon-113 (2.661)
-Dibromofluoromethane (5.564)
-Pentafluorobenzene (6.543)+
-1,4-Difluorobenzene (7.465)
-Toluene-D8 (9.652)
-Chlorobenzene-D5 (11.868)
-P-Bromofluorobenzene (13.491)
-1,4-Dichlorobenzene-D4 (14.827)
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4937.D
Date : 27-MAR-2018 14:51
Client ID: HAAP-21C-UGIA-DPT11
Sample Info: SL2295-16
Instrument: gcms-p.i
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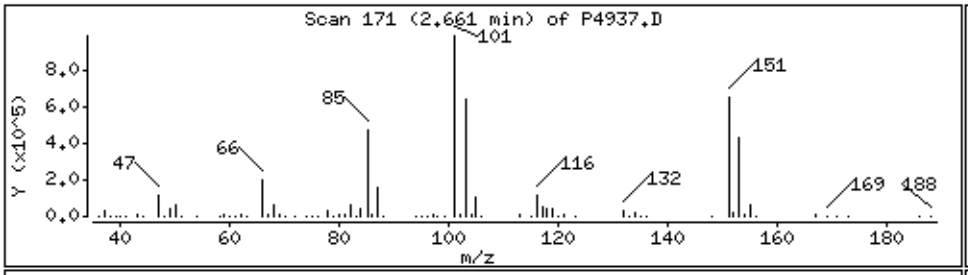
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4937.D

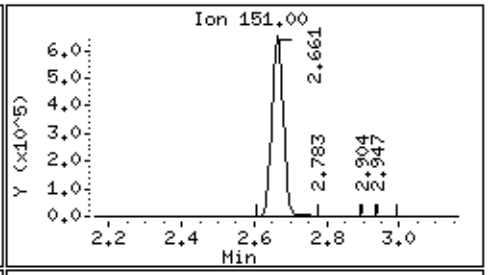
Date : 27-MAR-2018 14:51

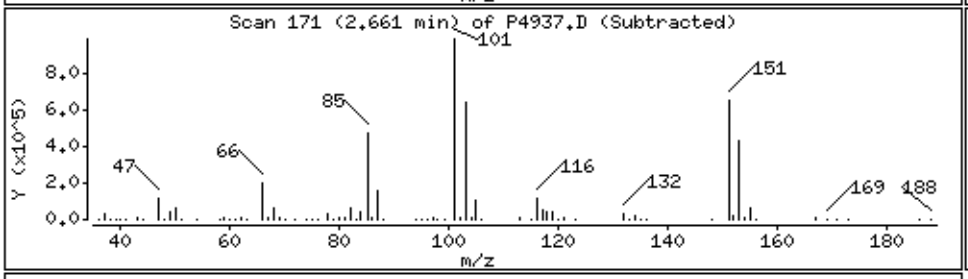
Client ID: HAAP-21C-UGIA-DPT11 Instrument: gcms-p.i

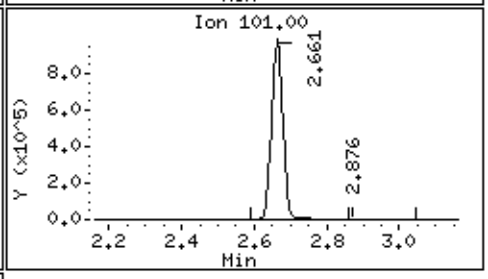
Sample Info: SL2295-16

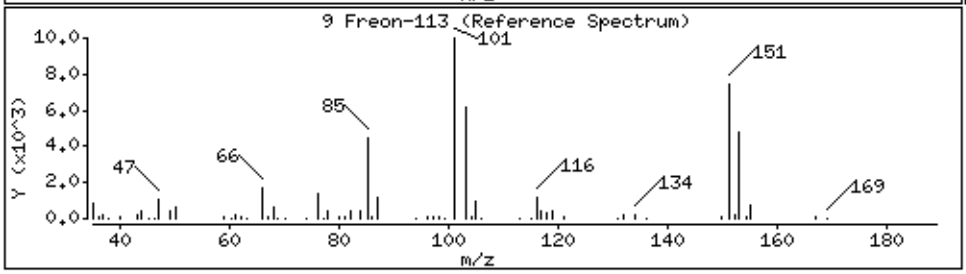
9 Freon-113 Concentration: 652 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16DL
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4975.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,1,1-Trichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,1,2,2-Tetrachloroethane	U	5.0	ug/L	10	1	10.	3.8	5.0
Freon-113		580	ug/L	10	1	10.	3.1	5.0
1,1,2-Trichloroethane	U	5.0	ug/L	10	1	10.	3.3	5.0
1,1-Dichloroethane	U	5.0	ug/L	10	1	10.	2.1	5.0
1,1-Dichloroethene	U	5.0	ug/L	10	1	10.	3.5	5.0
1,1-Dichloropropene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2,3-Trichlorobenzene	U	5.0	ug/L	10	1	10.	2.7	5.0
1,2,3-Trichloropropane	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2,4-Trichlorobenzene	U	5.0	ug/L	10	1	10.	3.7	5.0
1,2,4-Trimethylbenzene	U	5.0	ug/L	10	1	10.	1.9	5.0
1,2-Dibromo-3-Chloropropane	U	5.0	ug/L	10	1	10.	5.0	5.0
1,2-Dichlorobenzene	U	5.0	ug/L	10	1	10.	1.5	5.0
1,2-Dichloroethane	U	5.0	ug/L	10	1	10.	2.0	5.0
1,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
1,3,5-Trimethylbenzene	U	5.0	ug/L	10	1	10.	2.0	5.0
1,3-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
1,3-Dichloropropane	U	5.0	ug/L	10	1	10.	2.2	5.0
1,4-Dichlorobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
2,2-Dichloropropane	U	5.0	ug/L	10	1	10.	2.5	5.0
2-Butanone	U	25	ug/L	10	5	50.	13.	25.
2-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.0	5.0
2-Hexanone	U	25	ug/L	10	5	50.	17.	25.
4-Chlorotoluene	U	5.0	ug/L	10	1	10.	2.6	5.0
P-Isopropyltoluene	U	5.0	ug/L	10	1	10.	2.5	5.0
4-Methyl-2-Pentanone	U	25	ug/L	10	5	50.	13.	25.
Acetone	U	25	ug/L	10	5	50.	22.	25.
Benzene	U	5.0	ug/L	10	1	10.	2.6	5.0
Bromobenzene	U	5.0	ug/L	10	1	10.	2.4	5.0
Bromoform	U	5.0	ug/L	10	1	10.	2.3	5.0
Bromomethane	U	10	ug/L	10	2	20.	4.9	10.
Carbon Disulfide	U	5.0	ug/L	10	1	10.	2.5	5.0
Carbon Tetrachloride	U	5.0	ug/L	10	1	10.	2.2	5.0
Chlorobenzene	U	5.0	ug/L	10	1	10.	2.2	5.0

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16DL
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4975.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	5.0	ug/L	10	1	10.	2.1	5.0
Dibromochloromethane	U	5.0	ug/L	10	1	10.	3.0	5.0
Chloroethane	U	10	ug/L	10	2	20.	5.5	10.
Chloroform	U	5.0	ug/L	10	1	10.	3.2	5.0
Chloromethane	U	10	ug/L	10	2	20.	3.6	10.
cis-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.1	5.0
cis-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	1.9	5.0
Dibromomethane	U	5.0	ug/L	10	1	10.	4.6	5.0
Bromodichloromethane	U	5.0	ug/L	10	1	10.	3.3	5.0
Dichlorodifluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Ethylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
1,2-Dibromoethane	U	5.0	ug/L	10	1	10.	2.2	5.0
Hexachlorobutadiene	U	7.5	ug/L	10	1	10.	5.2	7.5
Isopropylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
Methyl tert-butyl Ether	U	5.0	ug/L	10	1	10.	3.6	5.0
Methylene Chloride	U	25	ug/L	10	5	50.	11.	25.
m+p-Xylenes	U	10	ug/L	10	2	20.	5.9	10.
Naphthalene	U	5.0	ug/L	10	1	10.	3.0	5.0
N-Butylbenzene	U	5.0	ug/L	10	1	10.	2.3	5.0
N-Propylbenzene	U	5.0	ug/L	10	1	10.	2.6	5.0
o-Xylene	U	5.0	ug/L	10	1	10.	2.5	5.0
sec-Butylbenzene	U	5.0	ug/L	10	1	10.	2.1	5.0
Styrene	U	5.0	ug/L	10	1	10.	2.3	5.0
tert-Butylbenzene	U	5.0	ug/L	10	1	10.	3.1	5.0
Tetrachloroethene	U	5.0	ug/L	10	1	10.	4.0	5.0
Toluene	U	5.0	ug/L	10	1	10.	2.7	5.0
trans-1,2-Dichloroethene	U	5.0	ug/L	10	1	10.	2.5	5.0
trans-1,3-Dichloropropene	U	5.0	ug/L	10	1	10.	2.0	5.0
Trichloroethene	U	5.0	ug/L	10	1	10.	2.8	5.0
Trichlorofluoromethane	U	10	ug/L	10	2	20.	2.4	10.
Vinyl Chloride	U	10	ug/L	10	2	20.	2.5	10.
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		99.3	%					
P-Bromofluorobenzene		94.9	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4975.D
Report Date: 29-Mar-2018 11:07

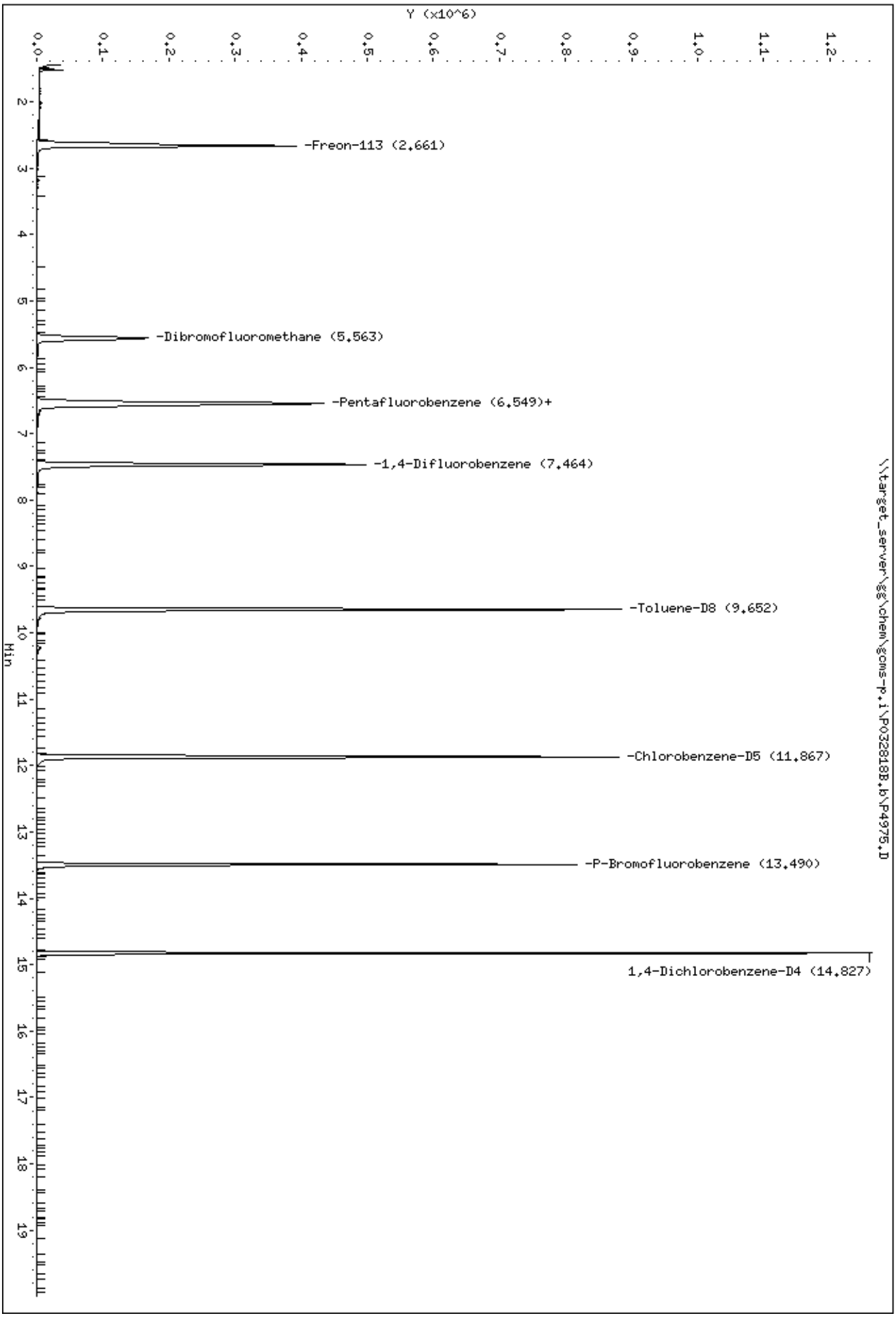
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4975.D
Lab Smp Id: SL2295-16DL Client Smp ID: HAAP-21C-UGIA-DPT11
Inj Date : 28-MAR-2018 15:03 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-16DL
Misc Info : WG225530,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 29-Mar-2018 07:09 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 11
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.660	2.659	(0.407)	120814	58.2716	583	
$ 34	Dibromofluoromethane	113	5.562	5.561	(0.850)	171437	56.5816	56.6	
* 41	Pentafluorobenzene	168	6.542	6.541	(1.000)	311943	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.563	6.569	(1.003)	247468	57.7974	57.8	
* 48	1,4-Difluorobenzene	114	7.464	7.470	(1.000)	577598	50.0000		
$ 58	Toluene-D8	98	9.651	9.650	(1.293)	707536	49.6599	49.6	
* 68	Chlorobenzene-D5	117	11.867	11.873	(1.000)	566127	50.0000		
$ 78	P-Bromofluorobenzene	95	13.490	13.496	(1.807)	267580	47.4465	47.4	
* 94	1,4-Dichlorobenzene-D4	152	14.826	14.832	(1.000)	290357	50.0000		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Date : 28-MAR-2018 15:03
Client ID: HAAP-21C-UGIA-DPT11
Sample Info: SL2295-16DL
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032818B.b\P4975.D
Y (x10^6)
Min
-Freon-113 (2.661)
-Dibromofluoromethane (5.563)
-Pentafluorobenzene (6.549)+
-1,4-Difluorobenzene (7.464)
-Toluene-D8 (9.652)
-Chlorobenzene-D5 (11.867)
-P-Bromofluorobenzene (13.490)
1,4-Dichlorobenzene-D4 (14.827)

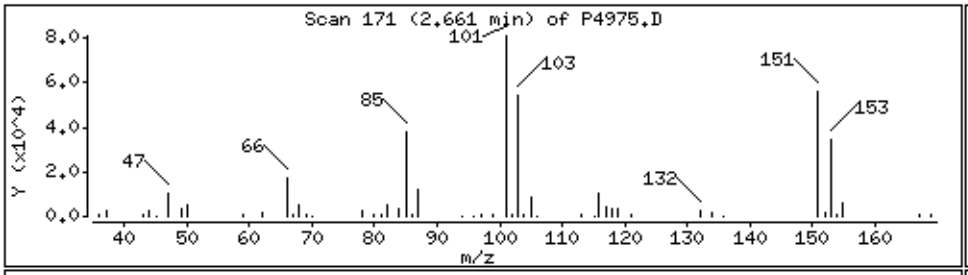
Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4975.D

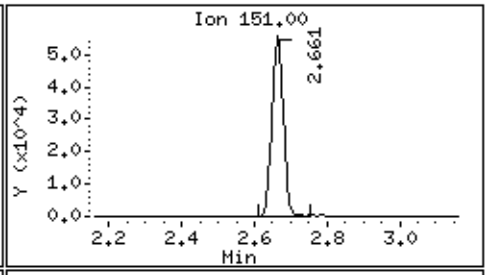
Date : 28-MAR-2018 15:03

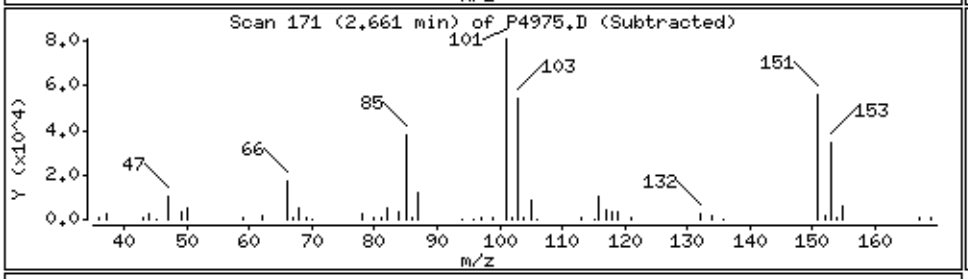
Client ID: HAAP-21C-UGIA-DPT11 Instrument: gcms-p.i

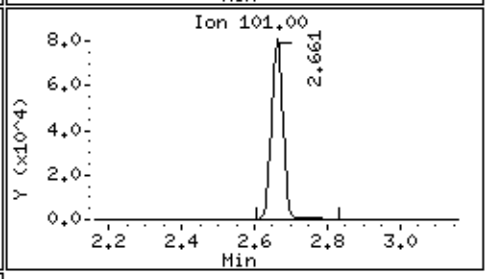
Sample Info: SL2295-16DL

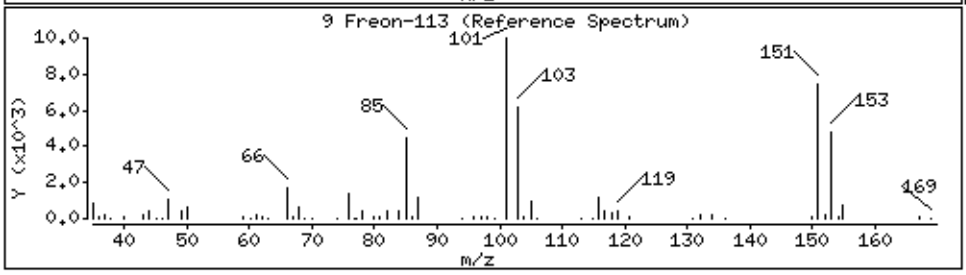
9 Freon-113 Concentration: 583 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-17
Client ID: CHAAP-21C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4938.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		23	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-17
Client ID: CHAAP-21C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4938.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		112.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		95.1	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4938.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4938.D
Lab Smp Id: SL2295-17 Client Smp ID: HAAP-21C-UGIA-DPT13
Inj Date : 27-MAR-2018 15:26 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-17
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.659	2.659	(0.407)	49425	22.9630	23.0	
$ 34	Dibromofluoromethane	113	5.561	5.561	(0.850)	176009	55.9562	56.0	
* 41	Pentafluorobenzene	168	6.540	6.541	(1.000)	323842	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.562	6.569	(1.003)	256764	57.7650	57.8	
* 48	1,4-Difluorobenzene	114	7.462	7.470	(1.000)	583327	50.0000		
$ 58	Toluene-D8	98	9.650	9.650	(1.293)	726323	50.4778	50.5	
* 68	Chlorobenzene-D5	117	11.873	11.873	(1.000)	572466	50.0000		
$ 78	P-Bromofluorobenzene	95	13.488	13.496	(1.807)	270714	47.5307	47.5	
* 94	1,4-Dichlorobenzene-D4	152	14.825	14.832	(1.000)	295866	50.0000		

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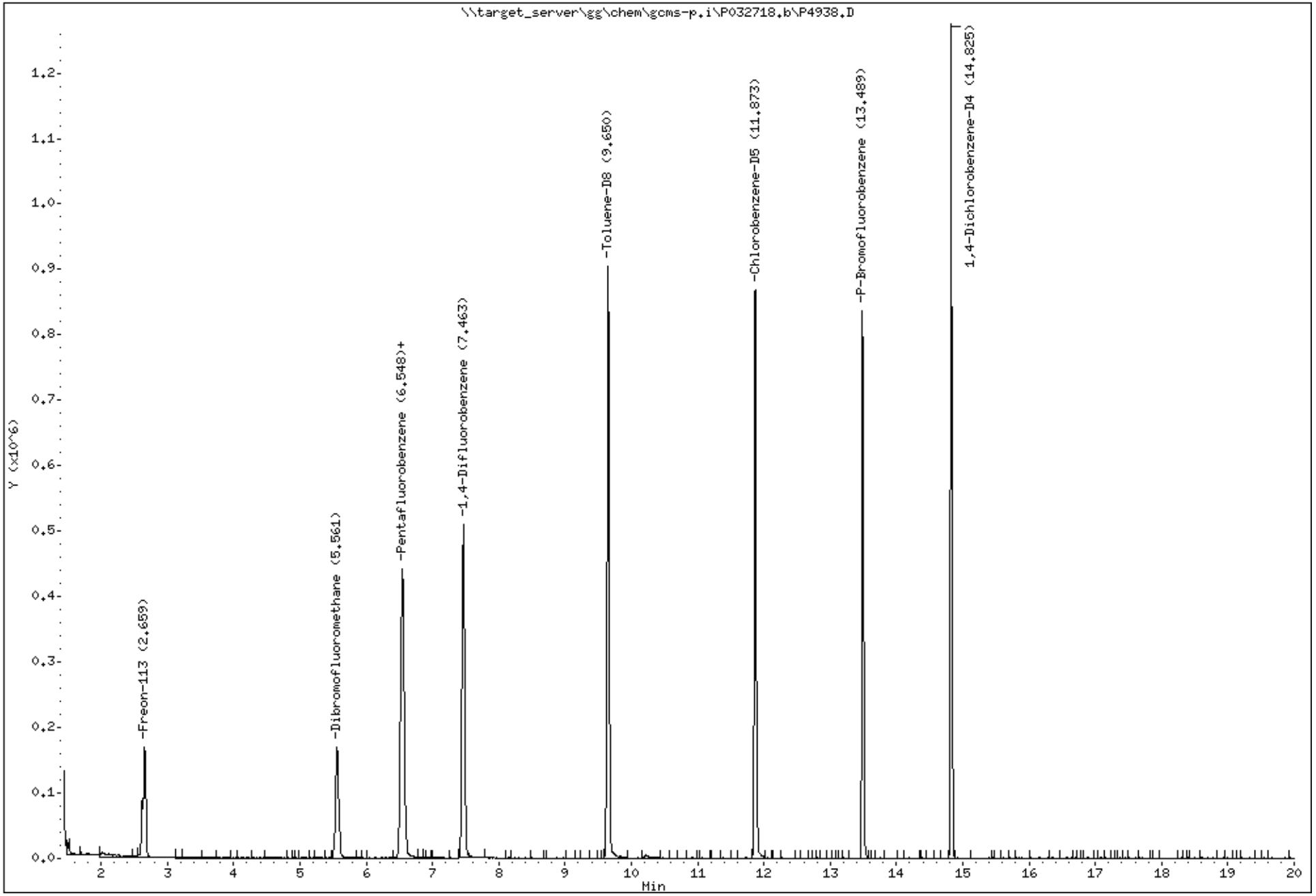
Date : 27-MAR-2018 15:26
Client ID: HAAP-21C-UGIA-DPT13 Instrument: gcms-p.i
Sample Info: SL2295-17



Katahdin Analytical Services 1000159

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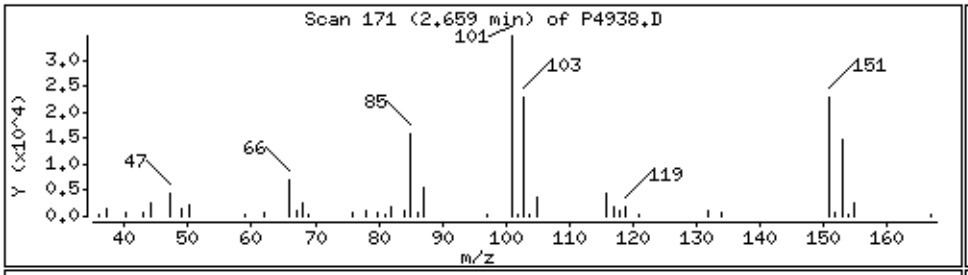
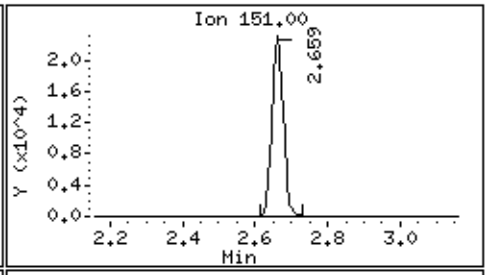
Date : 27-MAR-2018 15:26

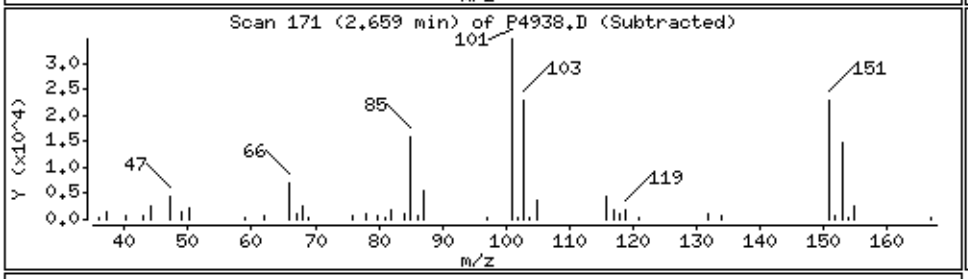
Client ID: HAAP-21C-UGIA-DPT13 Instrument: gcms-p.i

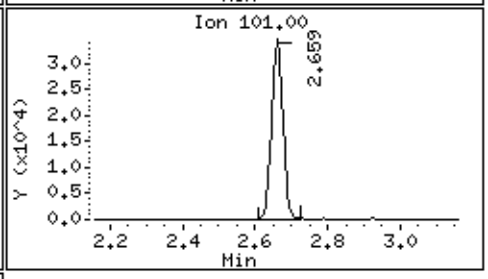
Sample Info: SL2295-17

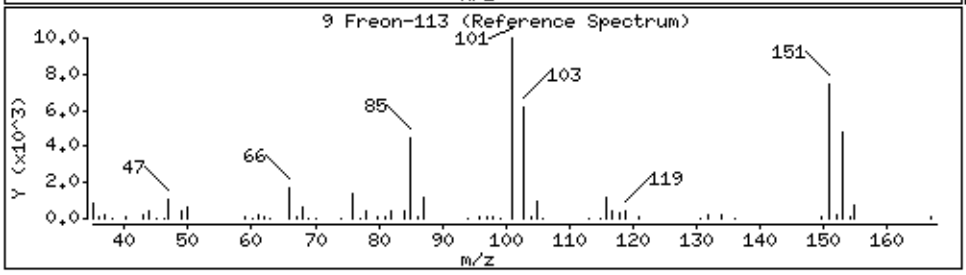
9 Freon-113 Concentration: 23.0 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-18
Client ID: CHAAP-21C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4939.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	J	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-18
Client ID: CHAAP-21C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4939.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4		117.	%					
Toluene-d8		99.1	%					
P-Bromofluorobenzene		93.7	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4939.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4939.D
Lab Smp Id: SL2295-18 Client Smp ID: HAAP-21C-UGIA-DPT15
Inj Date : 27-MAR-2018 16:00 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-18
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

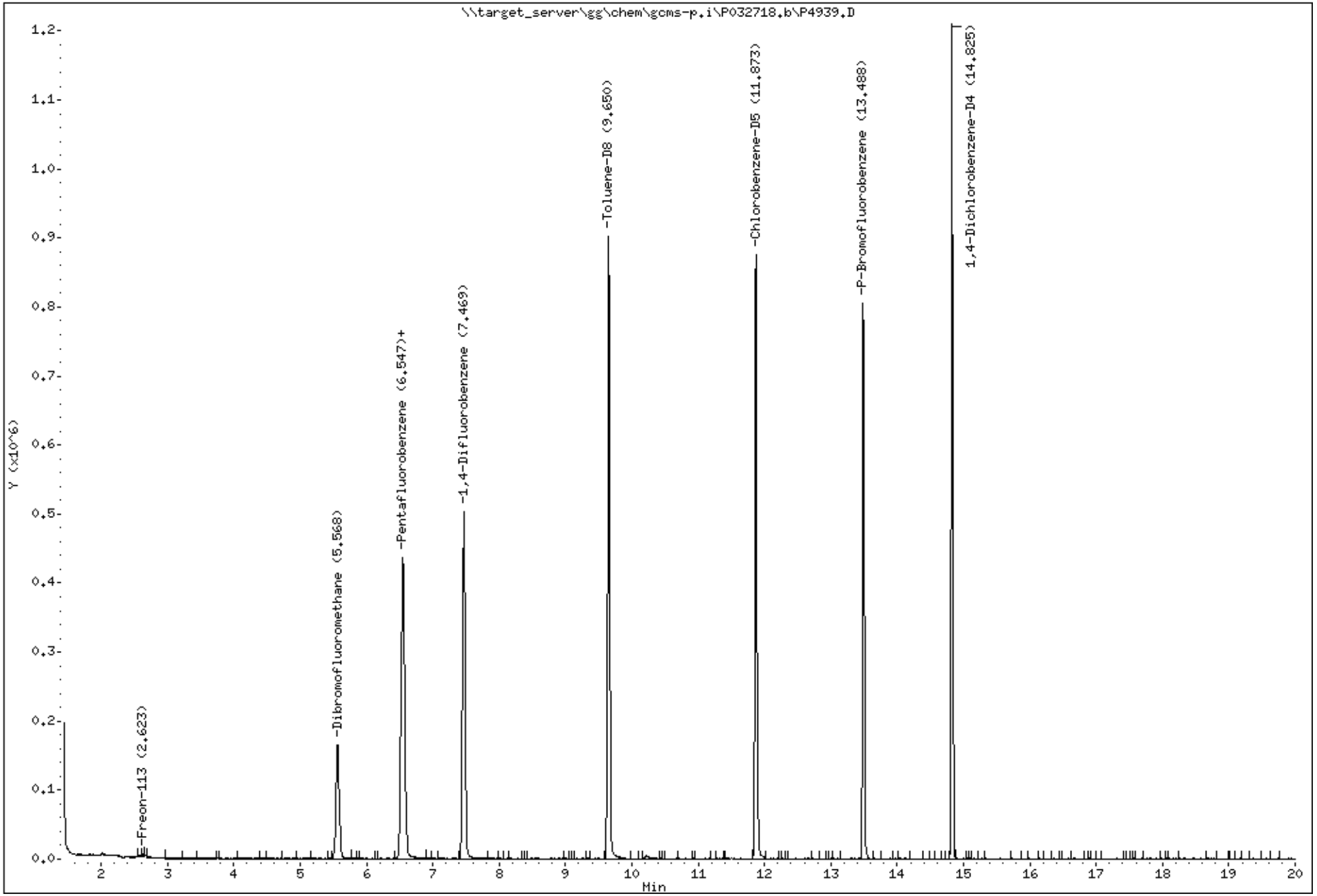
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.658	2.659	(0.407)	1062	0.50484	0.50(a)	
$ 34	Dibromofluoromethane	113	5.568	5.561	(0.851)	171371	55.7436	55.7	
* 41	Pentafluorobenzene	168	6.540	6.541	(1.000)	316511	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.568	6.569	(1.004)	255073	58.7137	58.7	
* 48	1,4-Difluorobenzene	114	7.469	7.470	(1.000)	584092	50.0000		
$ 58	Toluene-D8	98	9.649	9.650	(1.292)	713727	49.5374	49.5	
* 68	Chlorobenzene-D5	117	11.872	11.873	(1.000)	569276	50.0000		
$ 78	P-Bromofluorobenzene	95	13.488	13.496	(1.806)	267141	46.8420	46.8	
* 94	1,4-Dichlorobenzene-D4	152	14.824	14.832	(1.000)	289256	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4939.D
Date : 27-MAR-2018 16:00
Client ID: HAAP-21C-UGIA-DPT15 Instrument: gcms-p.i
Sample Info: SL2295-18



Katahdin Analytical Services 1000164

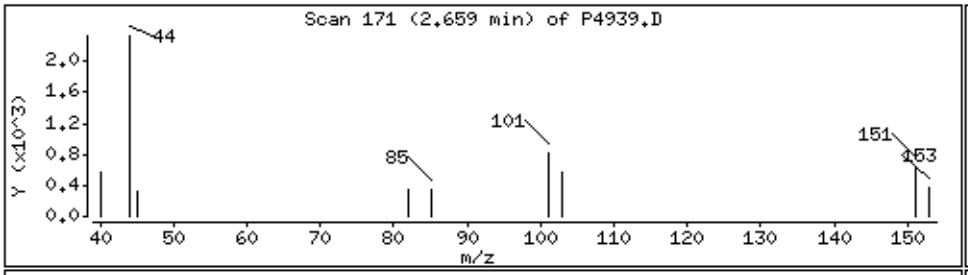
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4939.D

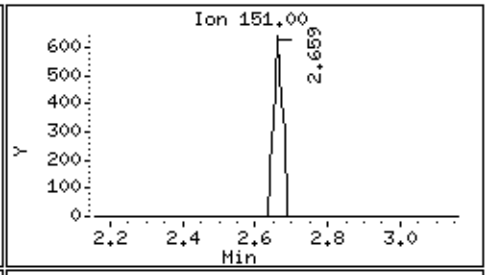
Date : 27-MAR-2018 16:00

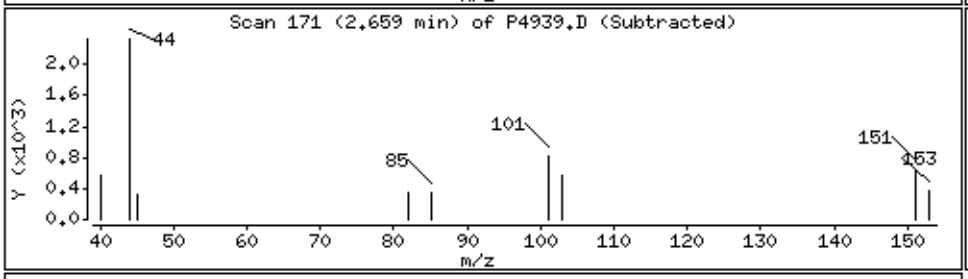
Client ID: HAAP-21C-UGIA-DPT15 Instrument: gcms-p.i

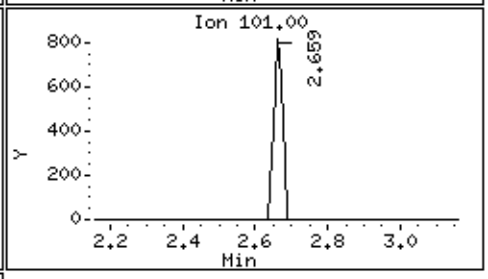
Sample Info: SL2295-18

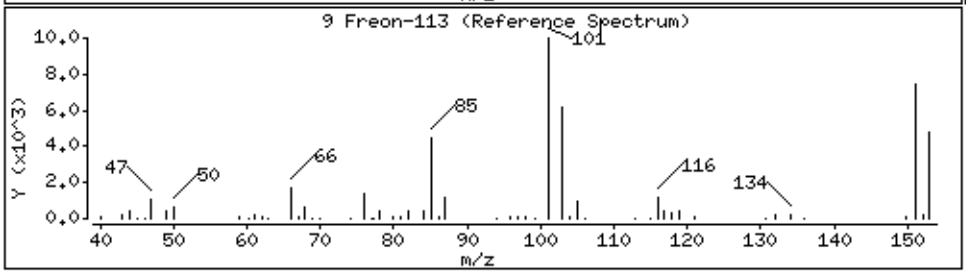
9 Freon-113 Concentration: 0.50 ug/l











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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4940.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	330	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4940.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		116.	%					
1,2-Dichloroethane-d4		119.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		93.9	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4940.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4940.D
Lab Smp Id: SL2295-19 Client Smp ID: HAAP-21C-UGIA-DPT17
Inj Date : 27-MAR-2018 16:34 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-19
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

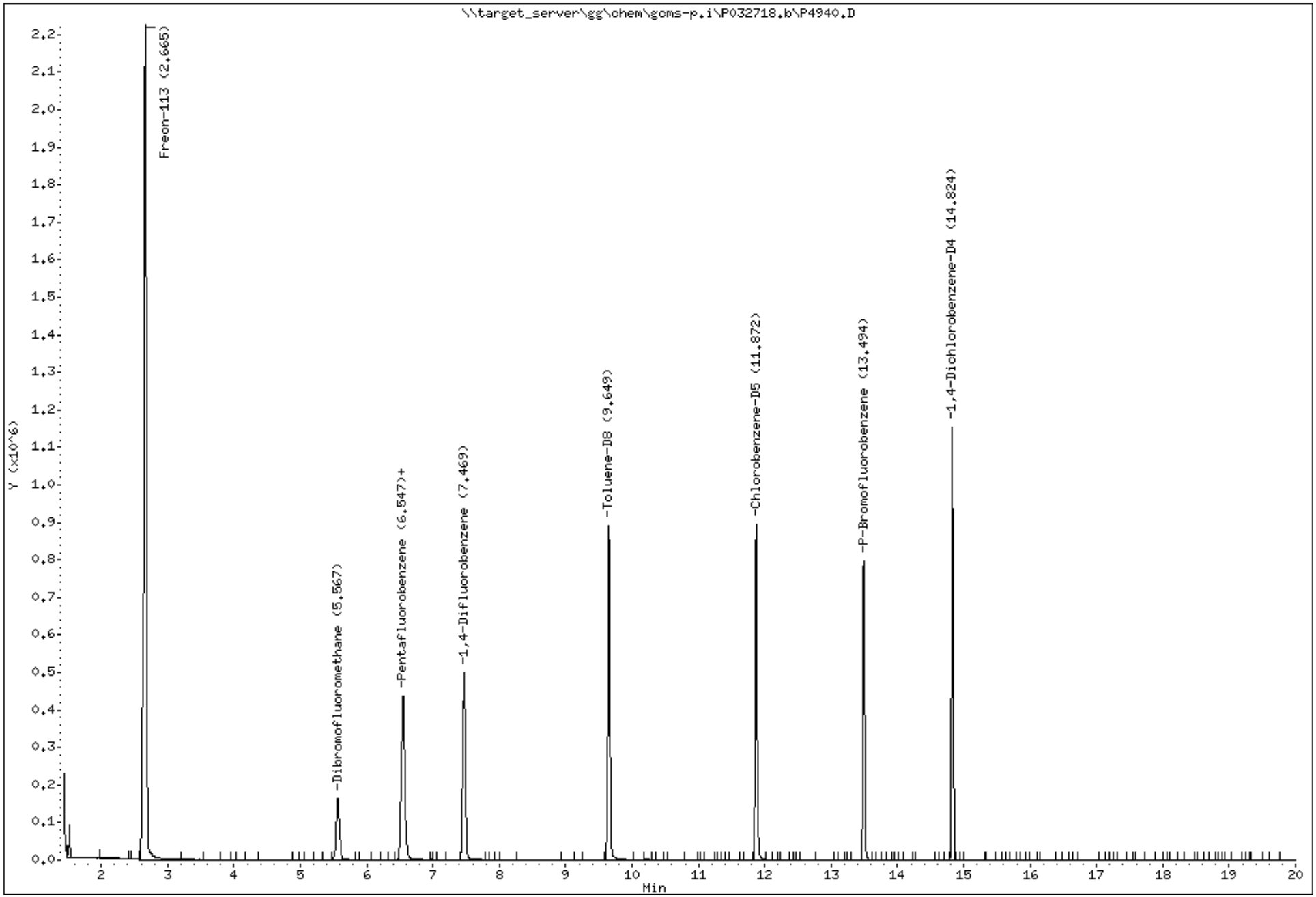
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.665	2.659	(0.408)	679346	329.889	330(A)	
$	34 Dibromofluoromethane	113	5.567	5.561	(0.851)	174456	57.9689	58.0	
*	41 Pentafluorobenzene	168	6.539	6.541	(1.000)	309840	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.567	6.569	(1.004)	252264	59.3174	59.3	
*	48 1,4-Difluorobenzene	114	7.468	7.470	(1.000)	574747	50.0000		
$	58 Toluene-D8	98	9.648	9.650	(1.292)	714556	50.4013	50.4	
*	68 Chlorobenzene-D5	117	11.871	11.873	(1.000)	558922	50.0000		
$	78 P-Bromofluorobenzene	95	13.494	13.496	(1.807)	263494	46.9537	47.0	
*	94 1,4-Dichlorobenzene-D4	152	14.831	14.832	(1.000)	289228	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4940.D
Date : 27-MAR-2018 16:34
Client ID: HAAP-21C-UGIA-DPT17 Instrument: gcms-p.i
Sample Info: SL2295-19



Katahdin Analytical Services 1000169

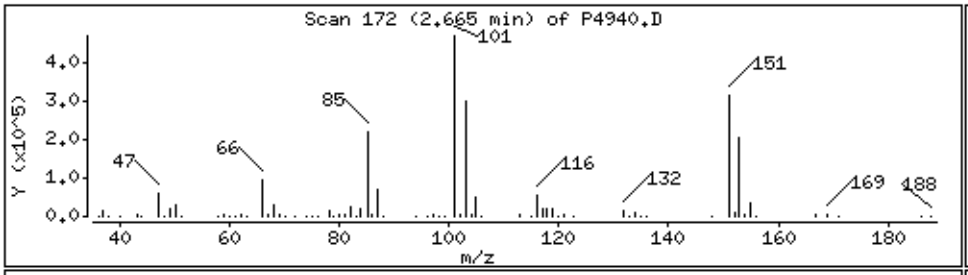
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4940.D

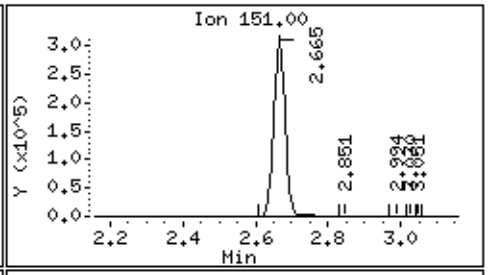
Date : 27-MAR-2018 16:34

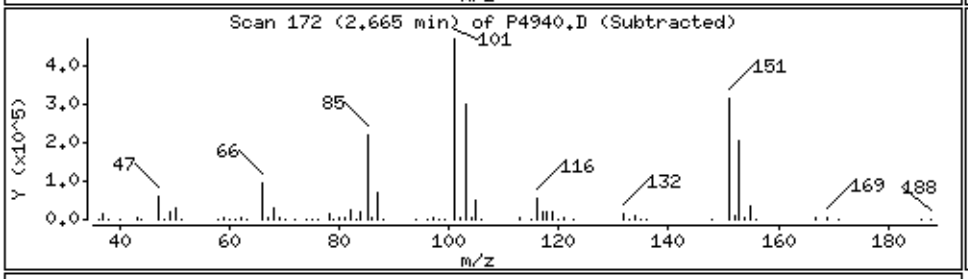
Client ID: HAAP-21C-UGIA-DPT17 Instrument: gcms-p.i

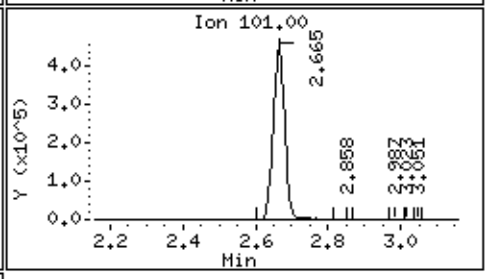
Sample Info: SL2295-19

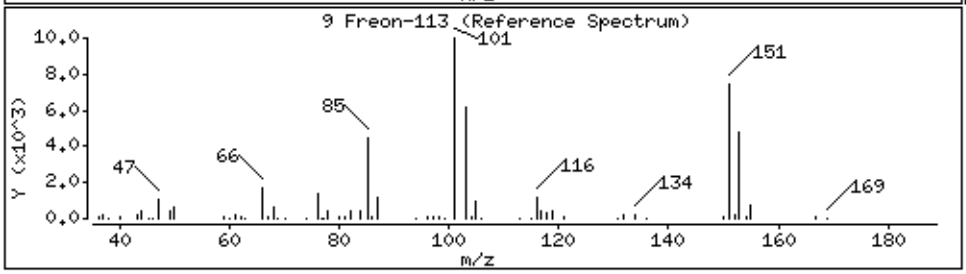
9 Freon-113 Concentration: 330 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19DL
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4976.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	2.0	ug/L	4	1	4.0	0.76	2.0
1,1,1-Trichloroethane	U	2.0	ug/L	4	1	4.0	0.80	2.0
1,1,2,2-Tetrachloroethane	U	2.0	ug/L	4	1	4.0	1.5	2.0
Freon-113		260	ug/L	4	1	4.0	1.2	2.0
1,1,2-Trichloroethane	U	2.0	ug/L	4	1	4.0	1.3	2.0
1,1-Dichloroethane	U	2.0	ug/L	4	1	4.0	0.84	2.0
1,1-Dichloroethene	U	2.0	ug/L	4	1	4.0	1.4	2.0
1,1-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.84	2.0
1,2,3-Trichlorobenzene	U	2.0	ug/L	4	1	4.0	1.1	2.0
1,2,3-Trichloropropane	U	2.0	ug/L	4	1	4.0	0.76	2.0
1,2,4-Trichlorobenzene	U	2.0	ug/L	4	1	4.0	1.5	2.0
1,2,4-Trimethylbenzene	U	2.0	ug/L	4	1	4.0	0.76	2.0
1,2-Dibromo-3-Chloropropane	U	2.0	ug/L	4	1	4.0	2.0	2.0
1,2-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	0.60	2.0
1,2-Dichloroethane	U	2.0	ug/L	4	1	4.0	0.80	2.0
1,2-Dichloropropane	U	2.0	ug/L	4	1	4.0	1.0	2.0
1,3,5-Trimethylbenzene	U	2.0	ug/L	4	1	4.0	0.80	2.0
1,3-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
1,3-Dichloropropane	U	2.0	ug/L	4	1	4.0	0.88	2.0
1,4-Dichlorobenzene	U	2.0	ug/L	4	1	4.0	0.96	2.0
2,2-Dichloropropane	U	2.0	ug/L	4	1	4.0	1.0	2.0
2-Butanone	U	10	ug/L	4	5	20.	5.2	10.
2-Chlorotoluene	U	2.0	ug/L	4	1	4.0	0.80	2.0
2-Hexanone	U	10	ug/L	4	5	20.	6.8	10.
4-Chlorotoluene	U	2.0	ug/L	4	1	4.0	1.0	2.0
P-Isopropyltoluene	U	2.0	ug/L	4	1	4.0	1.0	2.0
4-Methyl-2-Pentanone	U	10	ug/L	4	5	20.	5.3	10.
Acetone	U	10	ug/L	4	5	20.	8.8	10.
Benzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
Bromobenzene	U	2.0	ug/L	4	1	4.0	0.96	2.0
Bromoform	U	2.0	ug/L	4	1	4.0	0.92	2.0
Bromomethane	U	4.0	ug/L	4	2	8.0	2.0	4.0
Carbon Disulfide	U	2.0	ug/L	4	1	4.0	1.0	2.0
Carbon Tetrachloride	U	2.0	ug/L	4	1	4.0	0.88	2.0
Chlorobenzene	U	2.0	ug/L	4	1	4.0	0.88	2.0

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19DL
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4976.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	2.0	ug/L	4	1	4.0	0.84	2.0
Dibromochloromethane	U	2.0	ug/L	4	1	4.0	1.2	2.0
Chloroethane	U	4.0	ug/L	4	2	8.0	2.2	4.0
Chloroform	U	2.0	ug/L	4	1	4.0	1.3	2.0
Chloromethane	U	4.0	ug/L	4	2	8.0	1.4	4.0
cis-1,2-Dichloroethene	U	2.0	ug/L	4	1	4.0	0.84	2.0
cis-1,3-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.76	2.0
Dibromomethane	U	2.0	ug/L	4	1	4.0	1.8	2.0
Bromodichloromethane	U	2.0	ug/L	4	1	4.0	1.3	2.0
Dichlorodifluoromethane	U	4.0	ug/L	4	2	8.0	0.96	4.0
Ethylbenzene	U	2.0	ug/L	4	1	4.0	0.84	2.0
1,2-Dibromoethane	U	2.0	ug/L	4	1	4.0	0.88	2.0
Hexachlorobutadiene	U	3.0	ug/L	4	1	4.0	2.1	3.0
Isopropylbenzene	U	2.0	ug/L	4	1	4.0	0.92	2.0
Methyl tert-butyl Ether	U	2.0	ug/L	4	1	4.0	1.4	2.0
Methylene Chloride	U	10	ug/L	4	5	20.	4.5	10.
m+p-Xylenes	U	4.0	ug/L	4	2	8.0	2.4	4.0
Naphthalene	U	2.0	ug/L	4	1	4.0	1.2	2.0
N-Butylbenzene	U	2.0	ug/L	4	1	4.0	0.92	2.0
N-Propylbenzene	U	2.0	ug/L	4	1	4.0	1.0	2.0
o-Xylene	U	2.0	ug/L	4	1	4.0	1.0	2.0
sec-Butylbenzene	U	2.0	ug/L	4	1	4.0	0.84	2.0
Styrene	U	2.0	ug/L	4	1	4.0	0.92	2.0
tert-Butylbenzene	U	2.0	ug/L	4	1	4.0	1.2	2.0
Tetrachloroethene	U	2.0	ug/L	4	1	4.0	1.6	2.0
Toluene	U	2.0	ug/L	4	1	4.0	1.1	2.0
trans-1,2-Dichloroethene	U	2.0	ug/L	4	1	4.0	1.0	2.0
trans-1,3-Dichloropropene	U	2.0	ug/L	4	1	4.0	0.80	2.0
Trichloroethene	U	2.0	ug/L	4	1	4.0	1.1	2.0
Trichlorofluoromethane	U	4.0	ug/L	4	2	8.0	0.96	4.0
Vinyl Chloride	U	4.0	ug/L	4	2	8.0	1.0	4.0
Dibromofluoromethane		114.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		101.	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4976.D
Report Date: 29-Mar-2018 11:08

Katahdin Analytical Services

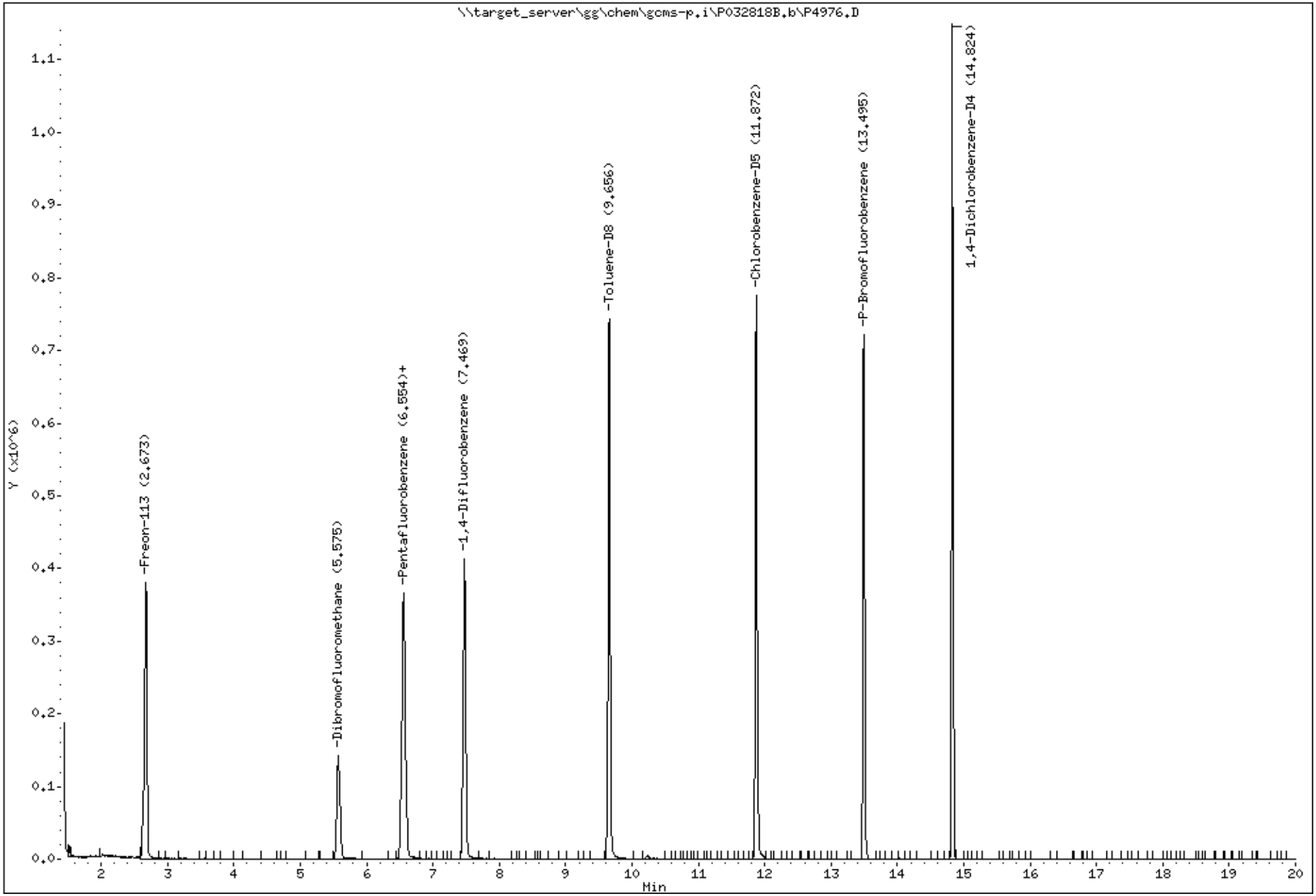
Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4976.D
Lab Smp Id: SL2295-19DL Client Smp ID: HAAP-21C-UGIA-DPT17
Inj Date : 28-MAR-2018 15:37 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-19DL
Misc Info : WG225530,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 29-Mar-2018 07:09 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 12
Dil Factor: 4.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	4.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9 Freon-113	151	2.672	2.659	(0.408)	114044	65.4522	262	
$ 34 Dibromofluoromethane	113	5.574	5.561	(0.852)	145448	57.1204	57.1	
* 41 Pentafluorobenzene	168	6.547	6.541	(1.000)	262158	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.568	6.569	(1.003)	212018	58.9215	58.9	
* 48 1,4-Difluorobenzene	114	7.469	7.470	(1.000)	485113	50.0000		
$ 58 Toluene-D8	98	9.656	9.650	(1.293)	601176	50.2390	50.2	
* 68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	495878	50.0000		
$ 78 P-Bromofluorobenzene	95	13.494	13.496	(1.807)	239421	50.5470	50.5	
* 94 1,4-Dichlorobenzene-D4	152	14.831	14.832	(1.000)	278429	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4976.D
Date : 28-MAR-2018 15:37
Client ID: HAAP-21C-UGIA-DPT17 Instrument: gcms-p.i
Sample Info: SL2295-19DL



Katahdin Analytical Services 1000174

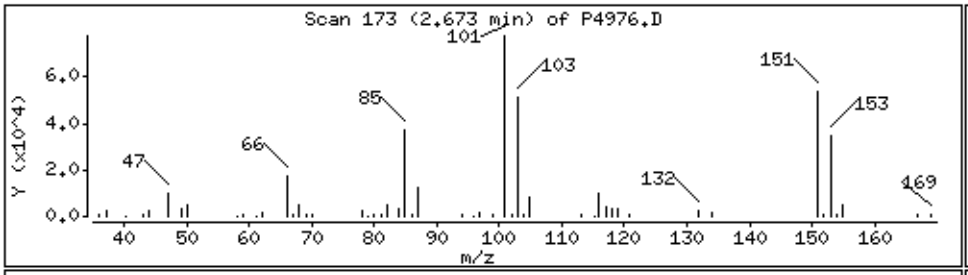
Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4976.D

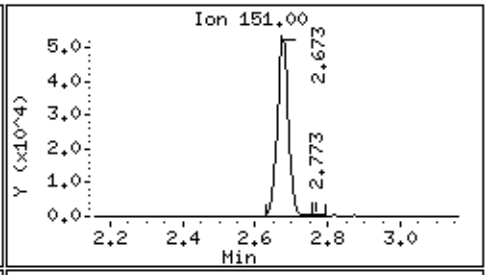
Date : 28-MAR-2018 15:37

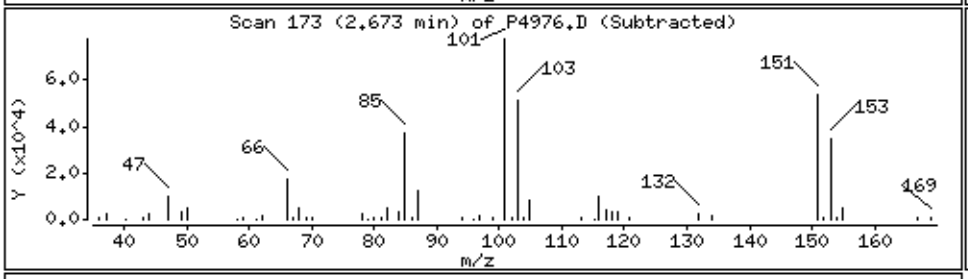
Client ID: HAAP-21C-UGIA-DPT17 Instrument: gcms-p.i

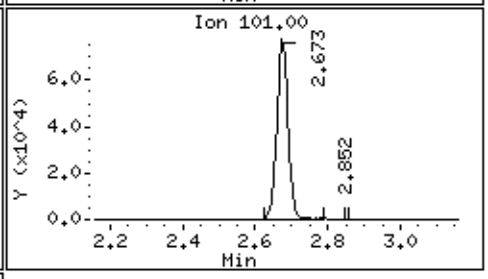
Sample Info: SL2295-19DL

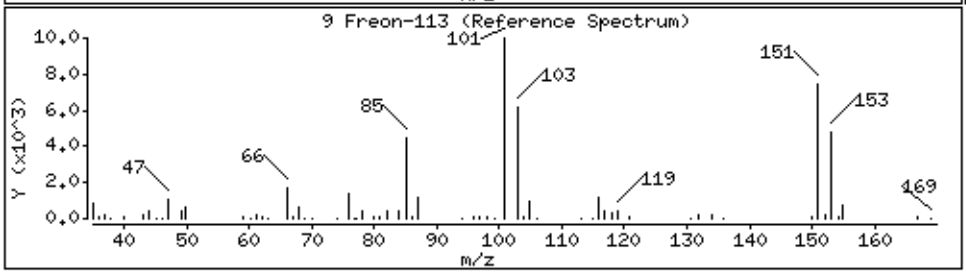
9 Freon-113 Concentration: 262 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4941.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	E	200	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4941.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		115.	%					
1,2-Dichloroethane-d4		118.	%					
Toluene-d8		101.	%					
P-Bromofluorobenzene		93.7	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4941.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4941.D
Lab Smp Id: SL2295-20 Client Smp ID: HAAP-21C-UGIA-DPT19
Inj Date : 27-MAR-2018 17:08 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-20
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

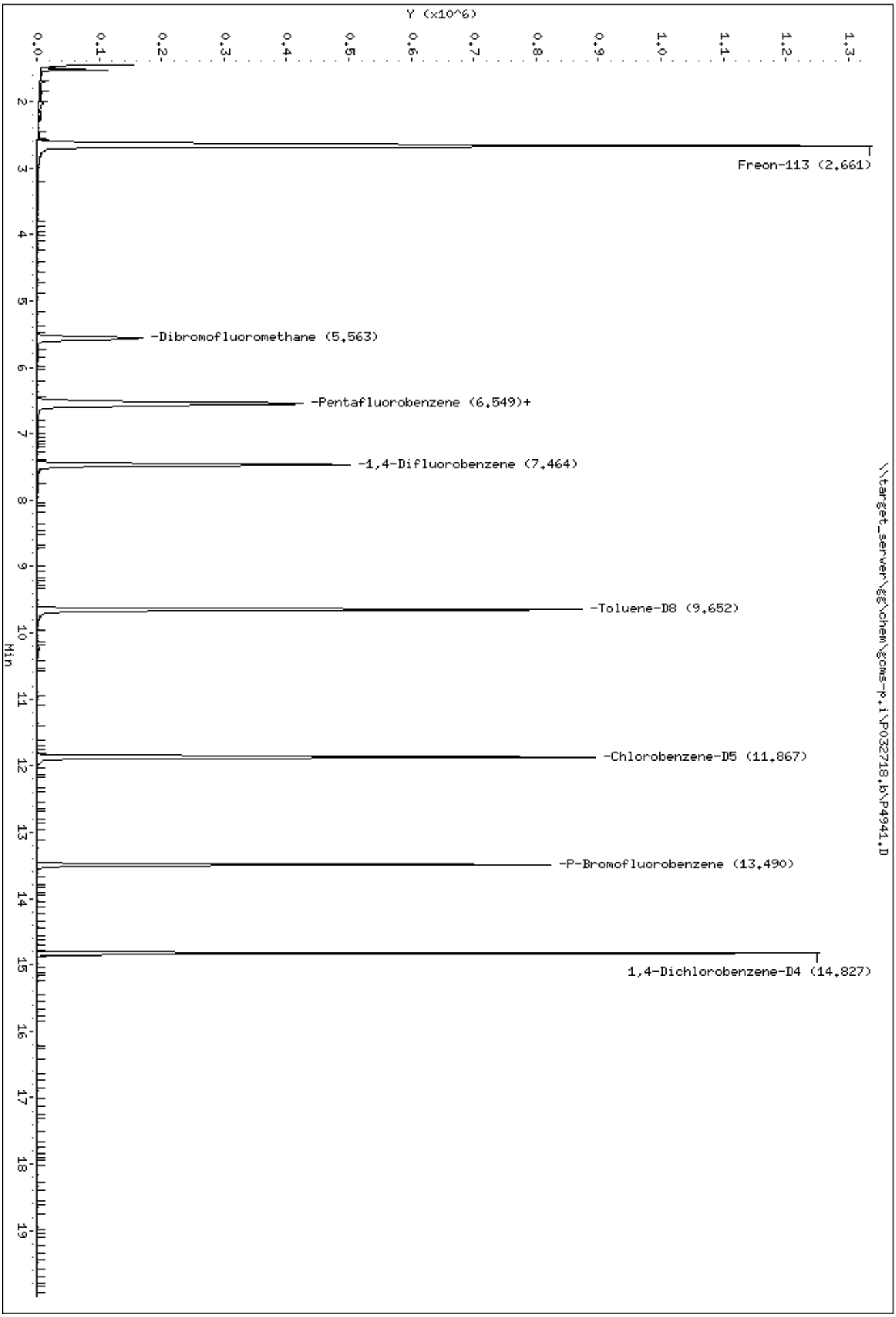
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9 Freon-113	151	2.660	2.659	(0.407)	413115	198.913	199(A)	
$ 34 Dibromofluoromethane	113	5.562	5.561	(0.851)	174989	57.6547	57.6	
* 41 Pentafluorobenzene	168	6.535	6.541	(1.000)	312480	50.0000		
$ 42 1,2-Dichloroethane-D4	65	6.556	6.569	(1.003)	252843	58.9512	59.0	
* 48 1,4-Difluorobenzene	114	7.464	7.470	(1.000)	574220	50.0000		
$ 58 Toluene-D8	98	9.651	9.650	(1.293)	713522	50.3746	50.4	
* 68 Chlorobenzene-D5	117	11.867	11.873	(1.000)	557709	50.0000		
$ 78 P-Bromofluorobenzene	95	13.490	13.496	(1.807)	262633	46.8432	46.8	
* 94 1,4-Dichlorobenzene-D4	152	14.826	14.832	(1.000)	285183	50.0000		

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.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Date : 27-MAR-2018 17:08
Client ID: HAAP-21C-UGIA-DPT19
Sample Info: SL2295-20
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032718.b\P4941.D
Y (x10^6)
Min
Freon-113 (2.661)
-Dibromofluoromethane (5.563)
-Pentafluorobenzene (6.549)+
-1,4-Difluorobenzene (7.464)
-Toluene-D8 (9.652)
-Chlorobenzene-D5 (11.867)
-P-Bromofluorobenzene (13.490)
1,4-Dichlorobenzene-D4 (14.827)

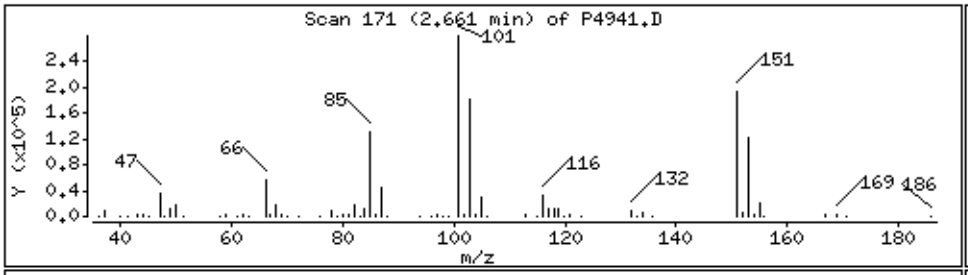
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4941.D

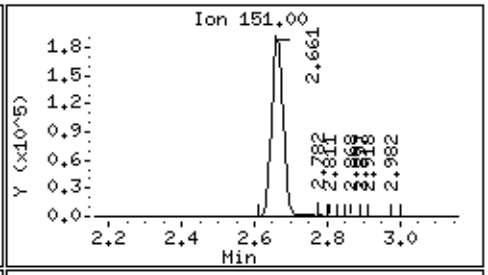
Date : 27-MAR-2018 17:08

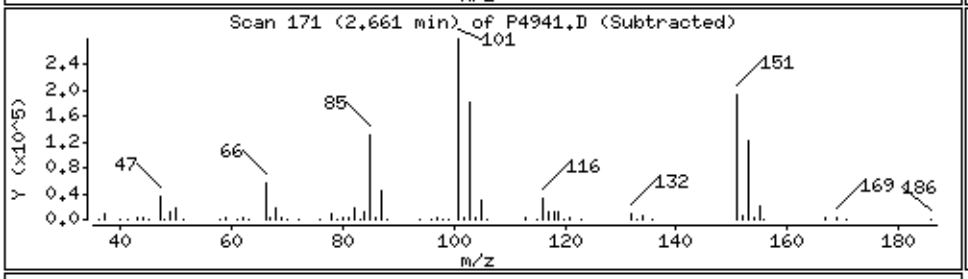
Client ID: HAAP-21C-UGIA-DPT19 Instrument: gcms-p.i

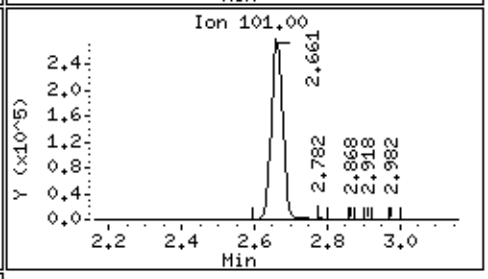
Sample Info: SL2295-20

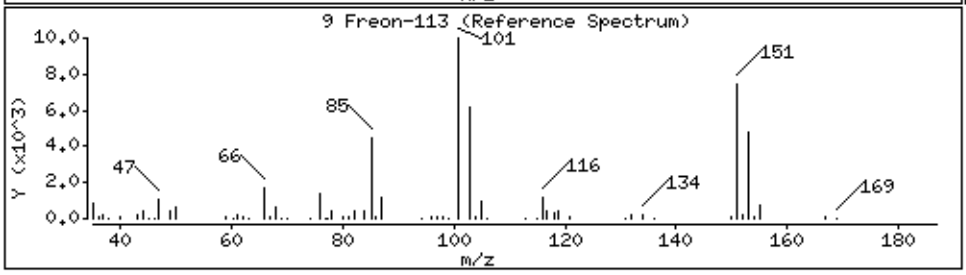
9 Freon-113 Concentration: 199 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20DL
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4977.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	2	1	2.0	0.38	1.0
1,1,1-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	2	1	2.0	0.76	1.0
Freon-113		140	ug/L	2	1	2.0	0.62	1.0
1,1,2-Trichloroethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
1,1-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.42	1.0
1,1-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.70	1.0
1,1-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.42	1.0
1,2,3-Trichlorobenzene	U	1.0	ug/L	2	1	2.0	0.54	1.0
1,2,3-Trichloropropane	U	1.0	ug/L	2	1	2.0	0.38	1.0
1,2,4-Trichlorobenzene	U	1.0	ug/L	2	1	2.0	0.74	1.0
1,2,4-Trimethylbenzene	U	1.0	ug/L	2	1	2.0	0.38	1.0
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	2	1	2.0	1.0	1.0
1,2-Dichlorobenzene	U	1.0	ug/L	2	1	2.0	0.30	1.0
1,2-Dichloroethane	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,2-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.50	1.0
1,3,5-Trimethylbenzene	U	1.0	ug/L	2	1	2.0	0.40	1.0
1,3-Dichlorobenzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
1,3-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.44	1.0
1,4-Dichlorobenzene	U	1.0	ug/L	2	1	2.0	0.48	1.0
2,2-Dichloropropane	U	1.0	ug/L	2	1	2.0	0.50	1.0
2-Butanone	U	5.0	ug/L	2	5	10.	2.6	5.0
2-Chlorotoluene	U	1.0	ug/L	2	1	2.0	0.40	1.0
2-Hexanone	U	5.0	ug/L	2	5	10.	3.4	5.0
4-Chlorotoluene	U	1.0	ug/L	2	1	2.0	0.52	1.0
P-Isopropyltoluene	U	1.0	ug/L	2	1	2.0	0.50	1.0
4-Methyl-2-Pentanone	U	5.0	ug/L	2	5	10.	2.6	5.0
Acetone	U	5.0	ug/L	2	5	10.	4.4	5.0
Benzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
Bromobenzene	U	1.0	ug/L	2	1	2.0	0.48	1.0
Bromoform	U	1.0	ug/L	2	1	2.0	0.46	1.0
Bromomethane	U	2.0	ug/L	2	2	4.0	0.98	2.0
Carbon Disulfide	U	1.0	ug/L	2	1	2.0	0.50	1.0
Carbon Tetrachloride	U	1.0	ug/L	2	1	2.0	0.44	1.0
Chlorobenzene	U	1.0	ug/L	2	1	2.0	0.44	1.0

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20DL
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4977.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	1.0	ug/L	2	1	2.0	0.42	1.0
Dibromochloromethane	U	1.0	ug/L	2	1	2.0	0.60	1.0
Chloroethane	U	2.0	ug/L	2	2	4.0	1.1	2.0
Chloroform	U	1.0	ug/L	2	1	2.0	0.64	1.0
Chloromethane	U	2.0	ug/L	2	2	4.0	0.72	2.0
cis-1,2-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.42	1.0
cis-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.38	1.0
Dibromomethane	U	1.0	ug/L	2	1	2.0	0.92	1.0
Bromodichloromethane	U	1.0	ug/L	2	1	2.0	0.66	1.0
Dichlorodifluoromethane	U	2.0	ug/L	2	2	4.0	0.48	2.0
Ethylbenzene	U	1.0	ug/L	2	1	2.0	0.42	1.0
1,2-Dibromoethane	U	1.0	ug/L	2	1	2.0	0.44	1.0
Hexachlorobutadiene	U	1.5	ug/L	2	1	2.0	1.0	1.5
Isopropylbenzene	U	1.0	ug/L	2	1	2.0	0.46	1.0
Methyl tert-butyl Ether	U	1.0	ug/L	2	1	2.0	0.72	1.0
Methylene Chloride	U	5.0	ug/L	2	5	10.	2.3	5.0
m+p-Xylenes	U	2.0	ug/L	2	2	4.0	1.2	2.0
Naphthalene	U	1.0	ug/L	2	1	2.0	0.60	1.0
N-Butylbenzene	U	1.0	ug/L	2	1	2.0	0.46	1.0
N-Propylbenzene	U	1.0	ug/L	2	1	2.0	0.52	1.0
o-Xylene	U	1.0	ug/L	2	1	2.0	0.50	1.0
sec-Butylbenzene	U	1.0	ug/L	2	1	2.0	0.42	1.0
Styrene	U	1.0	ug/L	2	1	2.0	0.46	1.0
tert-Butylbenzene	U	1.0	ug/L	2	1	2.0	0.62	1.0
Tetrachloroethene	U	1.0	ug/L	2	1	2.0	0.80	1.0
Toluene	U	1.0	ug/L	2	1	2.0	0.54	1.0
trans-1,2-Dichloroethene	U	1.0	ug/L	2	1	2.0	0.50	1.0
trans-1,3-Dichloropropene	U	1.0	ug/L	2	1	2.0	0.40	1.0
Trichloroethene	U	1.0	ug/L	2	1	2.0	0.56	1.0
Trichlorofluoromethane	U	2.0	ug/L	2	2	4.0	0.48	2.0
Vinyl Chloride	U	2.0	ug/L	2	2	4.0	0.50	2.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		100.	%					
P-Bromofluorobenzene		95.6	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4977.D
Report Date: 29-Mar-2018 11:08

Katahdin Analytical Services

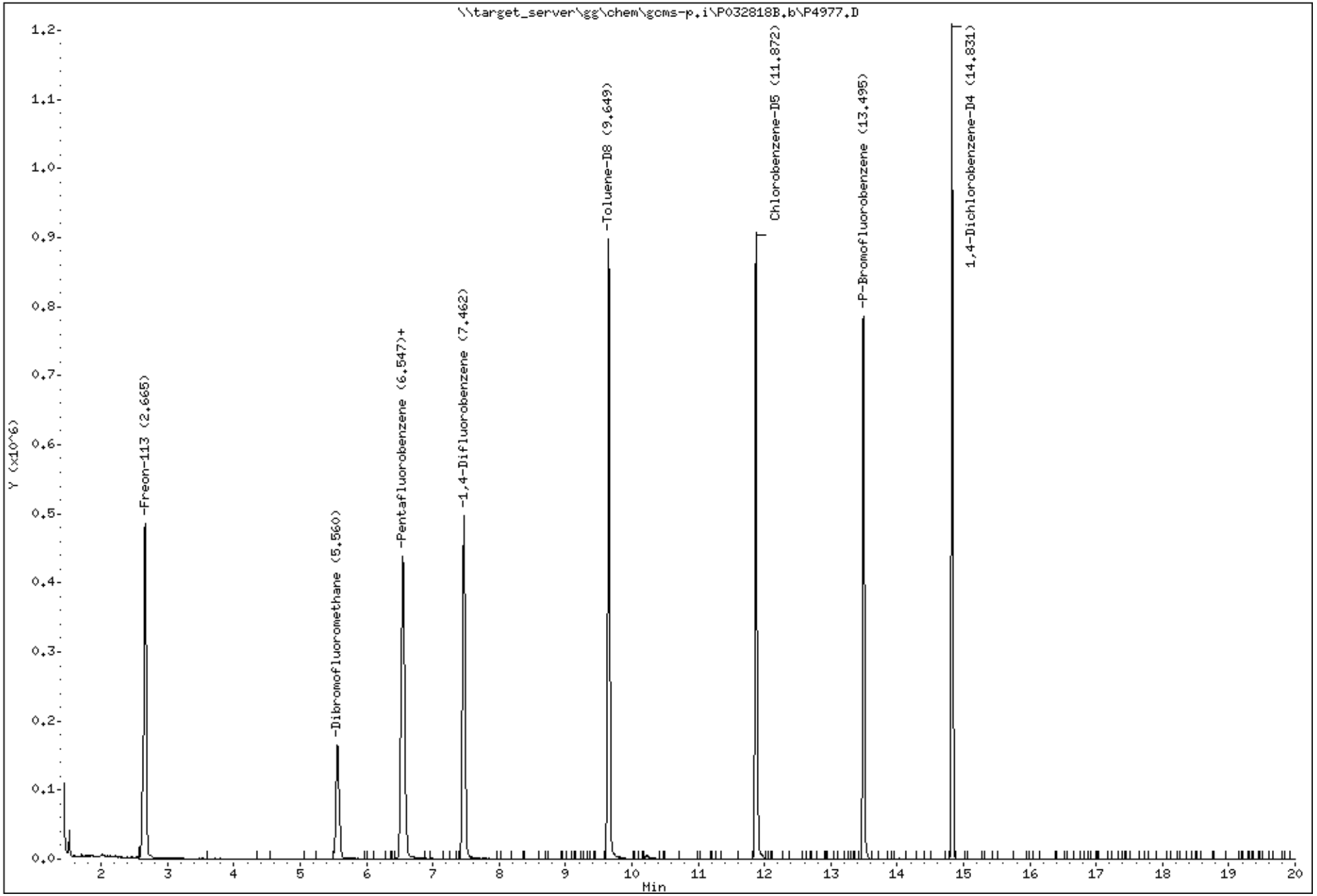
Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4977.D
Lab Smp Id: SL2295-20DL Client Smp ID: HAAP-21C-UGIA-DPT19
Inj Date : 28-MAR-2018 16:11 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-20DL
Misc Info : WG225530,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 29-Mar-2018 07:09 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 13
Dil Factor: 2.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	2.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.665	2.659	(0.408)	146985	69.9253	140	
$ 34	Dibromofluoromethane	113	5.567	5.561	(0.851)	170653	55.5528	55.6	
* 41	Pentafluorobenzene	168	6.539	6.541	(1.000)	316267	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.561	6.569	(1.003)	251605	57.9602	58.0	
* 48	1,4-Difluorobenzene	114	7.468	7.470	(1.000)	580677	50.0000		
$ 58	Toluene-D8	98	9.648	9.650	(1.292)	716677	50.0347	50.0	
* 68	Chlorobenzene-D5	117	11.871	11.873	(1.000)	572992	50.0000		
$ 78	P-Bromofluorobenzene	95	13.494	13.496	(1.807)	271024	47.8023	47.8	
* 94	1,4-Dichlorobenzene-D4	152	14.831	14.832	(1.000)	293649	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4977.D
Date : 28-MAR-2018 16:11
Client ID: HAAP-21C-UGIA-DPT19 Instrument: gcms-p.i
Sample Info: SL2295-20DL



Katahdin Analytical Services 1000184

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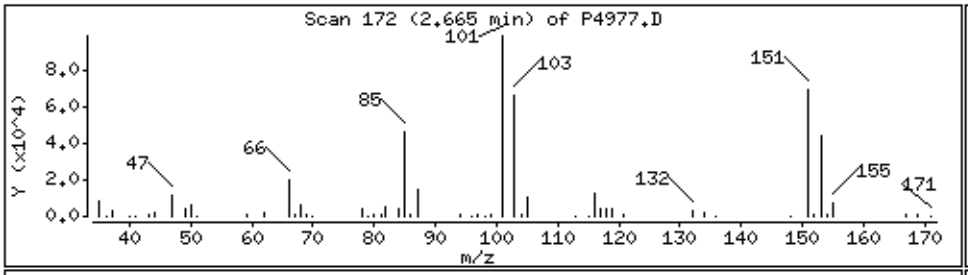
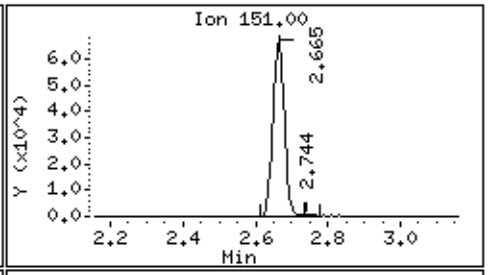
Date : 28-MAR-2018 16:11

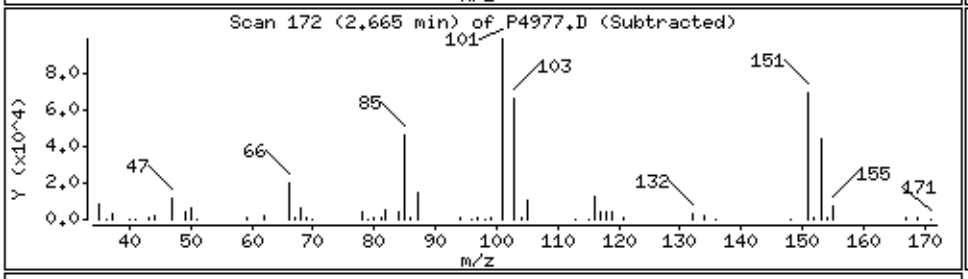
Client ID: HAAP-21C-UGIA-DPT19 Instrument: gcms-p.i

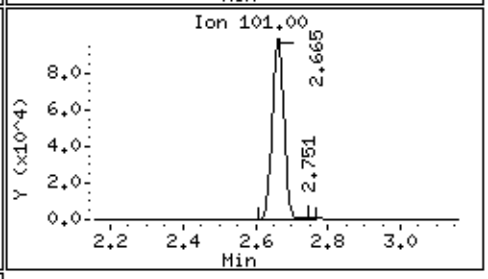
Sample Info: SL2295-20DL

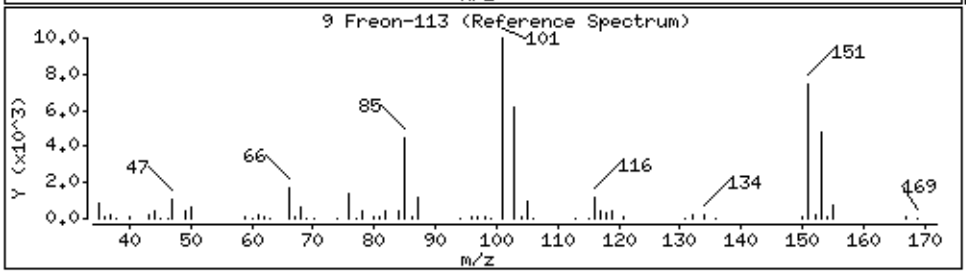
9 Freon-113 Concentration: 140 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-21
Client ID: CHAAP-21C-TB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4932.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	J	4.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-21
Client ID: CHAAP-21C-TB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4932.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4		111.	%					
Toluene-d8		99.9	%					
P-Bromofluorobenzene		94.1	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4932.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4932.D
Lab Smp Id: SL2295-21 Client Smp ID: CHAAP-21C-TB-031718
Inj Date : 27-MAR-2018 12:01 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-21
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

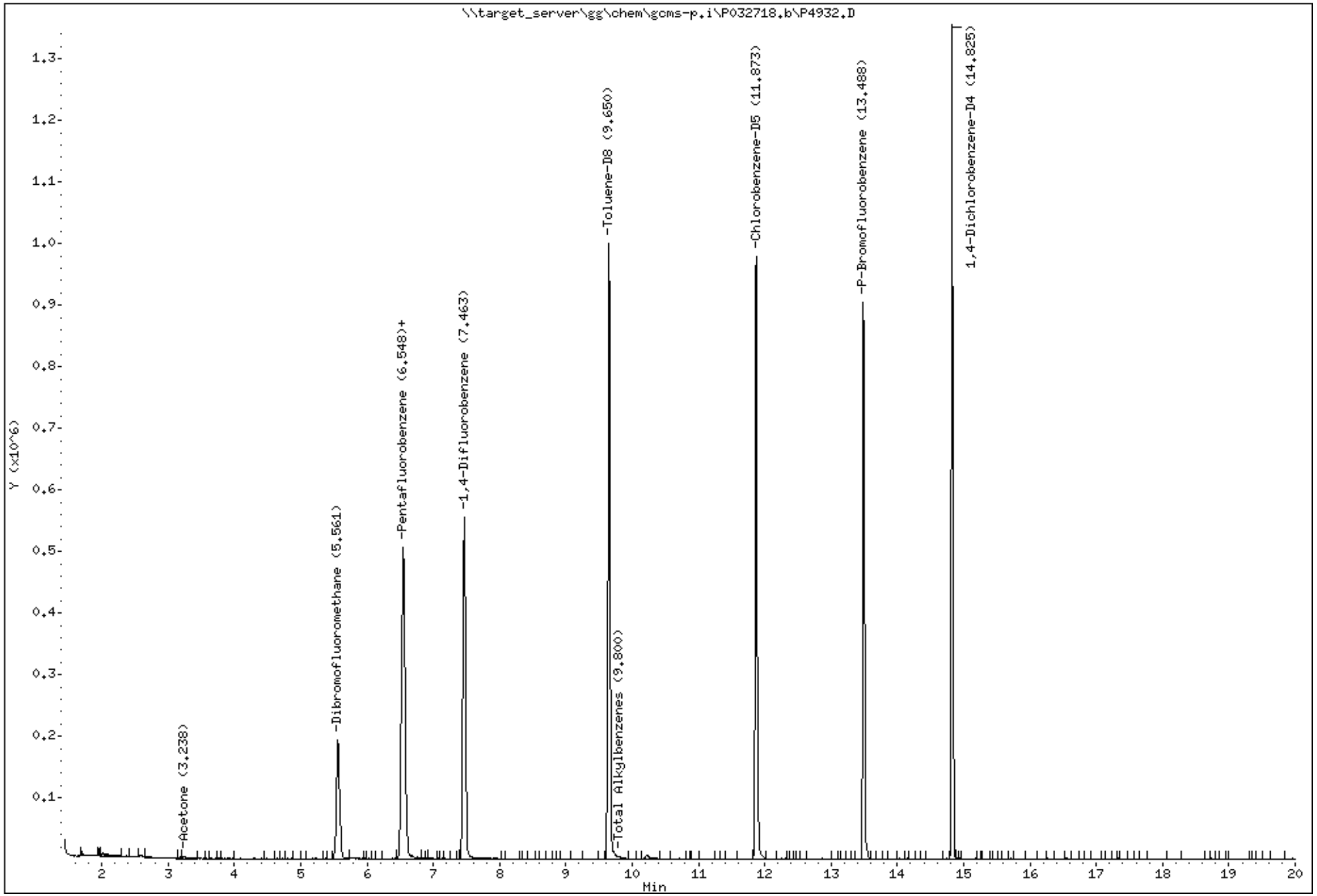
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	15 Acetone	43	3.238	3.238	(0.495)	4791	4.47973	4.5(a)	
$	34 Dibromofluoromethane	113	5.561	5.561	(0.850)	200211	55.1911	55.2	
*	41 Pentafluorobenzene	168	6.540	6.541	(1.000)	373478	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.561	6.569	(1.003)	283674	55.3374	55.3	
*	48 1,4-Difluorobenzene	114	7.469	7.470	(1.000)	664161	50.0000		
$	58 Toluene-D8	98	9.649	9.650	(1.292)	818077	49.9348	49.9	
*	68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	646521	50.0000		
$	78 P-Bromofluorobenzene	95	13.488	13.496	(1.806)	305142	47.0549	47.0	
*	94 1,4-Dichlorobenzene-D4	152	14.825	14.832	(1.000)	327180	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4932.D
Date : 27-MAR-2018 12:01
Client ID: CHAAP-21C-TB-031718
Instrument: gcms-p.i
Sample Info: SL2295-21



Katahdin Analytical Services 1000189

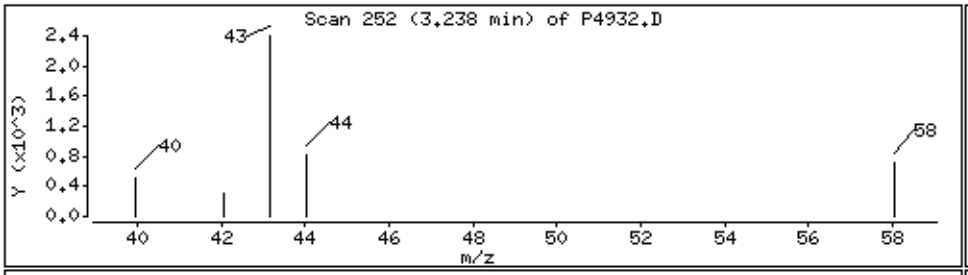
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4932.D

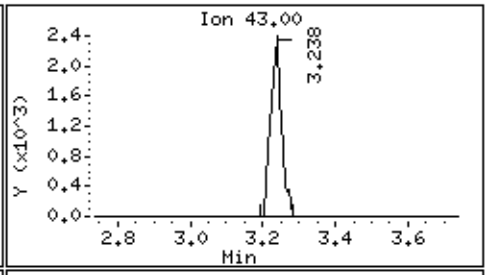
Date : 27-MAR-2018 12:01

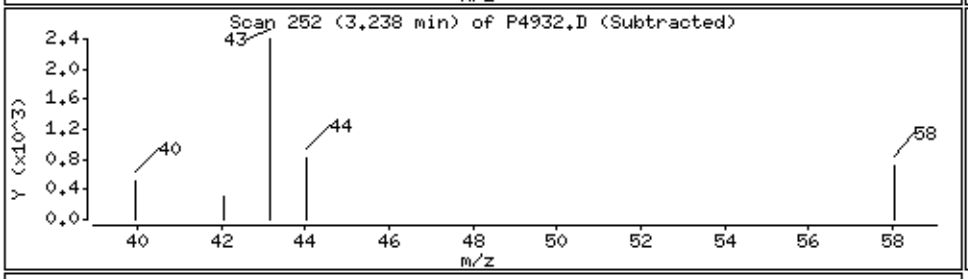
Client ID: CHAAP-21C-TB-031718 Instrument: gcms-p.i

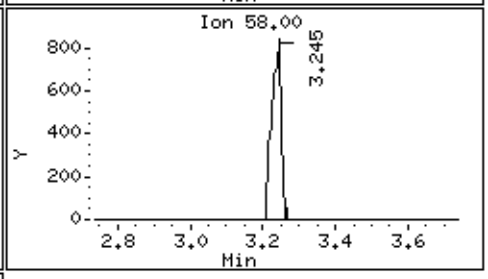
Sample Info: SL2295-21

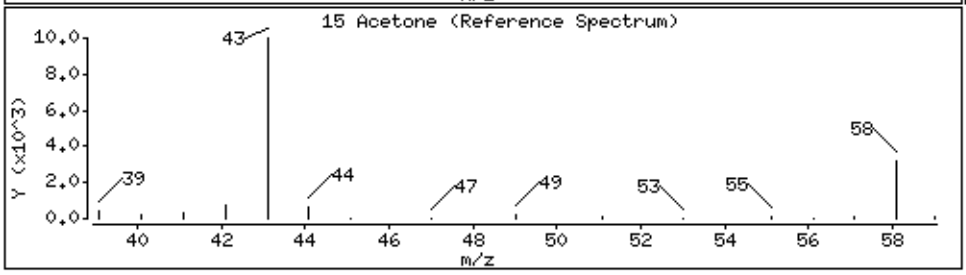
15 Acetone Concentration: 4.5 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-22
Client ID: CHAAP-21C-LGIA-DPT106
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4942.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	J	0.81	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-22
Client ID: CHAAP-21C-LGIA-DPT106
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4942.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		116.	%					
Toluene-d8		99.4	%					
P-Bromofluorobenzene		93.7	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4942.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4942.D
Lab Smp Id: SL2295-22 Client Smp ID: HAAP-21C-LGIA-DPT10
Inj Date : 27-MAR-2018 17:42 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-22
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

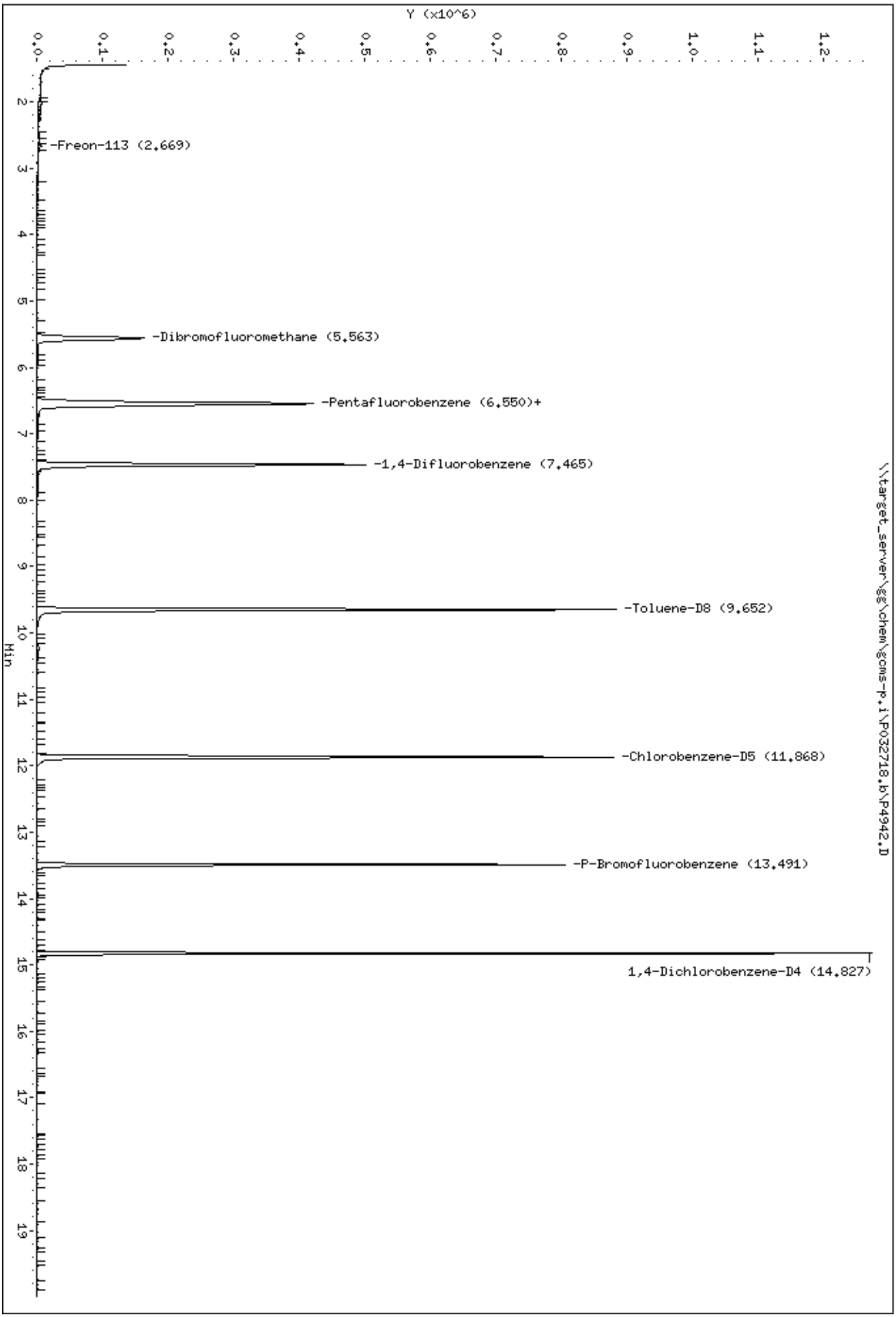
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.668	2.659	(0.408)	1681	0.81354	0.81(a)	
$ 34	Dibromofluoromethane	113	5.563	5.561	(0.850)	170672	56.5201	56.5	
* 41	Pentafluorobenzene	168	6.542	6.541	(1.000)	310889	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.557	6.569	(1.002)	247765	58.0629	58.1	
* 48	1,4-Difluorobenzene	114	7.464	7.470	(1.000)	569032	50.0000		
$ 58	Toluene-D8	98	9.652	9.650	(1.293)	698010	49.7288	49.7	
* 68	Chlorobenzene-D5	117	11.868	11.873	(1.000)	563678	50.0000		
$ 78	P-Bromofluorobenzene	95	13.490	13.496	(1.807)	260320	46.8540	46.8	
* 94	1,4-Dichlorobenzene-D4	152	14.827	14.832	(1.000)	288088	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Date : 27-MAR-2018 17:42
Client ID: MAAP-21C-LCIA-DPT10
Sample Info: SL2295-22
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032718.b\P4942.D
Y (x10^6)
Min
-Freon-113 (2.669)
-Dibromofluoromethane (5.563)
-Pentafluorobenzene (6.550)+
-1,4-Difluorobenzene (7.465)
-Toluene-D8 (9.652)
-Chlorobenzene-D5 (11.868)
-P-Bromofluorobenzene (13.491)
1,4-Dichlorobenzene-D4 (14.827)

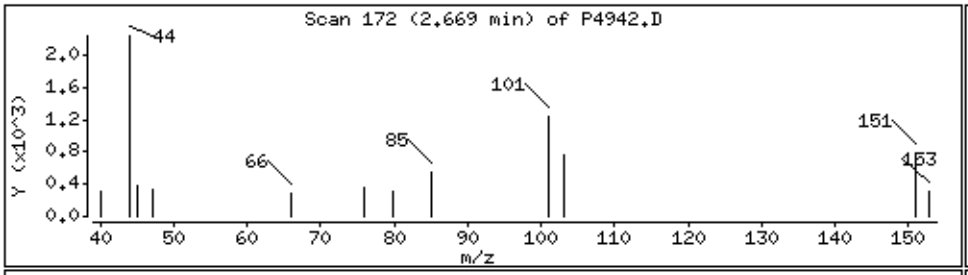
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4942.D

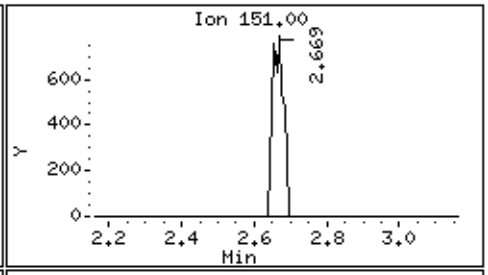
Date : 27-MAR-2018 17:42

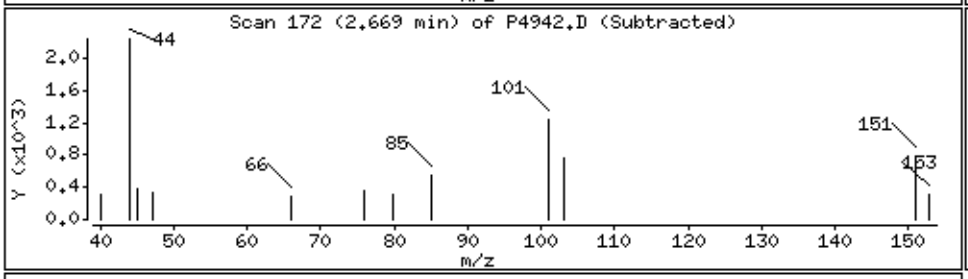
Client ID: HAAP-21C-LGIA-DPT10 Instrument: gcms-p.i

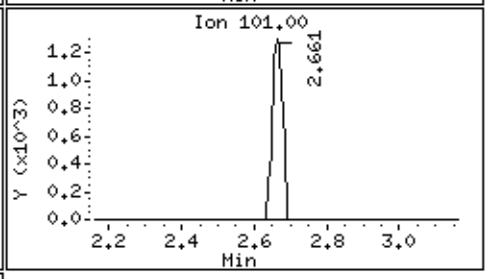
Sample Info: SL2295-22

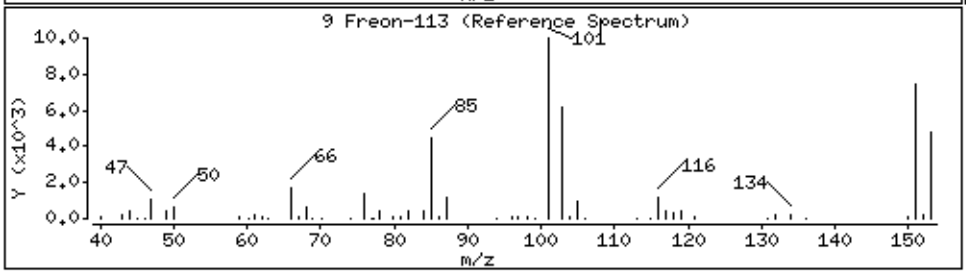
9 Freon-113 Concentration: 0.81 ug/l











Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-23
Client ID: CHAAP-21C-EB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4933.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		13	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-23
Client ID: CHAAP-21C-EB-031718
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4933.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		98.6	%					
P-Bromofluorobenzene		92.7	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4933.D
Report Date: 28-Mar-2018 09:37

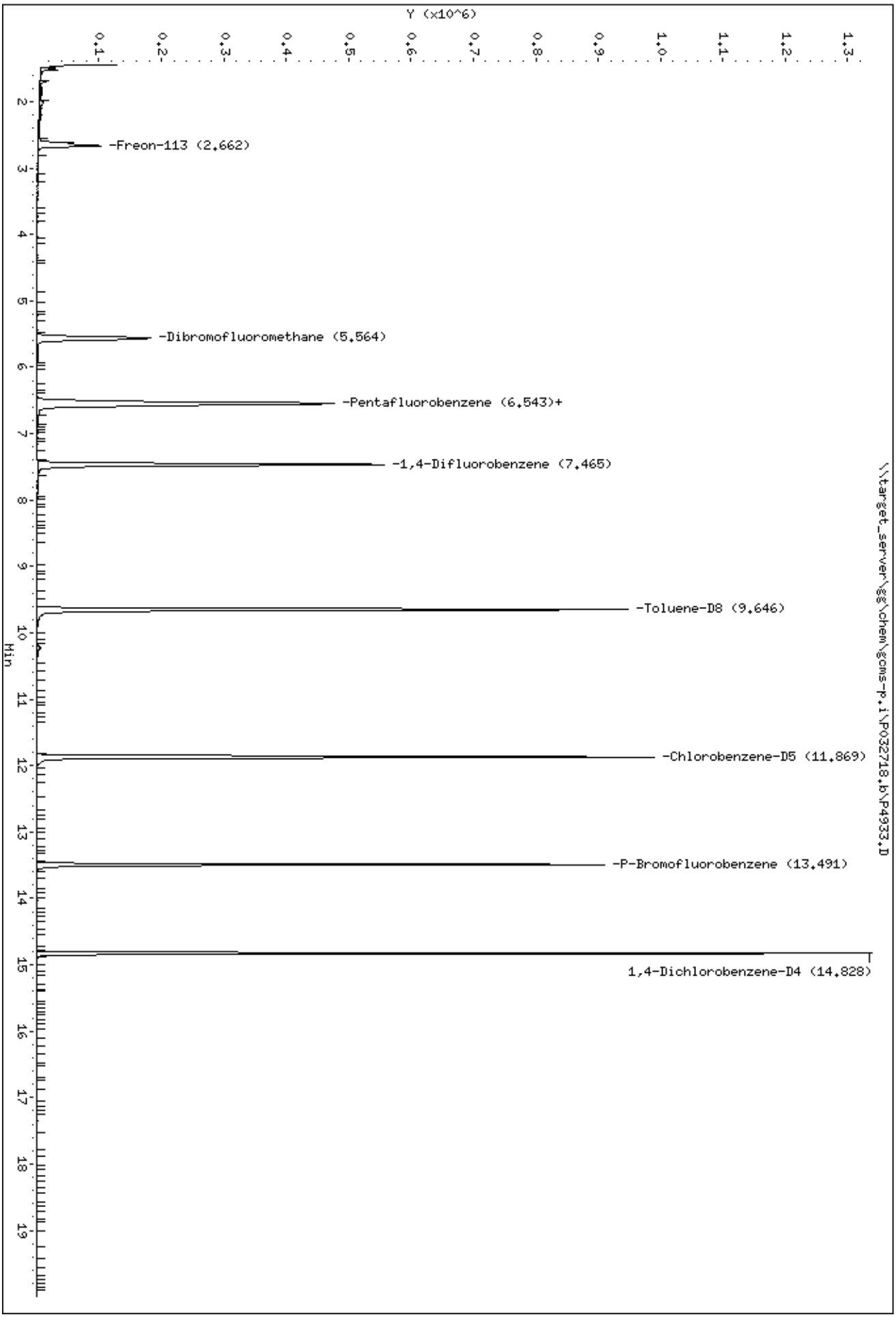
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4933.D
Lab Smp Id: SL2295-23 Client Smp ID: CHAAP-21C-EB-031718
Inj Date : 27-MAR-2018 12:35 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-23
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
9	Freon-113	151	2.669	2.659	(0.408)	30783	13.0665	13.1	
$ 34	Dibromofluoromethane	113	5.564	5.561	(0.851)	189530	55.0501	55.0	
* 41	Pentafluorobenzene	168	6.536	6.541	(1.000)	354459	50.0000		
$ 42	1,2-Dichloroethane-D4	65	6.557	6.569	(1.003)	277288	56.9940	57.0	
* 48	1,4-Difluorobenzene	114	7.465	7.470	(1.000)	647312	50.0000		
$ 58	Toluene-D8	98	9.652	9.650	(1.293)	787052	49.2915	49.3	
* 68	Chlorobenzene-D5	117	11.868	11.873	(1.000)	619213	50.0000		
$ 78	P-Bromofluorobenzene	95	13.491	13.496	(1.807)	292919	46.3457	46.3	
* 94	1,4-Dichlorobenzene-D4	152	14.827	14.832	(1.000)	321108	50.0000		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Date : 27-MAR-2018 12:35
Client ID: CHAAP-21C-EB-031718
Sample Info: SL2295-23
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032718.b\P4933.D
Y (x10^6)
Min
-Freon-113 (2.662)
-Dibromofluoromethane (5.564)
-Pentafluorobenzene (6.543)+
-1,4-Difluorobenzene (7.465)
-Toluene-D8 (9.646)
-Chlorobenzene-D5 (11.869)
-P-Bromofluorobenzene (13.491)
1,4-Dichlorobenzene-D4 (14.828)

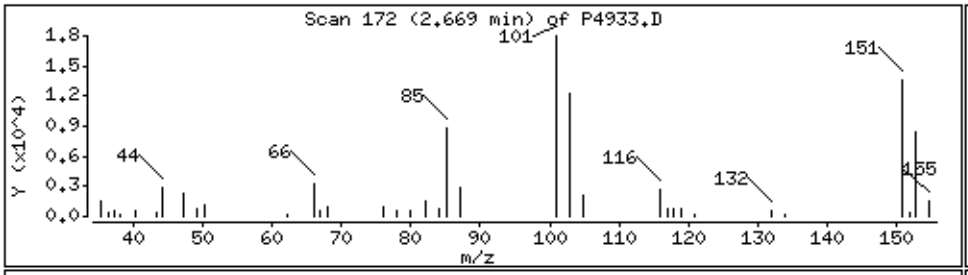
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4933.D

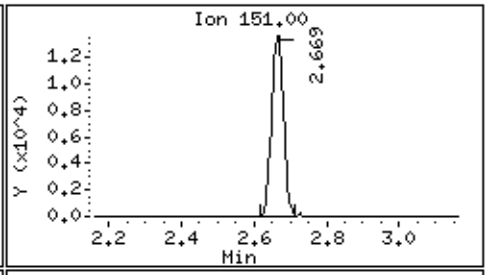
Date : 27-MAR-2018 12:35

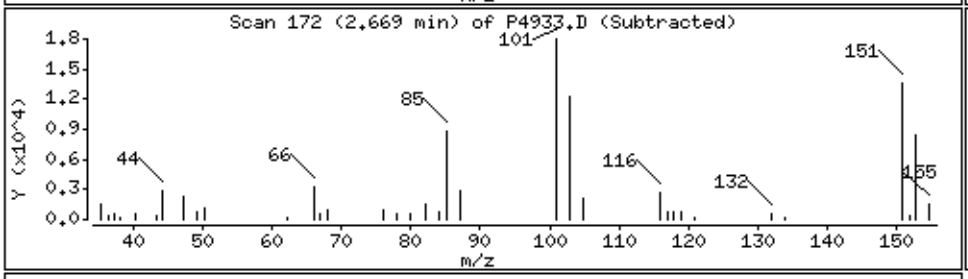
Client ID: CHAAP-21C-EB-031718 Instrument: gcms-p.i

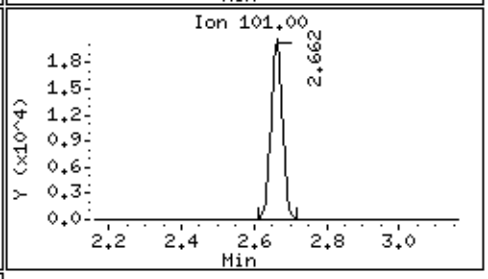
Sample Info: SL2295-23

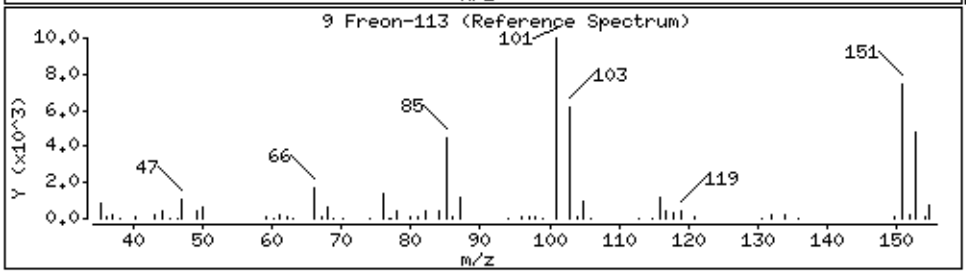
9 Freon-113 Concentration: 13.1 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-24RA
Client ID: CHAAP-21C-UGIA-DPT109
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4974.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113		30	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-24RA
Client ID: CHAAP-21C-UGIA-DPT109
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4974.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4		114.	%					
Toluene-d8		98.9	%					
P-Bromofluorobenzene		92.5	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4974.D
Report Date: 04-Apr-2018 05:26

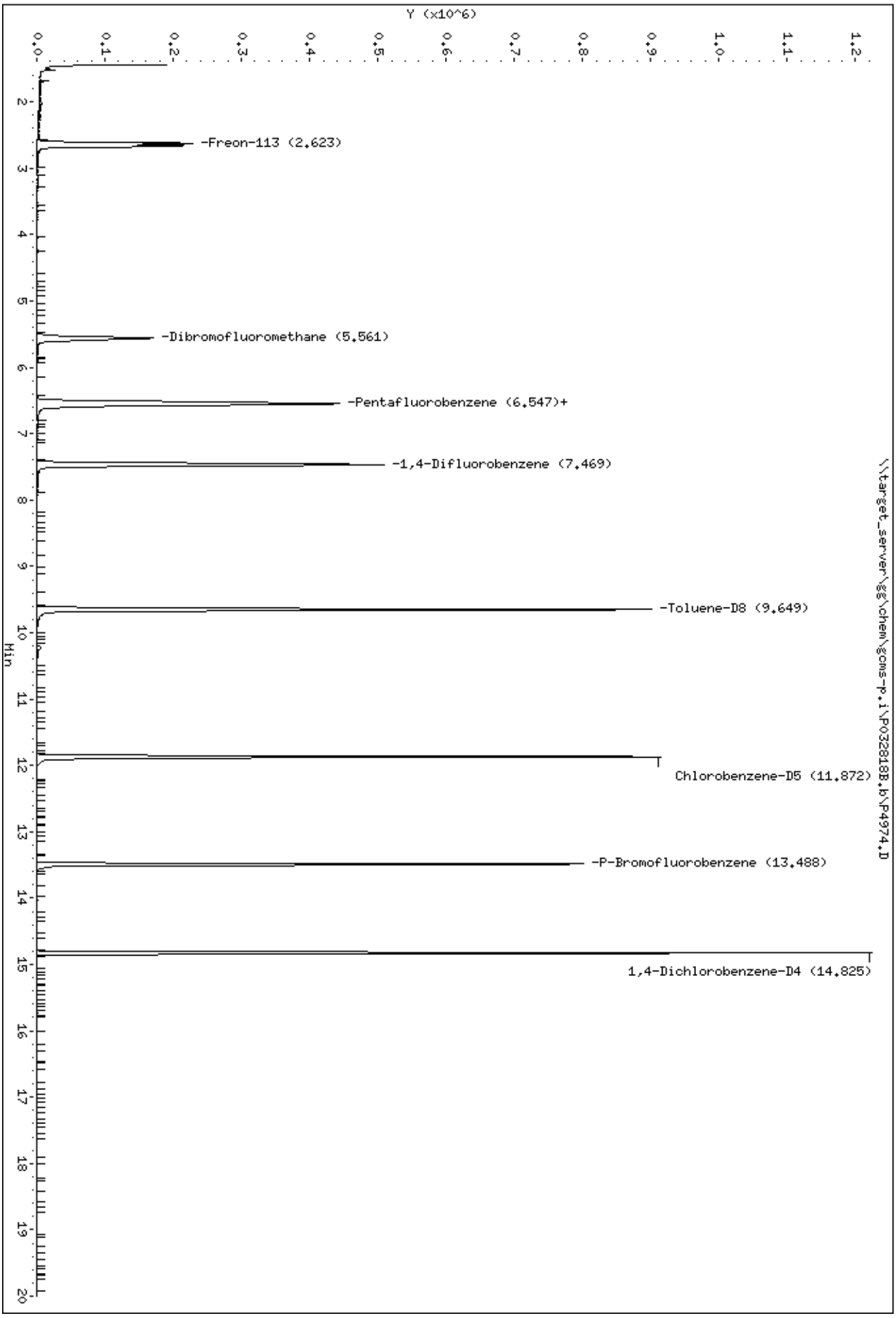
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4974.D
Lab Smp Id: SL2295-24RA Client Smp ID: HAAP-21C-UGIA-DPT10
Inj Date : 28-MAR-2018 14:29 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-24RA
Misc Info : WG225530,WG225349-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 04-Apr-2018 05:23 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	9 Freon-113	151	2.665	2.659	(0.408)	65179	30.3110	30.3	
$	34 Dibromofluoromethane	113	5.560	5.561	(0.850)	174004	55.3711	55.4	
*	41 Pentafluorobenzene	168	6.540	6.541	(1.000)	323536	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.561	6.569	(1.003)	253908	57.1765	57.2	
*	48 1,4-Difluorobenzene	114	7.469	7.470	(1.000)	592511	50.0000		
$	58 Toluene-D8	98	9.649	9.650	(1.292)	723088	49.4740	49.5	
*	68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	579537	50.0000		
$	78 P-Bromofluorobenzene	95	13.487	13.496	(1.806)	267654	46.2651	46.3	
*	94 1,4-Dichlorobenzene-D4	152	14.824	14.832	(1.000)	297778	50.0000		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Date : 28-MAR-2018 14:29
Client ID: HAAP-21C-UGIA-DPT10
Sample Info: SL2295-24RA
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032818B.b\P4974.D
Y (x10^6)
Min
-Freon-113 (2.623)
-Dibromofluoromethane (5.561)
-Pentafluorobenzene (6.547)+
-1,4-Difluorobenzene (7.469)
-Toluene-D8 (9.649)
Chlorobenzene-D5 (11.872)
-P-Bromofluorobenzene (13.488)
1,4-Dichlorobenzene-D4 (14.825)

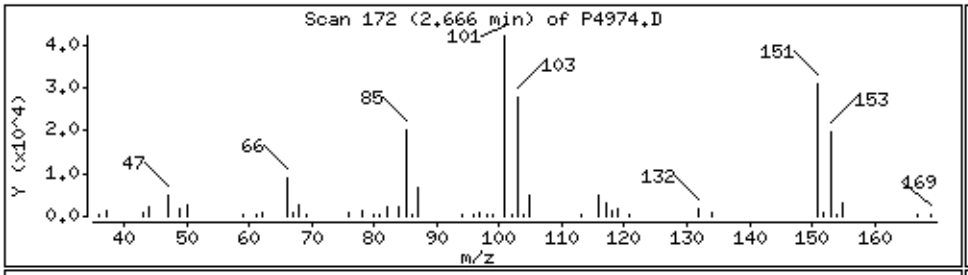
Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4974.D

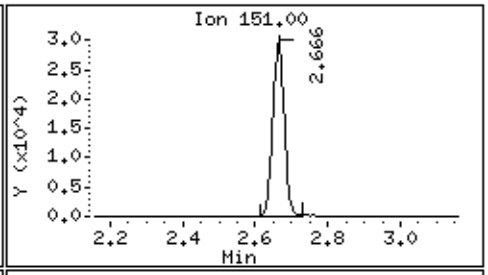
Date : 28-MAR-2018 14:29

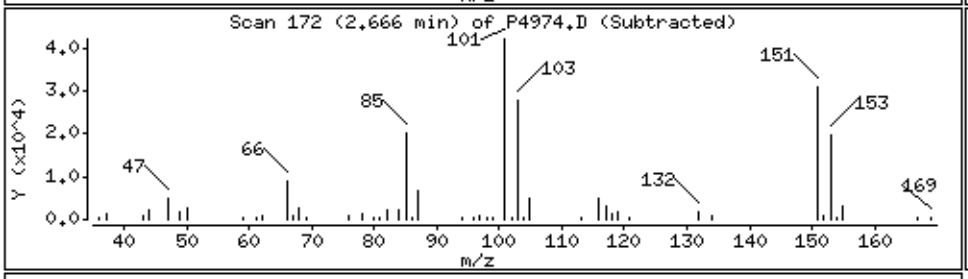
Client ID: HAAP-21C-UGIA-DPT10 Instrument: gcms-p.i

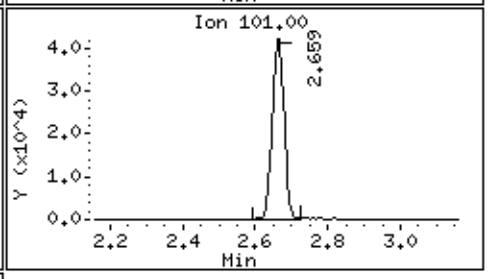
Sample Info: SL2295-24RA

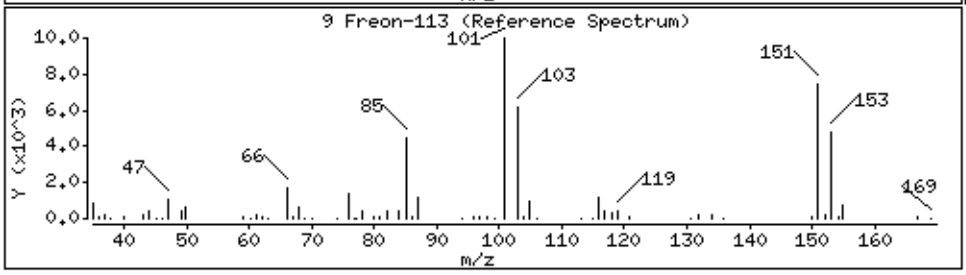
9 Freon-113 Concentration: 30.3 ug/l











Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-25
Client ID: CHAAP-21C-EB-031818
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4934.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone		12	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50

600 Technology Way
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Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-25
Client ID: CHAAP-21C-EB-031818
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: P4934.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		115.	%					
Toluene-d8		99.7	%					
P-Bromofluorobenzene		93.5	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4934.D
Report Date: 28-Mar-2018 09:37

Katahdin Analytical Services

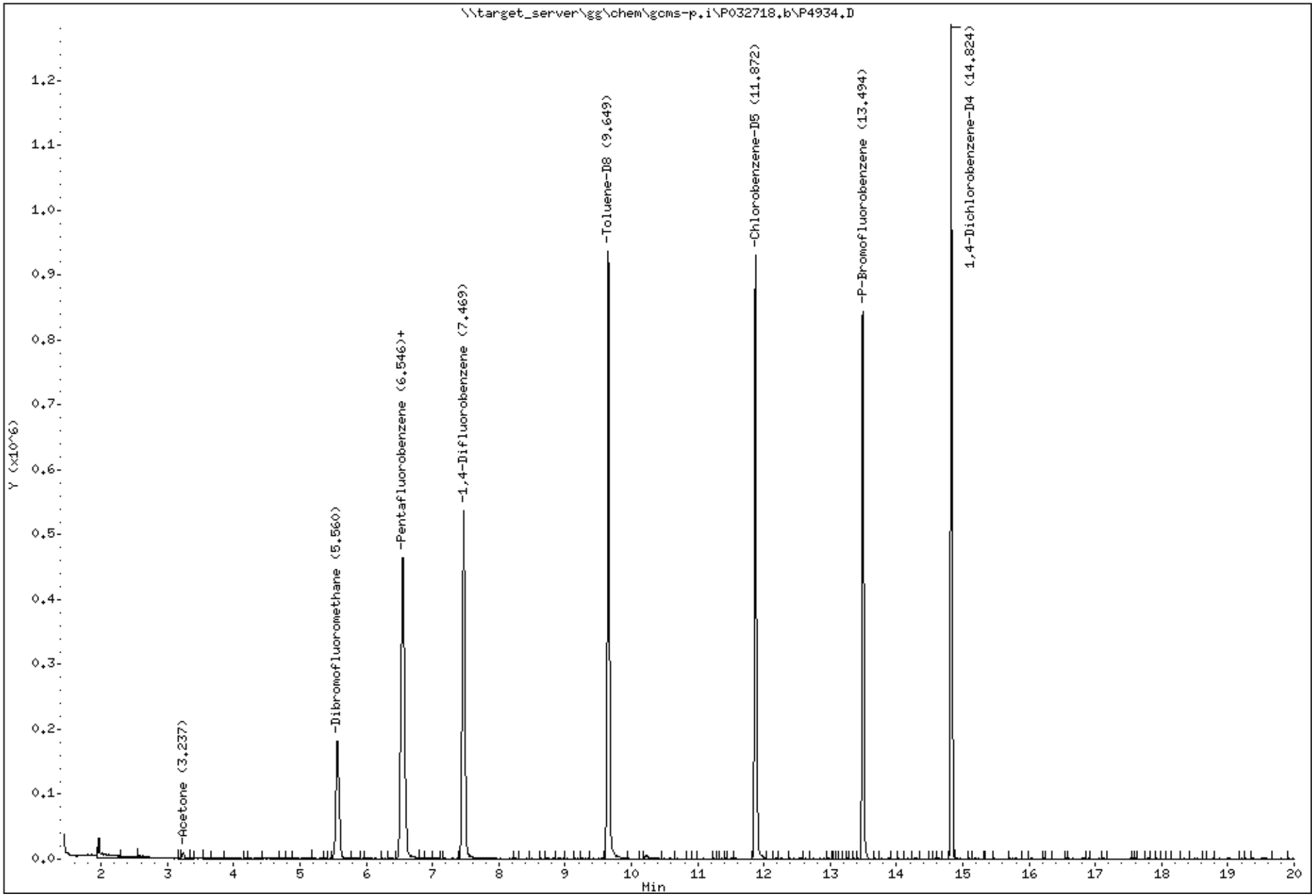
Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4934.D
Lab Smp Id: SL2295-25 Client Smp ID: CHAAP-21C-EB-031818
Inj Date : 27-MAR-2018 13:09 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : SL2295-25
Misc Info : WG225461,WG225349-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	15 Acetone	43	3.236	3.238	(0.495)	11984	12.2267	12.2	
$	34 Dibromofluoromethane	113	5.560	5.561	(0.850)	188235	56.6189	56.6	
*	41 Pentafluorobenzene	168	6.539	6.541	(1.000)	342283	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.567	6.569	(1.004)	269521	57.3682	57.4	
*	48 1,4-Difluorobenzene	114	7.468	7.470	(1.000)	624169	50.0000		
$	58 Toluene-D8	98	9.648	9.650	(1.292)	767229	49.8317	49.8	
*	68 Chlorobenzene-D5	117	11.871	11.873	(1.000)	604188	50.0000		
$	78 P-Bromofluorobenzene	95	13.487	13.496	(1.806)	284965	46.7590	46.8	
*	94 1,4-Dichlorobenzene-D4	152	14.823	14.832	(1.000)	311239	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4934.D
Date : 27-MAR-2018 13:09
Client ID: CHAAP-21C-EB-031818 Instrument: gcms-p.i
Sample Info: SL2295-25



Katahdin Analytical Services 1000209

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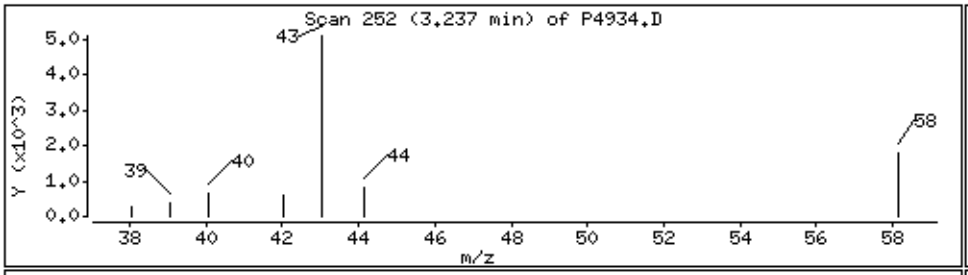
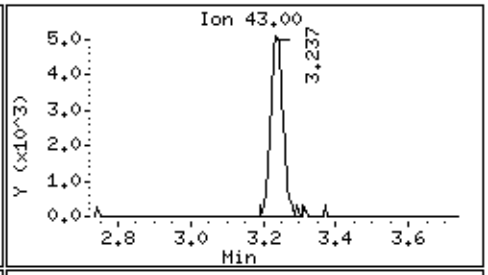
Date : 27-MAR-2018 13:09

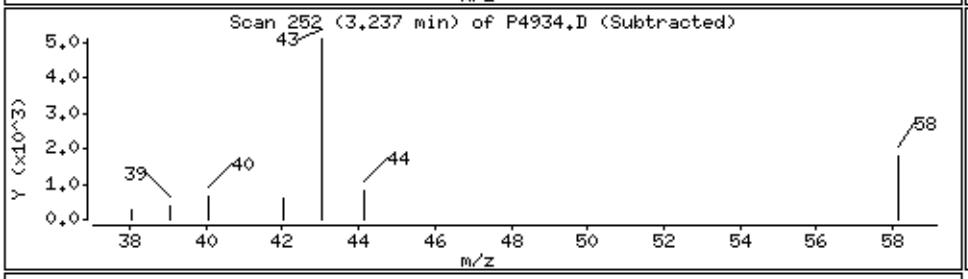
Client ID: CHAAP-21C-EB-031818 Instrument: gcms-p.i

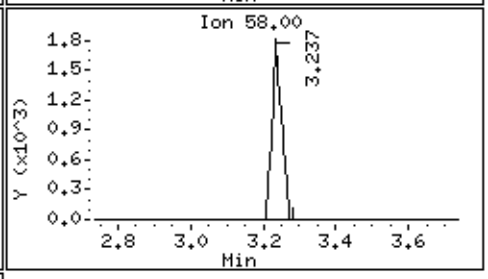
Sample Info: SL2295-25

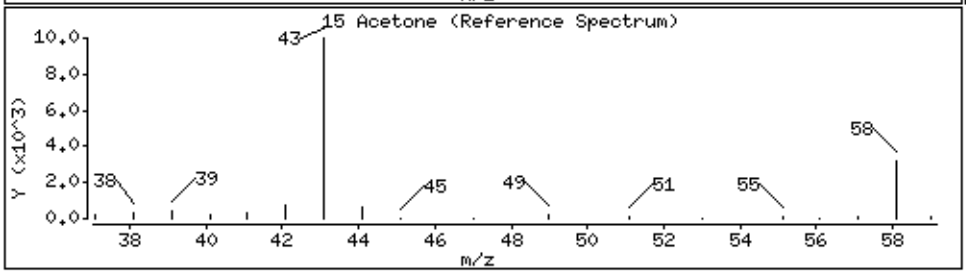
15 Acetone Concentration: 12.2 ug/l











Standards Data Section

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2295
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P4809.D P4808.D P4807.D P4806.D P4811.D P4810.D
Column ID:
Calibration Date(s): 19-MAR-18 16:00 19-MAR-18 18:51

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	1.0000	5.0000	20.0000	50.0000	100.0000	150.0000	New	b	m1	m2	%RSD	%RSD	
Dichlorodifluoromethane	0.39326	0.39750	0.44648	0.41815	0.40532	0.40170	AVG		0.41040		4.77953	15.00000	O
Chloromethane	0.63263	0.59022	0.59482	0.57054	0.56254	0.56069	AVG		0.58524		4.64578	15.00000	O
Vinyl chloride	0.61848	0.61810	0.62897	0.62243	0.59506	0.59924	AVG		0.61371		2.19532	15.00000	O
Bromomethane	0.31515	0.29147	0.25952	0.23756	0.26584	0.26279	AVG		0.27205		10.00749	15.00000	O
Chloroethane	0.43041	0.38739	0.40842	0.39496	0.34743	0.38482	AVG		0.39224		7.04026	15.00000	O
Trichlorofluoromethane	0.85868	0.80317	0.87209	0.85673	0.80880	0.84944	AVG		0.84149		3.38813	15.00000	O
1,1-Dichloroethene	0.29383	0.40410	0.38288	0.41217	0.38374	0.40667	AVG		0.38056		11.61673	15.00000	O
Freon-113	0.28592	0.27520	0.27511	0.29442	0.27998	0.29200	AVG		0.28377		2.94177	15.00000	O
Carbon Disulfide	1.11508	1.30874	1.27771	1.38711	1.31708	1.37408	AVG		1.29664		7.56179	15.00000	O
Methylene Chloride	7357	30384	111266	273005	568786	819335	LNR	-0.00908	0.46169		0.99998	0.99000	O
Acetone	0.13254	0.13842	0.13226	0.13239	0.12890	0.12404	AVG		0.13142		3.61240	15.00000	O
trans-1,2-Dichloroethene	0.33023	0.41605	0.41707	0.43881	0.43246	0.44349	AVG		0.41302		10.18667	15.00000	O
Methyl tert-butyl ether	0.84472	1.14369	1.23635	1.24948	1.34812	1.31904	AVG		1.19023		15.43296	15.00000	W(
1,1-Dichloroethane	0.58924	0.79728	0.76707	0.81314	0.81885	0.83086	AVG		0.76941		11.82316	15.00000	O
cis-1,2-Dichloroethene	3143	25601	106453	273456	577626	838953	LNR	0.00891	0.47440		0.99996	0.99000	O
2,2-Dichloropropane	0.39317	0.52075	0.52570	0.57521	0.54266	0.58234	AVG		0.52330		13.10109	15.00000	O
Bromochloromethane	1431	12205	49779	125915	229318	341318	LNR	-0.02192	0.19129		0.99798	0.99000	O
Chloroform	0.58226	0.74887	0.74428	0.76783	0.77254	0.78144	AVG		0.73287		10.25180	15.00000	O
Carbon Tetrachloride	0.23320	0.30452	0.29386	0.31805	0.32669	0.33539	AVG		0.30195		12.20296	15.00000	O
1,1,1-Trichloroethane	0.45816	0.65677	0.64711	0.68790	0.67151	0.68569	AVG		0.63452		13.84613	15.00000	O
2-Butanone	0.14816	0.21130	0.21895	0.22890	0.23484	0.23359	AVG		0.21262		15.44920	15.00000	W(
1,1-Dichloropropene	0.23932	0.34012	0.34331	0.36363	0.36439	0.38317	AVG		0.33899		15.13356	15.00000	W(
Benzene	0.78992	1.04722	1.04422	1.07023	1.09292	1.08133	AVG		1.02097		11.24125	15.00000	O
1,2-Dichloroethane	0.37714	0.40069	0.37208	0.36820	0.38933	0.39489	AVG		0.38372		3.42534	15.00000	O
Trichloroethene	0.18169	0.24404	0.24593	0.25340	0.25888	0.26778	AVG		0.24195		12.71974	15.00000	O
Dibromomethane	1859	14896	62638	159976	347438	519675	LNR	0.02701	0.17197		0.99908	0.99000	O
1,2-Dichloropropane	0.19085	0.25360	0.26508	0.26714	0.28271	0.28700	AVG		0.25773		13.56796	15.00000	O
Bromodichloromethane	0.23601	0.31515	0.32617	0.33968	0.36250	0.37477	AVG		0.32571		15.11162	15.00000	W(
cis-1,3-dichloropropene	4306	37640	178493	484214	1040076	1560847	LNR	0.03393	0.51765		0.99910	0.99000	O
Toluene	0.53111	0.66431	0.64959	0.69108	0.70738	0.73084	AVG		0.66239		10.66141	15.00000	O
Tetrachloroethene	0.16318	0.18027	0.17536	0.18470	0.18289	0.19003	AVG		0.17941		5.18797	15.00000	O
4-methyl-2-pentanone	12745	123446	583655	1557305	3448173	5048920	LNR	0.16264	0.33686		0.99925	0.99000	O
trans-1,3-Dichloropropene	4225	34284	158881	437791	964476	1463346	LNR	0.04349	0.48485		0.99831	0.99000	O
1,1,2-Trichloroethane	2442	19200	80731	212526	453419	680134	LNR	0.02659	0.22502		0.99920	0.99000	O
Dibromochloromethane	2759	21679	96816	260045	575976	873738	LNR	0.02953	0.25980		0.99931	0.99000	O
1,3-Dichloropropane	0.31081	0.43815	0.44939	0.46734	0.47620	0.47626	AVG		0.43636		14.52064	15.00000	O
1,2-Dibromoethane	2865	22370	96392	256603	557288	831807	LNR	0.03086	0.27584		0.99910	0.99000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2295
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P4809.D P4808.D P4807.D P4806.D P4811.D P4810.D
Column ID:
Calibration Date(s): 19-MAR-18 16:00
19-MAR-18 18:51

2-Hexanone	7169	76868	385212	1068792	2356981	3488947	LNR	0.13889	0.20909		0.99964	0.99000	O
Chlorobenzene	0.59484	0.71409	0.70023	0.71270	0.71986	0.73963	AVG		0.69689		7.40770	15.00000	O
Ethylbenzene	4883	36679	156073	425787	903630	1396948	LNR	0.02548	0.41316		0.99921	0.99000	O
1,1,1,2-Tetrachloroethane	0.16968	0.22330	0.23344	0.24674	0.25380	0.26526	AVG		0.23203		14.6288(	15.00000	O
m+p-Xylenes	10731	87426	390236	1079323	2306445	3512534	LNR	0.05060	0.52168		0.99954	0.99000	O
o-Xylene	4276	37776	183701	506796	1079294	1635274	LNR	0.02481	0.48660		0.99968	0.99000	O
Styrene	5896	61441	307786	871381	1928413	2945626	LNR	0.03883	0.87717		0.99909	0.99000	O
Bromoform	1537	13226	63004	179890	416610	630831	LNR	0.04583	0.18847		0.99851	0.99000	O
Isopropylbenzene	9742	93275	441106	1246776	2599648	3939388	LNR	0.01838	2.14066		0.99975	0.99000	O
Bromobenzene	0.40122	0.50516	0.52378	0.53158	0.53388	0.54282	AVG		0.50641		10.47934	15.00000	O
N-Propylbenzene	1.67898	2.36812	2.50666	2.66684	2.61230	2.59814	AVG		2.40517		15.41862	15.00000	W(
1,1,2,2-Tetrachloroethane	0.44697	0.59886	0.60532	0.61691	0.63716	0.64056	AVG		0.59097		12.26519	15.00000	O
2-Chlorotoluene	1.02815	1.36918	1.50646	1.56597	1.57417	1.60259	AVG		1.44109		15.18249	15.00000	W(
1,2,3-Trichloropropane	0.39434	0.54735	0.54579	0.56253	0.59356	0.60413	AVG		0.54128		14.01749	15.00000	O
1,3,5-Trimethylbenzene	8907	81328	379779	1068997	2293197	3474073	LNR	0.02402	1.88883		0.99966	0.99000	O
4-Chlorotoluene	10824	84442	365152	990332	2097332	3147615	LNR	0.01257	1.71035		0.99990	0.99000	O
tert-Butylbenzene	9422	79038	374433	1064207	2302266	3511430	LNR	0.02884	1.90761		0.99944	0.99000	O
1,2,4-Trimethylbenzene	8467	86614	402303	1113908	2381876	3569647	LNR	0.01880	1.94425		0.99986	0.99000	O
sec-Butylbenzene	11786	104273	463527	1312829	2737973	4141257	LNR	0.01655	2.24993		0.99977	0.99000	O
P-Isopropyltoluene	8320	79229	384616	1103867	2338969	3556952	LNR	0.02500	1.93364		0.99962	0.99000	O
1,3-Dichlorobenzene	0.76250	1.01545	1.01322	1.01205	1.02387	1.04976	AVG		0.97948		10.94684	15.00000	O
1,4-Dichlorobenzene	0.97699	1.13501	1.05773	1.07500	1.08051	1.09247	AVG		1.06962		4.88795	15.00000	O
N-Butylbenzene	8451	71598	344293	982785	2083483	3179931	LNR	0.02520	1.72671		0.99955	0.99000	O
1,2-Dichlorobenzene	0.71607	0.96923	0.94707	0.97645	0.98275	1.00680	AVG		0.93306		11.58072	15.00000	O
1,2-Dibromo-3-Chloropropane	531	5039	24058	63197	141057	216989	LNR	0.03152	0.11752		0.99898	0.99000	O
Hexachlorobutadiene	0.17926	0.19547	0.19556	0.19501	0.19650	0.20505	AVG		0.19448		4.30140	15.00000	O
1,2,4-Trichlorobenzene	0.48623	0.54428	0.57223	0.59968	0.62205	0.64782	AVG		0.57871		10.0382(	15.00000	O
Naphthalene	9897	70949	361473	946106	2229245	3227573	LNR	0.02761	1.77587		0.99895	0.99000	O
1,2,3-Trichlorobenzene	0.47108	0.53161	0.54912	0.52625	0.55617	0.56308	AVG		0.53288		6.27046	15.00000	O
Dibromofluoromethane	0.48804	0.49075	0.48318	0.49345	0.49662	0.49601	AVG		0.49134		1.04566	15.00000	
1,2-Dichloroethane-D4	0.69619	0.68494	0.67902	0.68630	0.70887	0.72371	AVG		0.69650		2.43363	15.00000	
Toluene-D8	1.25664	1.27099	1.27362	1.25126	1.27907	1.27257	AVG		1.26736		0.85768	15.00000	
P-Bromofluorobenzene	0.52725	0.53984	0.55270	0.55513	0.56926	0.56531	AVG		0.55158		2.86050	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4812.D
Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG225041-7
Level: LOW Operator: hg
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all50.sub
Method File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P8A05(62)D.m
Misc Info: WG225041,WG225041-4

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	43.3	86.55	80-120
	2	Chloromethane	50.0	47.6	95.32	80-120
	3	Vinyl chloride	50.0	45.3	90.66	80-120
	4	Bromomethane	50.0	46.3	92.59	80-120
	5	Chloroethane	50.0	45.8	91.70	80-120
	6	Trichlorofluoromet	50.0	43.0	86.07	80-120
	7	Diethyl Ether	50.0	49.3	98.60	80-120
	19	Tertiary-butyl alc	250	286	114.29	80-120
	8	1,1-Dichloroethene	50.0	48.9	97.80	80-120
	10	Carbon Disulfide	50.0	53.3	106.59	80-120
	9	Freon-113	50.0	48.3	96.64	80-120
	11	Iodomethane	50.0	48.0	96.10	80-120
	12	Acrolein	250	274	109.78	80-120
	14	Methylene Chloride	50.0	49.2	98.40	80-120
	15	Acetone	50.0	54.3	108.58	80-120
	45	Isobutyl Alcohol	1000	1060	105.79	80-120
	16	trans-1,2-Dichloro	50.0	51.7	103.47	80-120
	13	Allyl Chloride	50.0	51.2	102.44	80-120
	18	Methyl tert-butyl	50.0	53.9	107.78	80-120
	20	Acetonitrile	500	479	95.87	80-120
	21	Di-isopropyl ether	50.0	53.6	107.26	80-120
	22	Chloroprene	50.0	53.1	106.21	80-120
	39	Propionitrile	500	525	104.98	80-120
	40	Methacrylonitrile	500	557	111.36	80-120
	23	1,1-Dichloroethane	50.0	53.8	107.68	80-120
	24	Acrylonitrile	250	270	108.17	80-120
	25	Ethyl tertiary-but	50.0	49.2	98.43	80-120
	26	Vinyl Acetate	50.0	64.9	129.88*	80-120
	27	cis-1,2-Dichloroet	50.0	50.0	100.04	80-120
M	98	1,2-Dichloroethyle	100	102	101.76	80-120
	52	Methyl Methacrylat	50.0	48.4	96.78	80-120
	28	2,2-Dichloropropan	50.0	47.2	94.44	80-120
	29	Bromochloromethane	50.0	50.1	100.21	80-120
	31	Chloroform	50.0	52.5	105.00	80-120
	32	Carbon Tetrachlori	50.0	52.7	105.33	80-120
	33	Tetrahydrofuran	50.0	50.9	101.81	80-120
	35	1,1,1-Trichloroeth	50.0	51.5	103.04	80-120
	37	1,1-Dichloropropen	50.0	53.4	106.71	80-120
	36	2-Butanone	50.0	53.5	107.03	80-120
	38	Benzene	50.0	51.4	102.81	80-120

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4812.D
Report Date: 21-Mar-2018 10:24

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	30	Cyclohexane	50.0	46.6	93.11	80-120
	53	Ethyl Methacrylate	50.0	46.8	93.56	80-120
	43	Tertiary-amyl meth	50.0	47.5	94.97	80-120
	44	1,2-Dichloroethane	50.0	50.7	101.37	80-120
	47	Trichloroethene	50.0	51.2	102.31	80-120
	49	Dibromomethane	50.0	48.8	97.55	80-120
	50	1,2-Dichloropropan	50.0	52.8	105.72	80-120
	51	Bromodichlorometha	50.0	54.7	109.47	80-120
	57	cis-1,3-dichloropr	50.0	45.2	90.37	80-120
	54	1,4-Dioxane	1000	1340	133.88*	80-120
	56	2-Chloroethylviny	50.0	0.00	*	80-120
	59	Toluene	50.0	50.3	100.61	80-120
	61	4-methyl-2-pentano	50.0	50.3	100.68	80-120
	60	Tetrachloroethene	50.0	50.6	101.30	80-120
	62	trans-1,3-Dichloro	50.0	46.1	92.19	80-120
	63	1,1,2-Trichloroeth	50.0	47.7	95.37	80-120
	64	Dibromochlorometha	50.0	48.9	97.84	80-120
	65	1,3-Dichloropropan	50.0	51.1	102.22	80-120
	66	1,2-Dibromoethane	50.0	48.4	96.86	80-120
	67	2-Hexanone	50.0	49.7	99.44	80-120
	69	Chlorobenzene	50.0	50.2	100.33	80-120
	70	1-Chlorohexane	50.0	51.1	102.16	80-120
	71	Ethylbenzene	50.0	46.8	93.51	80-120
	72	1,1,1,2-Tetrachlor	50.0	52.1	104.20	80-120
M	106	Xylenes (total)	150	140	93.05	80-120
	73	m+p-Xylenes	100	93.3	93.32	80-120
	74	o-Xylene	50.0	46.2	92.51	80-120
	75	Styrene	50.0	46.7	93.39	80-120
	76	Bromoform	50.0	48.3	96.68	80-120
	77	Isopropylbenzene	50.0	50.0	100.03	80-120
	79	cis-1,4-Dichloro-2	50.0	46.3	92.61	80-120
	86	trans-1,4-Dichloro	50.0	54.7	109.46	80-120
	80	Bromobenzene	50.0	50.8	101.69	80-120
	81	N-Propylbenzene	50.0	52.9	105.73	80-120
	82	1,1,2,2-Tetrachlor	50.0	54.6	109.27	80-120
	85	1,3,5-Trimethylben	50.0	47.6	95.18	80-120
	83	2-Chlorotoluene	50.0	52.5	105.00	80-120
	84	1,2,3-Trichloropro	50.0	52.2	104.37	80-120
	87	4-Chlorotoluene	50.0	47.9	95.89	80-120
	88	tert-Butylbenzene	50.0	46.5	93.06	80-120
	89	Pentachloroethane	50.0	50.5	101.01	80-120
	90	1,2,4-Trimethylben	50.0	47.9	95.86	80-120
	92	P-Isopropyltoluene	50.0	47.9	95.77	80-120
	93	1,3-Dichlorobenzen	50.0	51.3	102.59	80-120
	95	1,4-Dichlorobenzen	50.0	48.8	97.56	80-120
	97	N-Butylbenzene	50.0	47.9	95.84	80-120
	91	sec-Butylbenzene	50.0	48.6	97.13	80-120
	99	1,2-Dichlorobenzen	50.0	51.0	102.07	80-120
	100	1,2-Dibromo-3-Chlo	50.0	49.4	98.71	80-120
	101	1,3,5-Trichloroben	50.0	50.1	100.23	80-120
	102	Hexachlorobutadien	50.0	48.5	96.99	80-120
	103	1,2,4-Trichloroben	50.0	52.4	104.89	80-120
	96	1,2,3-Trimethylben	50.0	52.3	104.59	80-120
	104	Naphthalene	50.0	52.5	105.00	80-120

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4812.D
Report Date: 21-Mar-2018 10:24

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	105 1,2,3-Trichloroben	50.0	51.9	103.88	80-120
	17 Methyl Acetate	50.0	56.3	112.65	80-120
	46 Methylcyclohexane	50.0	46.8	93.52	80-120
M	55 Total Alkylbenzene	350	339	96.94	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	34 Dibromofluorometha	50.0	49.8	99.54	80-119
$	42 1,2-Dichloroethane	50.0	49.5	98.95	81-118
$	58 Toluene-D8	50.0	49.8	99.50	89-112
$	78 P-Bromofluorobenze	50.0	50.1	100.26	85-114

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4806.D
Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P031918B.b\P4806.D
Lab Smp Id: WG225041-4
Inj Date : 19-MAR-2018 16:00 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225041-4
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P031918B.b\P8A05(62)D.m
Meth Date : 21-Mar-2018 10:23 gcms-p.i Quant Type: ISTD
Cal Date : 13-MAR-2018 12:22 Cal File: P4736.D
Als bottle: 3 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

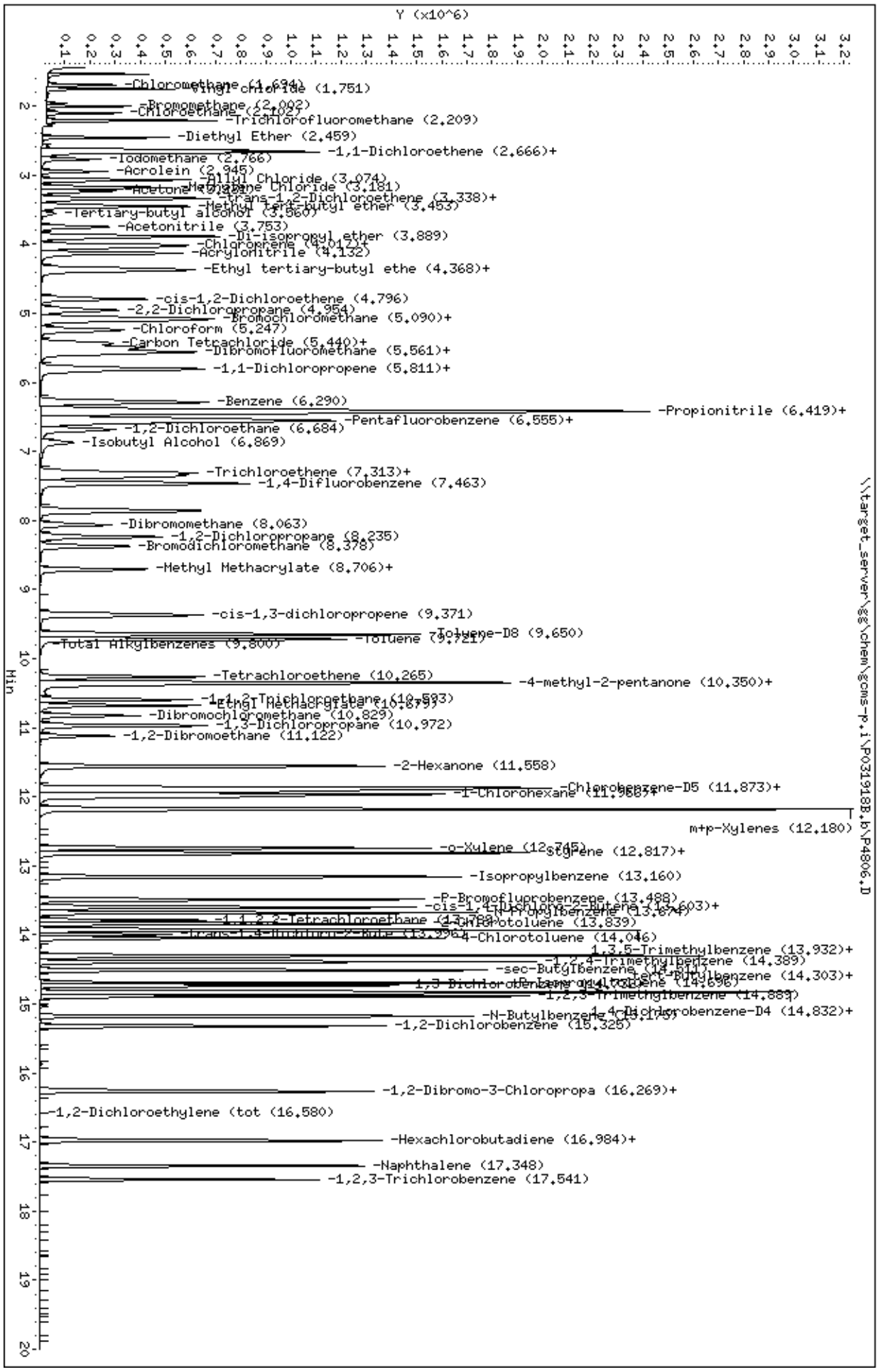
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	245142	50.0000	50.9	
2	Chloromethane	50	1.694	1.694	(0.259)	334478	50.0000	48.7	
3	Vinyl chloride	62	1.751	1.751	(0.268)	364899	50.0000	50.7	
4	Bromomethane	94	2.001	2.001	(0.306)	139268	50.0000	43.6	
5	Chloroethane	64	2.101	2.101	(0.322)	231548	50.0000	50.3	
6	Trichlorofluoromethane	101	2.208	2.209	(0.338)	502263	50.0000	50.9	
7	Diethyl Ether	59	2.459	2.459	(0.376)	258146	50.0000	49.5	
19	Tertiary-butyl alcohol	59	3.559	3.560	(0.545)	68668	250.000	230	
8	1,1-Dichloroethene	96	2.630	2.631	(0.403)	241633	50.0000	54.2	
10	Carbon Disulfide	76	2.666	2.666	(0.408)	813199	50.0000	53.5	
9	Freon-113	151	2.659	2.659	(0.407)	172603	50.0000	51.9	
11	Iodomethane	142	2.766	2.766	(0.423)	264305	50.0000	57.1	
12	Acrolein	56	2.945	2.945	(0.451)	246100	250.000	238	
14	Methylene Chloride	84	3.181	3.181	(0.487)	273005	50.0000	50.0	
15	Acetone	43	3.231	3.231	(0.495)	388058	250.000	252	
45	Isobutyl Alcohol	43	6.869	6.869	(1.051)	135785	1000.00	918	
16	trans-1,2-Dichloroethene	96	3.338	3.338	(0.511)	257255	50.0000	53.1	
13	Allyl Chloride	41	3.073	3.074	(0.470)	403122	50.0000	51.8	
18	Methyl tert-butyl ether	73	3.452	3.453	(0.528)	732513	50.0000	52.5	
20	Acetonitrile	41	3.752	3.753	(0.574)	371106	500.000	489	
21	Di-isopropyl ether	45	3.888	3.889	(0.595)	864359	50.0000	52.5	
22	Chloroprene	53	4.017	4.017	(0.615)	402127	50.0000	53.7	
39	Propionitrile	54	6.390	6.390	(0.978)	443063	500.000	522	
40	Methacrylonitrile	41	6.426	6.426	(0.984)	2042203	500.000	522	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4806.D
Report Date: 21-Mar-2018 10:24

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	4.053	4.053	(0.620)	476707	50.0000	52.8	
	24 Acrylonitrile	52	4.131	4.131	(0.632)	508398	250.000	259	
	25 Ethyl tertiary-butyl ether	59	4.367	4.368	(0.668)	758380	50.0000	47.0	
	26 Vinyl Acetate	43	4.396	4.396	(0.589)	411046	50.0000	41.7	
	27 cis-1,2-Dichloroethene	96	4.796	4.796	(0.734)	273456	50.0000	49.6	
	52 Methyl Methacrylate	41	8.706	8.706	(1.167)	265290	50.0000	44.8	
	28 2,2-Dichloropropane	77	4.953	4.954	(0.758)	337219	50.0000	55.0	
	29 Bromochloromethane	128	5.103	5.104	(0.781)	125915	50.0000	55.0	
	31 Chloroform	83	5.239	5.240	(0.802)	450144	50.0000	52.4	
	32 Carbon Tetrachloride	117	5.439	5.440	(0.729)	323979	50.0000	52.7	
	33 Tetrahydrofuran	42	5.496	5.497	(0.841)	437900	250.000	242	
$	34 Dibromofluoromethane	113	5.561	5.561	(0.851)	289284	50.0000	50.2	
	35 1,1,1-Trichloroethane	97	5.575	5.576	(0.853)	403282	50.0000	54.2	
	37 1,1-Dichloropropene	75	5.797	5.797	(0.777)	370406	50.0000	53.6	
	36 2-Butanone	43	5.818	5.819	(0.891)	670964	250.000	269	
	38 Benzene	78	6.290	6.290	(0.843)	1090182	50.0000	52.4	
*	41 Pentafluorobenzene	168	6.533	6.533	(1.000)	586253	50.0000		
	30 Cyclohexane	56	5.075	5.075	(0.777)	442638	50.0000	50.1	
	53 Ethyl Methacrylate	69	10.679	10.679	(1.431)	406421	50.0000	45.4	
$	42 1,2-Dichloroethane-D4	65	6.562	6.562	(1.004)	402344	50.0000	49.3	
	43 Tertiary-amyl methyl ether	73	6.562	6.562	(1.004)	731354	50.0000	46.6	
	44 1,2-Dichloroethane	62	6.683	6.684	(0.896)	375063	50.0000	48.0	
	47 Trichloroethene	95	7.362	7.363	(0.987)	258120	50.0000	52.4	
*	48 1,4-Difluorobenzene	114	7.462	7.463	(1.000)	1018640	50.0000		
	49 Dibromomethane	93	8.063	8.063	(1.080)	159976	50.0000	47.0	
	50 1,2-Dichloropropane	63	8.241	8.242	(1.104)	272120	50.0000	51.8	
	51 Bromodichloromethane	83	8.377	8.378	(1.123)	346010	50.0000	52.1	
	57 cis-1,3-dichloropropene	75	9.378	9.378	(1.257)	484214	50.0000	47.6	
	54 1,4-Dioxane	88	8.720	8.721	(1.169)	27716	1000.00	487	
$	58 Toluene-D8	98	9.649	9.650	(1.293)	1274586	50.0000	49.4	
	59 Toluene	92	9.721	9.721	(1.303)	703962	50.0000	52.2	
	61 4-methyl-2-pentanone	43	10.343	10.343	(1.386)	1557305	250.000	235	
	60 Tetrachloroethene	164	10.264	10.265	(0.865)	200752	50.0000	51.5	
	62 trans-1,3-Dichloropropene	75	10.379	10.379	(1.391)	437791	50.0000	46.5	
	63 1,1,2-Trichloroethane	83	10.593	10.593	(1.420)	212526	50.0000	47.7	
	64 Dibromochloromethane	129	10.829	10.829	(0.912)	260045	50.0000	47.5	
	65 1,3-Dichloropropane	76	10.972	10.972	(0.924)	507960	50.0000	53.5	
	66 1,2-Dibromoethane	107	11.122	11.122	(1.490)	256603	50.0000	47.2	
	67 2-Hexanone	43	11.558	11.558	(0.974)	1068792	250.000	242	
*	68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	1086918	50.0000		
	69 Chlorobenzene	112	11.894	11.894	(1.002)	774649	50.0000	51.1	
	70 1-Chlorohexane	91	11.923	11.923	(1.004)	398508	50.0000	54.9	
	71 Ethylbenzene	106	11.965	11.966	(1.008)	425787	50.0000	48.7	
	72 1,1,1,2-Tetrachloroethane	131	12.001	12.002	(1.011)	268181	50.0000	53.2	
	73 m+p-Xylenes	106	12.180	12.180	(1.026)	1079323	100.000	97.7	
	74 o-Xylene	106	12.745	12.745	(1.073)	506796	50.0000	49.2	
	75 Styrene	104	12.816	12.817	(1.079)	871381	50.0000	47.6	
	76 Bromoform	173	12.816	12.817	(1.079)	179890	50.0000	46.2	
	77 Isopropylbenzene	105	13.159	13.160	(0.888)	1246776	50.0000	50.2	
$	78 P-Bromofluorobenzene	95	13.488	13.488	(1.807)	565474	50.0000	50.3	
	79 cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	141166	50.0000	47.3	
	86 trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	113517	50.0000	55.8	
	80 Bromobenzene	156	13.595	13.596	(0.917)	313981	50.0000	52.5	
	81 N-Propylbenzene	91	13.674	13.674	(0.922)	1575176	50.0000	55.4	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4806.D
Report Date: 21-Mar-2018 10:24

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	82 1,1,2,2-Tetrachloroethane	83	13.788	13.789	(0.930)	364379	50.0000	52.2	
	85 1,3,5-Trimethylbenzene	105	13.931	13.932	(0.940)	1068997	50.0000	49.1	
	83 2-Chlorotoluene	91	13.838	13.839	(0.933)	924946	50.0000	54.3	
	84 1,2,3-Trichloropropane	75	13.924	13.924	(0.939)	332260	50.0000	52.0	
	87 4-Chlorotoluene	91	14.045	14.046	(0.947)	990332	50.0000	49.6	
	88 tert-Butylbenzene	119	14.303	14.303	(0.965)	1064207	50.0000	48.7	
	89 Pentachloroethane	165	14.310	14.310	(0.965)	153650	50.0000	53.0	
	90 1,2,4-Trimethylbenzene	105	14.389	14.389	(0.971)	1113908	50.0000	49.4	
	92 P-Isopropyltoluene	119	14.696	14.696	(0.991)	1103867	50.0000	49.6	
	93 1,3-Dichlorobenzene	146	14.739	14.739	(0.994)	597769	50.0000	51.7	
*	94 1,4-Dichlorobenzene-D4	152	14.825	14.825	(1.000)	590652	50.0000		
	95 1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	634953	50.0000	50.2	
	97 N-Butylbenzene	91	15.175	15.175	(1.024)	982785	50.0000	49.4	
	91 sec-Butylbenzene	105	14.510	14.511	(0.979)	1312829	50.0000	50.2	
	99 1,2-Dichlorobenzene	146	15.325	15.325	(1.034)	576741	50.0000	52.3	
	100 1,2-Dibromo-3-Chloropropane	75	16.240	16.239	(1.095)	63197	50.0000	47.1	
	101 1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	403116	50.0000	51.7	
	102 Hexachlorobutadiene	225	16.962	16.962	(1.144)	115183	50.0000	50.1	
	103 1,2,4-Trichlorobenzene	180	16.983	16.984	(1.146)	354202	50.0000	51.8	
	96 1,2,3-Trimethylbenzene	105	14.889	14.889	(1.004)	1158148	50.0000	52.8	
	104 Naphthalene	128	17.348	17.347	(1.170)	946106	50.0000	46.5	
	105 1,2,3-Trichlorobenzene	180	17.541	17.541	(1.183)	310830	50.0000	49.4	
	17 Methyl Acetate	43	3.352	3.353	(0.513)	185762	50.0000	42.4	
	46 Methylcyclohexane	83	7.312	7.313	(1.119)	433319	50.0000	48.4	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Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4806.D
Date : 19-MAR-2018 16:00
Client ID:
Sample Info: WG225041-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P031918B.b\P4806.D
-Chloromethane (1.694)
-Vinyl chloride (1.751)
-Bromomethane (2.002)
-Chloroethane (2.107)
-Trichlorofluoromethane (2.209)
-Diethyl Ether (2.459)
-1,1-Dichloroethene (2.666)+
-Iodomethane (2.766)
-Acrolein (2.945)
-Allyl Chloride (3.074)
-Methylene Chloride (3.181)
-Acetone (3.220)
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.453)
-Tertiary-butyl alcohol (3.560)
-Acetonitrile (3.753)
-Di-isopropyl ether (3.889)
-Chloroprene (4.012)+
-Acrylonitrile (4.132)
-Ethyl tertiary-butyl ethe (4.368)+
-cis-1,2-Dichloroethene (4.796)
-2,2-Dichloropropane (4.954)
-Bromochloromethane (5.090)+
-Chloroform (5.247)
-Carbon Tetrachloride (5.440)+
-Dibromofluoromethane (5.561)+
-1,1-Dichloropropene (5.811)+
-Benzene (6.290)
-Propionitrile (6.419)+
-Pentafluorobenzene (6.555)+
-1,2-Dichloroethane (6.684)
-Isobutyl Alcohol (6.869)
-Trichloroethene (7.313)+
-1,4-Difluorobenzene (7.463)
-Dibromomethane (8.063)
-1,2-Dichloropropane (8.235)
-Bromodichloromethane (8.378)
-Methyl Methacrylate (8.706)+
-cis-1,3-dichloropropene (9.371)
-Toluene-D8 (9.650)
-Toluene (9.721)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.265)
-4-methyl-2-pentanone (10.350)+
-1,1,2-Trichloroethane (10.593)
-Ethyl Methacrylate (10.679)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.122)
-2-Hexanone (11.558)
-Chlorobenzene-D5 (11.873)+
-1-Chlorohexane (11.960)+
m+p-Xylenes (12.180)
-o-Xylene (12.745)
-Styrene (12.817)+
-Isopropylbenzene (13.160)
-P-Bromofluorobenzene (13.488)
-cis-1,4-Dichloro-2-Butene (13.603)+
-n-Propylbenzene (13.674)
-1,1,2,2-Tetrachloroethane (13.708)
-2-Chlorotoluene (13.839)
-trans-1,4-Dichloro-2-Bute (13.996)+
-4-Chlorotoluene (14.046)
-1,3,5-Trimethylbenzene (13.932)+
-1,2,4-Trimethylbenzene (14.389)
-sec-Butylbenzene (14.511)
-tert-Butylbenzene (14.303)+
-1,3-Dichlorobenzene (14.696)
-1,2,3-Trimethylbenzene (14.889)
-N-Butylbenzene (15.175)
-1,4-Dichlorobenzene-D4 (14.832)+
-1,2-Dichlorobenzene (15.325)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.984)+
-Naphthalene (17.348)
-1,2,3-Trichlorobenzene (17.541)

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4807.D
Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P031918B.b\P4807.D
Lab Smp Id: WG225041-3
Inj Date : 19-MAR-2018 16:34 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225041-3
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P031918B.b\P8A05(62)D.m
Meth Date : 21-Mar-2018 10:23 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 16:34 Cal File: P4807.D
Als bottle: 4 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.539	1.537	(0.236)	104836	20.0000	21.8	
2	Chloromethane	50	1.696	1.694	(0.260)	139666	20.0000	20.3	
3	Vinyl chloride	62	1.753	1.751	(0.268)	147683	20.0000	20.5	
4	Bromomethane	94	2.003	2.001	(0.307)	60935	20.0000	19.1	
5	Chloroethane	64	2.103	2.101	(0.322)	95899	20.0000	20.8	
6	Trichlorofluoromethane	101	2.211	2.209	(0.338)	204770	20.0000	20.7	
7	Diethyl Ether	59	2.461	2.459	(0.377)	106070	20.0000	20.3	
19	Tertiary-butyl alcohol	59	3.554	3.560	(0.544)	28969	100.000	94.8	
8	1,1-Dichloroethene	96	2.632	2.631	(0.403)	89901	20.0000	20.1	
10	Carbon Disulfide	76	2.668	2.666	(0.408)	300011	20.0000	19.7	
9	Freon-113	151	2.661	2.659	(0.407)	64596	20.0000	19.4	
11	Iodomethane	142	2.768	2.766	(0.424)	99996	20.0000	21.6	
12	Acrolein	56	2.947	2.945	(0.451)	100180	100.000	96.8	
14	Methylene Chloride	84	3.183	3.181	(0.487)	111266	20.0000	20.1	
15	Acetone	43	3.233	3.231	(0.495)	155274	100.000	101	
45	Isobutyl Alcohol	43	6.878	6.869	(1.052)	40410	400.000	300	
16	trans-1,2-Dichloroethene	96	3.340	3.338	(0.511)	97929	20.0000	20.2	
13	Allyl Chloride	41	3.068	3.074	(0.470)	156928	20.0000	20.2	
18	Methyl tert-butyl ether	73	3.454	3.453	(0.529)	290299	20.0000	20.8	
20	Acetonitrile	41	3.747	3.753	(0.573)	145090	200.000	191	
21	Di-isopropyl ether	45	3.890	3.889	(0.595)	332172	20.0000	20.1	
22	Chloroprene	53	4.012	4.017	(0.614)	147784	20.0000	19.7	
39	Propionitrile	54	6.392	6.390	(0.978)	165415	200.000	195	
40	Methacrylonitrile	41	6.428	6.426	(0.984)	786331	200.000	201	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4807.D
Report Date: 21-Mar-2018 10:24

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	4.048	4.053	(0.619)	180111	20.0000	19.9	
	24 Acrylonitrile	52	4.133	4.131	(0.633)	191670	100.000	97.6	
	25 Ethyl tertiary-butyl ether	59	4.369	4.368	(0.669)	289509	20.0000	18.8	
	26 Vinyl Acetate	43	4.398	4.396	(0.589)	185708	20.0000	20.2	
	27 cis-1,2-Dichloroethene	96	4.798	4.796	(0.734)	106453	20.0000	19.6	
	52 Methyl Methacrylate	41	8.715	8.706	(1.168)	95435	20.0000	18.2	
	28 2,2-Dichloropropane	77	4.963	4.954	(0.759)	123435	20.0000	20.1	
	29 Bromochloromethane	128	5.106	5.104	(0.781)	49779	20.0000	21.1	
	31 Chloroform	83	5.241	5.240	(0.802)	174759	20.0000	20.3	
	32 Carbon Tetrachloride	117	5.441	5.440	(0.729)	118060	20.0000	19.5	
	33 Tetrahydrofuran	42	5.506	5.497	(0.843)	163920	100.000	94.0	
$	34 Dibromofluoromethane	113	5.563	5.561	(0.851)	283631	50.0000	49.2	
	35 1,1,1-Trichloroethane	97	5.570	5.576	(0.852)	151944	20.0000	20.4	
	37 1,1-Dichloropropene	75	5.806	5.797	(0.778)	137927	20.0000	20.2	
	36 2-Butanone	43	5.820	5.819	(0.891)	257052	100.000	103	
	38 Benzene	78	6.292	6.290	(0.843)	419519	20.0000	20.4	
*	41 Pentafluorobenzene	168	6.535	6.533	(1.000)	587008	50.0000		
	30 Cyclohexane	56	5.077	5.075	(0.777)	159738	20.0000	18.8	
	53 Ethyl Methacrylate	69	10.681	10.679	(1.431)	138351	20.0000	17.6	
$	42 1,2-Dichloroethane-D4	65	6.564	6.562	(1.004)	398591	50.0000	48.7	
	43 Tertiary-amyl methyl ether	73	6.564	6.562	(1.004)	269602	20.0000	18.4	
	44 1,2-Dichloroethane	62	6.685	6.684	(0.896)	149486	20.0000	19.4	
	47 Trichloroethene	95	7.364	7.363	(0.987)	98803	20.0000	20.3	
*	48 1,4-Difluorobenzene	114	7.464	7.463	(1.000)	1004385	50.0000		
	49 Dibromomethane	93	8.065	8.063	(1.080)	62638	20.0000	19.5	
	50 1,2-Dichloropropane	63	8.243	8.242	(1.104)	106498	20.0000	20.6	
	51 Bromodichloromethane	83	8.379	8.378	(1.123)	131039	20.0000	20.0	
	57 cis-1,3-dichloropropene	75	9.380	9.378	(1.257)	178493	20.0000	18.9	
	54 1,4-Dioxane	88	8.715	8.721	(1.168)	26690	400.000	476	
$	58 Toluene-D8	98	9.652	9.650	(1.293)	1279205	50.0000	50.2	
	59 Toluene	92	9.723	9.721	(1.303)	260974	20.0000	19.6	
	61 4-methyl-2-pentanone	43	10.345	10.343	(1.386)	583655	100.000	94.4	
	60 Tetrachloroethene	164	10.266	10.265	(0.865)	75012	20.0000	19.5	
	62 trans-1,3-Dichloropropene	75	10.381	10.379	(1.391)	158881	20.0000	18.5	
	63 1,1,2-Trichloroethane	83	10.595	10.593	(1.419)	80731	20.0000	19.2	
	64 Dibromochloromethane	129	10.831	10.829	(0.913)	96816	20.0000	18.9	
	65 1,3-Dichloropropane	76	10.967	10.972	(0.924)	192227	20.0000	20.6	
	66 1,2-Dibromoethane	107	11.124	11.122	(1.490)	96392	20.0000	18.9	
	67 2-Hexanone	43	11.560	11.558	(0.974)	385212	100.000	93.1	
*	68 Chlorobenzene-D5	117	11.868	11.873	(1.000)	1069387	50.0000		
	69 Chlorobenzene	112	11.889	11.894	(1.002)	299528	20.0000	20.1	
	70 1-Chlorohexane	91	11.925	11.923	(1.005)	148118	20.0000	20.7	
	71 Ethylbenzene	106	11.968	11.966	(1.008)	156073	20.0000	18.9	
	72 1,1,1,2-Tetrachloroethane	131	12.003	12.002	(1.011)	99853	20.0000	20.1	
	73 m+p-Xylenes	106	12.182	12.180	(1.027)	390236	40.0000	37.5	
	74 o-Xylene	106	12.740	12.745	(1.073)	183701	20.0000	18.9	
	75 Styrene	104	12.818	12.817	(1.080)	307786	20.0000	18.3	
	76 Bromoform	173	12.818	12.817	(1.080)	63004	20.0000	17.9	
	77 Isopropylbenzene	105	13.161	13.160	(0.888)	441106	20.0000	19.0	
$	78 P-Bromofluorobenzene	95	13.490	13.488	(1.807)	555122	50.0000	50.1	
	79 cis-1,4-Dichloro-2-Butene	53	13.604	13.610	(0.918)	51049	20.0000	18.8	
	86 trans-1,4-Dichloro-2-Butene	53	13.998	13.996	(0.944)	38156	20.0000	19.5	
	80 Bromobenzene	156	13.597	13.596	(0.917)	119237	20.0000	20.7	
	81 N-Propylbenzene	91	13.676	13.674	(0.922)	570636	20.0000	20.8	

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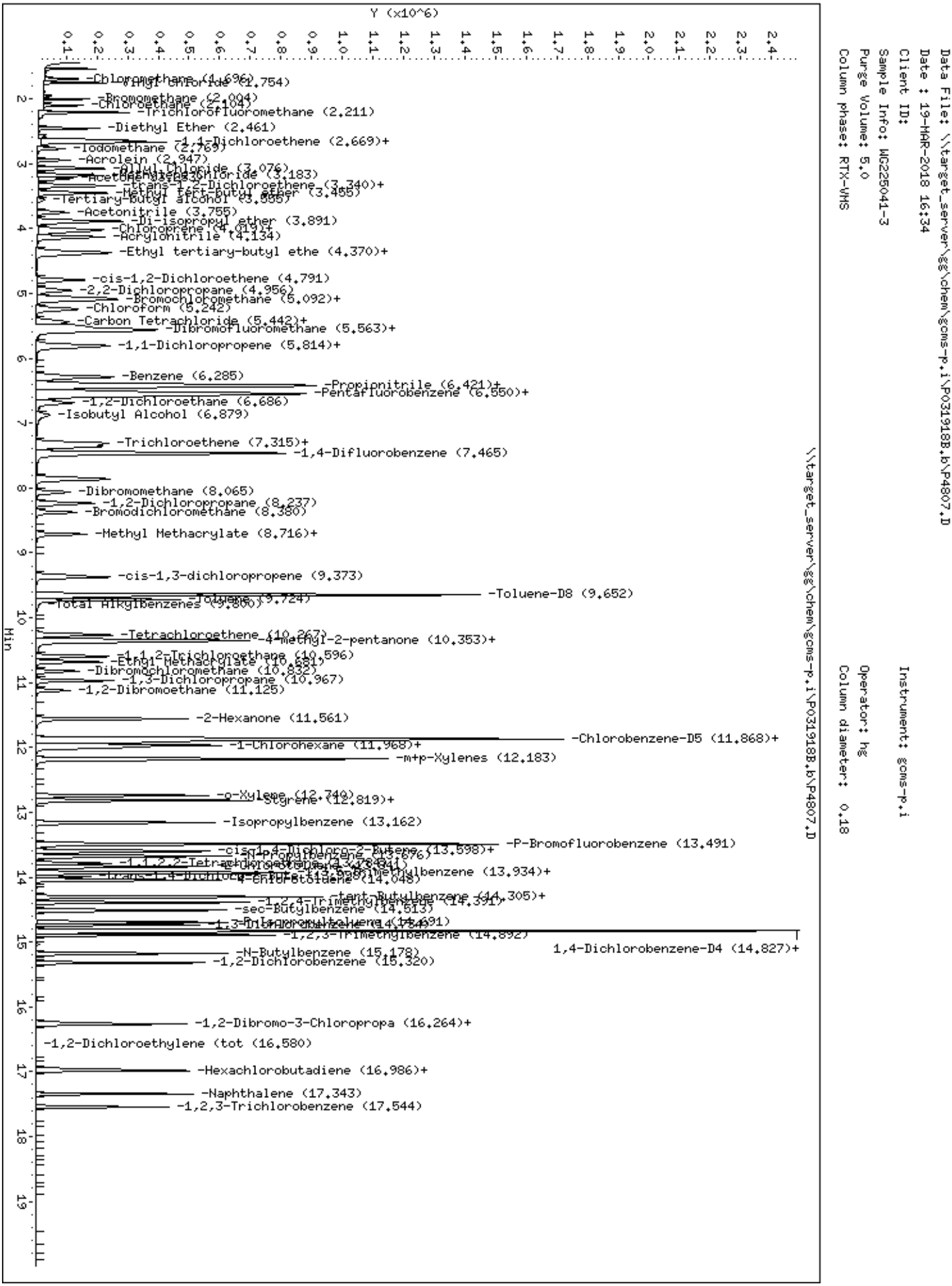
Report Date: 21-Mar-2018 10:24

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.790	13.789	(0.930)	137800	20.0000	20.5	
85	1,3,5-Trimethylbenzene	105	13.933	13.932	(0.940)	379779	20.0000	18.9	
83	2-Chlorotoluene	91	13.840	13.839	(0.933)	342942	20.0000	20.9	
84	1,2,3-Trichloropropane	75	13.926	13.924	(0.939)	124248	20.0000	20.2	
87	4-Chlorotoluene	91	14.048	14.046	(0.947)	365152	20.0000	19.4	
88	tert-Butylbenzene	119	14.305	14.303	(0.965)	374433	20.0000	18.7	
89	Pentachloroethane	165	14.312	14.310	(0.965)	55684	20.0000	19.9	
90	1,2,4-Trimethylbenzene	105	14.391	14.389	(0.971)	402303	20.0000	19.1	
92	P-Isopropyltoluene	119	14.691	14.696	(0.991)	384616	20.0000	18.7	
93	1,3-Dichlorobenzene	146	14.734	14.739	(0.994)	230658	20.0000	20.7	
* 94	1,4-Dichlorobenzene-D4	152	14.827	14.825	(1.000)	569119	50.0000		
95	1,4-Dichlorobenzene	146	14.841	14.847	(1.001)	240789	20.0000	19.8	
97	N-Butylbenzene	91	15.177	15.175	(1.024)	344293	20.0000	18.8	
91	sec-Butylbenzene	105	14.512	14.511	(0.979)	463527	20.0000	18.9	
99	1,2-Dichlorobenzene	146	15.320	15.325	(1.033)	215598	20.0000	20.3	
100	1,2-Dibromo-3-Chloropropane	75	16.235	16.239	(1.095)	24058	20.0000	19.6	
101	1,3,5-Trichlorobenzene	180	16.271	16.268	(1.097)	148830	20.0000	19.8	
102	Hexachlorobutadiene	225	16.964	16.962	(1.144)	44519	20.0000	20.1	
103	1,2,4-Trichlorobenzene	180	16.985	16.984	(1.146)	130266	20.0000	19.8	
96	1,2,3-Trimethylbenzene	105	14.891	14.889	(1.004)	427581	20.0000	20.2	
104	Naphthalene	128	17.343	17.347	(1.170)	361473	20.0000	19.3	
105	1,2,3-Trichlorobenzene	180	17.543	17.541	(1.183)	125006	20.0000	20.6	
17	Methyl Acetate	43	3.354	3.353	(0.513)	85647	20.0000	19.5	
46	Methylcyclohexane	83	7.314	7.313	(1.119)	158250	20.0000	18.6	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Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
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Min
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-Vinyl chloride (1.754)
-Bromomethane (2.004)
-Chloroethane (2.104)
-Trichlorofluoromethane (2.211)
-Diethyl Ether (2.461)
-1,1-Dichloroethene (2.669)+
-Iodomethane (2.769)
-Acrolein (2.947)
-Allyl Chloride (3.076)
-Methyl tert-butyl ether (3.455)
-Tertiary-butyl alcohol (3.555)
-Acetonitrile (3.755)
-Di-isopropyl ether (3.891)
-Chloroprene (4.019)+
-Acrylonitrile (4.134)
-Ethyl tertiary-butyl ethe (4.370)+
-cis-1,2-Dichloroethene (4.791)
-2,2-Dichloropropane (4.956)
-Bromochloromethane (5.092)+
-Chloroform (5.242)
-Carbon Tetrachloride (5.442)+
-Dibromofluoromethane (5.563)+
-1,1-Dichloropropene (5.814)+
-Benzene (6.285)
-Propionitrile (6.421)+
-Pentafluorobenzene (6.550)+
-1,2-Dichloroethane (6.686)
-Isobutyl Alcohol (6.879)
-Trichloroethene (7.315)+
-1,4-Difluorobenzene (7.465)
-Dibromomethane (8.065)
-1,2-Dichloropropane (8.237)
-Bromodichloromethane (8.380)
-Methyl Methacrylate (8.716)+
-cis-1,3-dichloropropene (9.373)
-Toluene-D8 (9.652)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.267)
-4-methyl-2-pentanone (10.353)+
-1,1,2-Trichloroethane (10.596)
-Ethyl Methacrylate (10.681)
-Dibromochloromethane (10.832)
-1,3-Dichloropropane (10.967)
-1,2-Dibromoethane (11.125)
-2-Hexanone (11.561)
-Chlorobenzene-D5 (11.868)+
-1-Chlorohexane (11.968)+
-m+p-Xylenes (12.183)
-o-Xylene (12.740)
-Styrene (12.819)+
-Isopropylbenzene (13.162)
-P-Bromofluorobenzene (13.491)
-N-Propylbenzene (13.676)
-1,2,4-Trimethylbenzene (13.934)+
-4-Chlorotoluene (14.048)
-tert-Butylbenzene (14.305)+
-1,2,4-Trimethylbenzene (14.391)
-sec-Butylbenzene (14.513)
-P-Isopropyltoluene (14.691)
-1,3-Dichlorobenzene (14.754)
-1,2,3-Trimethylbenzene (14.892)
1,4-Dichlorobenzene-D4 (14.827)+
-N-Butylbenzene (15.178)
-1,2-Dichlorobenzene (15.320)
-1,2-Dibromo-3-Chloropropa (16.264)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.986)+
-Naphthalene (17.343)
-1,2,3-Trichlorobenzene (17.544)

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Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P031918B.b\P4808.D
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Operator : hg Inst ID: gcms-p.i
Smp Info : WG225041-2
Misc Info :
Comment : SW846 5030
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Meth Date : 21-Mar-2018 10:23 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 17:08 Cal File: P4808.D
Als bottle: 5 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	22408	5.00000	4.8	
2	Chloromethane	50	1.694	1.694	(0.259)	33272	5.00000	5.0	
3	Vinyl chloride	62	1.751	1.751	(0.268)	34844	5.00000	5.0	
4	Bromomethane	94	2.008	2.001	(0.307)	16431	5.00000	5.4	
5	Chloroethane	64	2.108	2.101	(0.323)	21838	5.00000	4.9	
6	Trichlorofluoromethane	101	2.208	2.209	(0.338)	45277	5.00000	4.8	
7	Diethyl Ether	59	2.458	2.459	(0.376)	24777	5.00000	4.9	
19	Tertiary-butyl alcohol	59	3.566	3.560	(0.546)	6013	25.0000	24.9	
8	1,1-Dichloroethene	96	2.630	2.631	(0.403)	22780	5.00000	5.3	
10	Carbon Disulfide	76	2.666	2.666	(0.408)	73777	5.00000	5.0	
9	Freon-113	151	2.666	2.659	(0.408)	15514	5.00000	4.8	
11	Iodomethane	142	2.773	2.766	(0.425)	20552	5.00000	4.6	
12	Acrolein	56	2.945	2.945	(0.451)	22319	25.0000	22.4	
14	Methylene Chloride	84	3.180	3.181	(0.487)	30384	5.00000	5.4	
15	Acetone	43	3.230	3.231	(0.495)	39016	25.0000	26.3	
45	Isobutyl Alcohol	43	6.883	6.869	(1.054)	7893	100.000	106	
16	trans-1,2-Dichloroethene	96	3.338	3.338	(0.511)	23454	5.00000	5.0	
13	Allyl Chloride	41	3.073	3.074	(0.470)	34104	5.00000	4.6	
18	Methyl tert-butyl ether	73	3.452	3.453	(0.528)	64473	5.00000	4.8	
20	Acetonitrile	41	3.752	3.753	(0.574)	36281	50.0000	49.7	
21	Di-isopropyl ether	45	3.888	3.889	(0.595)	68660	5.00000	4.3	
22	Chloroprene	53	4.010	4.017	(0.614)	32554	5.00000	4.5	
39	Propionitrile	54	6.390	6.390	(0.978)	36801	50.0000	45.1	
40	Methacrylonitrile	41	6.426	6.426	(0.984)	169143	50.0000	45.0	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4808.D
Report Date: 21-Mar-2018 10:24

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	4.052	4.053	(0.620)	44945	5.00000	5.2	
	24	Acrylonitrile	52	4.131	4.131	(0.632)	44182	25.0000	23.4	
	25	Ethyl tertiary-butyl ether	59	4.374	4.368	(0.670)	57805	5.00000	5.1	
	26	Vinyl Acetate	43	4.396	4.396	(0.589)	43335	5.00000	6.1	
	27	cis-1,2-Dichloroethene	96	4.789	4.796	(0.733)	25601	5.00000	5.2	
	52	Methyl Methacrylate	41	8.713	8.706	(1.168)	16947	5.00000	5.7	
	28	2,2-Dichloropropane	77	4.953	4.954	(0.758)	29356	5.00000	5.0	
	29	Bromochloromethane	128	5.110	5.104	(0.782)	12205	5.00000	4.6	
	31	Chloroform	83	5.246	5.240	(0.803)	42216	5.00000	5.1	
	32	Carbon Tetrachloride	117	5.439	5.440	(0.729)	29450	5.00000	5.0	
	33	Tetrahydrofuran	42	5.511	5.497	(0.844)	36028	25.0000	25.8	
$	34	Dibromofluoromethane	113	5.561	5.561	(0.851)	276648	50.0000	49.9	
	35	1,1,1-Trichloroethane	97	5.568	5.576	(0.852)	37024	5.00000	5.2	
	37	1,1-Dichloropropene	75	5.804	5.797	(0.778)	32893	5.00000	5.0	
	36	2-Butanone	43	5.825	5.819	(0.892)	59557	25.0000	24.8	
	38	Benzene	78	6.283	6.290	(0.842)	101275	5.00000	5.1	
*	41	Pentafluorobenzene	168	6.533	6.533	(1.000)	563726	50.0000		
	30	Cyclohexane	56	5.075	5.075	(0.777)	35717	5.00000	5.3	
	53	Ethyl Methacrylate	69	10.679	10.679	(1.431)	22721	5.00000	5.5	
$	42	1,2-Dichloroethane-D4	65	6.554	6.562	(1.003)	386116	50.0000	49.2	
	43	Tertiary-amyl methyl ether	73	6.569	6.562	(1.005)	54300	5.00000	5.3	
	44	1,2-Dichloroethane	62	6.683	6.684	(0.896)	38750	5.00000	5.2	
	47	Trichloroethene	95	7.355	7.363	(0.986)	23601	5.00000	5.0	
*	48	1,4-Difluorobenzene	114	7.462	7.463	(1.000)	967088	50.0000		
	49	Dibromomethane	93	8.070	8.063	(1.081)	14896	5.00000	5.8	
	50	1,2-Dichloropropane	63	8.234	8.242	(1.103)	24525	5.00000	4.9	
	51	Bromodichloromethane	83	8.377	8.378	(1.123)	30478	5.00000	4.8	
	57	cis-1,3-dichloropropene	75	9.378	9.378	(1.257)	37640	5.00000	5.4	
	54	1,4-Dioxane	88	8.720	8.721	(1.169)	8427	100.000	156	
$	58	Toluene-D8	98	9.649	9.650	(1.293)	1229161	50.0000	50.1	
	59	Toluene	92	9.721	9.721	(1.303)	64245	5.00000	5.0	
	61	4-methyl-2-pentanone	43	10.350	10.343	(1.387)	123446	25.0000	27.1	
	60	Tetrachloroethene	164	10.264	10.265	(0.865)	18521	5.00000	5.0	
	62	trans-1,3-Dichloropropene	75	10.378	10.379	(1.391)	34284	5.00000	5.8	
	63	1,1,2-Trichloroethane	83	10.600	10.593	(1.420)	19200	5.00000	5.7	
	64	Dibromochloromethane	129	10.829	10.829	(0.912)	21679	5.00000	5.5	
	65	1,3-Dichloropropane	76	10.972	10.972	(0.924)	45015	5.00000	5.0	
	66	1,2-Dibromoethane	107	11.122	11.122	(1.490)	22370	5.00000	5.7	
	67	2-Hexanone	43	11.558	11.558	(0.974)	76868	25.0000	24.8	
*	68	Chlorobenzene-D5	117	11.872	11.873	(1.000)	1027379	50.0000		
	69	Chlorobenzene	112	11.894	11.894	(1.002)	73364	5.00000	5.1	
	70	1-Chlorohexane	91	11.922	11.923	(1.004)	33044	5.00000	4.8	
	71	Ethylbenzene	106	11.965	11.966	(1.008)	36679	5.00000	5.6	
	72	1,1,1,2-Tetrachloroethane	131	12.008	12.002	(1.011)	22941	5.00000	4.8	
	73	m+p-Xylenes	106	12.180	12.180	(1.026)	87426	10.0000	10.7	
	74	o-Xylene	106	12.744	12.745	(1.073)	37776	5.00000	5.0	
	75	Styrene	104	12.823	12.817	(1.080)	61441	5.00000	5.4	
	76	Bromoform	173	12.816	12.817	(1.079)	13226	5.00000	5.7	
	77	Isopropylbenzene	105	13.159	13.160	(0.888)	93275	5.00000	4.9	
$	78	P-Bromofluorobenzene	95	13.488	13.488	(1.807)	522076	50.0000	48.9	
	79	cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	10035	5.00000	5.2	
	86	trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	8110	5.00000	4.3	
	80	Bromobenzene	156	13.602	13.596	(0.918)	27440	5.00000	5.0	
	81	N-Propylbenzene	91	13.681	13.674	(0.923)	128635	5.00000	4.9	

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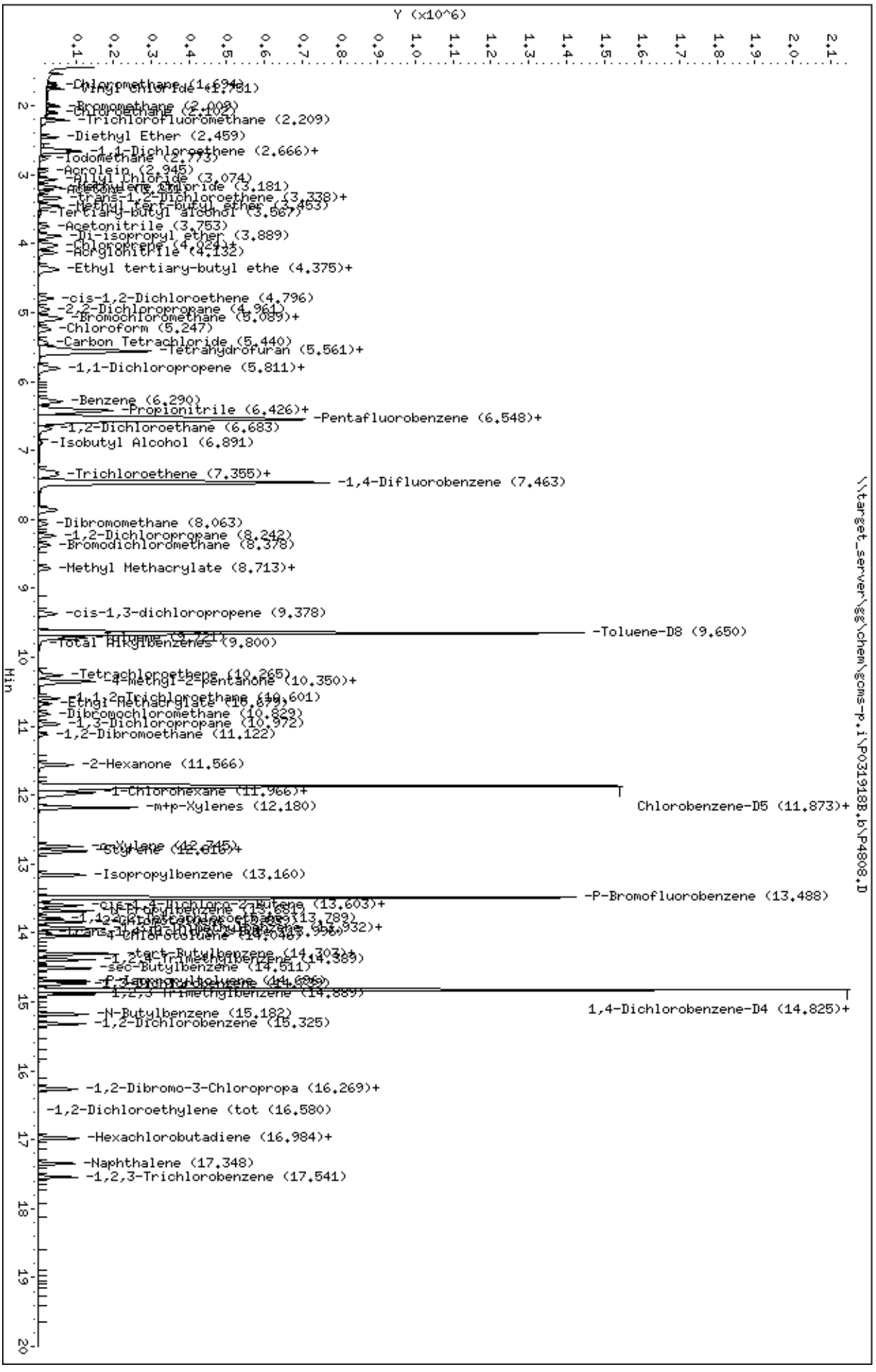
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.788	13.789	(0.930)	32530	5.00000	5.1	
85	1,3,5-Trimethylbenzene	105	13.938	13.932	(0.940)	81328	5.00000	5.2	
83	2-Chlorotoluene	91	13.838	13.839	(0.933)	74373	5.00000	4.8	
84	1,2,3-Trichloropropane	75	13.924	13.924	(0.939)	29732	5.00000	5.0	
87	4-Chlorotoluene	91	14.045	14.046	(0.947)	84442	5.00000	5.2	
88	tert-Butylbenzene	119	14.303	14.303	(0.965)	79038	5.00000	5.2	
89	Pentachloroethane	165	14.310	14.310	(0.965)	11718	5.00000	4.4	
90	1,2,4-Trimethylbenzene	105	14.388	14.389	(0.971)	86614	5.00000	5.0	
92	P-Isopropyltoluene	119	14.696	14.696	(0.991)	79229	5.00000	5.0	
93	1,3-Dichlorobenzene	146	14.739	14.739	(0.994)	55159	5.00000	5.2	
* 94	1,4-Dichlorobenzene-D4	152	14.825	14.825	(1.000)	543195	50.0000		
95	1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	61653	5.00000	5.3	
97	N-Butylbenzene	91	15.182	15.175	(1.024)	71598	5.00000	5.1	
91	sec-Butylbenzene	105	14.510	14.511	(0.979)	104273	5.00000	5.1	
99	1,2-Dichlorobenzene	146	15.325	15.325	(1.034)	52648	5.00000	5.2	
100	1,2-Dibromo-3-Chloropropane	75	16.240	16.239	(1.095)	5039	5.00000	5.5	
101	1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	32576	5.00000	4.5	
102	Hexachlorobutadiene	225	16.962	16.962	(1.144)	10618	5.00000	5.0	
103	1,2,4-Trichlorobenzene	180	16.983	16.984	(1.146)	29565	5.00000	4.7	
96	1,2,3-Trimethylbenzene	105	14.896	14.889	(1.005)	89481	5.00000	4.4	
104	Naphthalene	128	17.348	17.347	(1.170)	70949	5.00000	5.0	
105	1,2,3-Trichlorobenzene	180	17.541	17.541	(1.183)	28877	5.00000	5.0	
17	Methyl Acetate	43	3.352	3.353	(0.513)	19535	5.00000	4.6	
46	Methylcyclohexane	83	7.312	7.313	(1.119)	32409	5.00000	5.2	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Sample Info: WG225041-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P031918B.b\P4808.D
Y (x10^6)
Min
-Chloromethane (1.694)
-Vinyl Chloride (1.751)
-Bromomethane (2.009)
-Chloroethane (2.102)
-Trichlorofluoromethane (2.209)
-Diethyl Ether (2.459)
-1,1-Dichloroethene (2.666)+
-Iodomethane (2.773)
-Acrolein (2.945)
-Allyl Chloride (3.074)
-Methylene Chloride (3.181)
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.463)
-Tertiary-butyl alcohol (3.567)
-Acetonitrile (3.753)
-Di-isopropyl ether (3.889)
-Chloroprene (4.024)+
-Acrylonitrile (4.132)
-Ethyl tertiary-butyl ethe (4.375)+
-cis-1,2-Dichloroethene (4.796)
-2,2-Dichloropropane (4.961)
-Bromochloromethane (5.089)+
-Chloroform (5.247)
-Carbon Tetrachloride (5.440)
-Tetrahydrofuran (5.561)+
-1,1-Dichloropropene (5.811)+
-Benzene (6.290)
-Propionitrile (6.426)+
-Pentafluorobenzene (6.548)+
-1,2-Dichloroethane (6.683)
-Isobutyl Alcohol (6.891)
-Trichloroethene (7.355)+
-1,4-Difluorobenzene (7.463)
-Dibromomethane (8.063)
-1,2-Dichloropropane (8.242)
-Bromodichloromethane (8.378)
-Methyl Methacrylate (8.713)+
-cis-1,3-dichloropropene (9.378)
-Toluene-D8 (9.650)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.265)
-4-Methyl-2-pentanone (10.350)+
-1,1,2-Trichloroethane (10.601)
-Ethyl Methacrylate (10.677)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.122)
-2-Hexanone (11.566)
-1-Chlorohexane (11.966)+
-m+p-Xylenes (12.180)
Chlorobenzene-D5 (11.873)+
-o-Xylene (12.745)
-Styrene (12.816)+
-Isopropylbenzene (13.160)
-P-Bromofluorobenzene (13.488)
-cis-1,4-Dichloro-2-Butene (13.603)+
-n-Propylbenzene (13.688)
-1,1,2,2-Tetrachloroethane (13.789)
-2-Chlorotoluene (13.932)+
-trans-1,4-Dichloro-2-Butene (13.996)
-4-Chlorotoluene (14.046)
-tert-Butylbenzene (14.303)+
-1,2,4-Trimethylbenzene (14.389)
-sec-Butylbenzene (14.511)
-p-Isopropyltoluene (14.686)
-1,3-Dichlorobenzene (14.689)
-1,2,3-Trimethylbenzene (14.889)
1,4-Dichlorobenzene-D4 (14.825)+
-n-Butylbenzene (15.182)
-1,2-Dichlorobenzene (15.325)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.984)+
-Naphthalene (17.348)
-1,2,3-Trichlorobenzene (17.541)

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Lab Smp Id: WG225041-1
Inj Date : 19-MAR-2018 17:42 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225041-1
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P031918B.b\P8A05(62)D.m
Meth Date : 21-Mar-2018 10:23 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 17:42 Cal File: P4809.D
Als bottle: 6 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

WKS
5:51 am, Apr 04, 2018

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	4224	1.00000	0.96(a)	
2	Chloromethane	50	1.693	1.694	(0.259)	6795	1.00000	1.1	
3	Vinyl chloride	62	1.750	1.751	(0.268)	6643	1.00000	1.0	
4	Bromomethane	94	2.007	2.001	(0.307)	3385	1.00000	1.2	
5	Chloroethane	64	2.107	2.101	(0.323)	4623	1.00000	1.1	
6	Trichlorofluoromethane	101	2.215	2.209	(0.339)	9223	1.00000	1.0	
7	Diethyl Ether	59	2.458	2.459	(0.376)	4560	1.00000	0.95(a)	
19	Tertiary-butyl alcohol	59	3.558	3.560	(0.545)	743	5.00000	8.8	
8	1,1-Dichloroethene	96	2.629	2.631	(0.403)	3156	1.00000	0.77(a)	
10	Carbon Disulfide	76	2.665	2.666	(0.408)	11977	1.00000	0.86(a)	
9	Freon-113	151	2.665	2.659	(0.408)	3071	1.00000	1.0	
11	Iodomethane	142	2.772	2.766	(0.424)	4149	1.00000	0.98(a)	
12	Acrolein	56	2.944	2.945	(0.451)	4566	5.00000	4.8(a)	
15	Acetone	43	3.237	3.231	(0.496)	7118	5.00000	5.0	
45	Isobutyl Alcohol	43	6.897	6.869	(1.056)	758	20.0000	63.1(M)	M6
16	trans-1,2-Dichloroethene	96	3.337	3.338	(0.511)	3547	1.00000	0.80(a)	
13	Allyl Chloride	41	3.072	3.074	(0.470)	6813	1.00000	0.96(a)	
18	Methyl tert-butyl ether	73	3.458	3.453	(0.529)	9073	1.00000	0.71(a)	
20	Acetonitrile	41	3.759	3.753	(0.575)	8448	10.0000	12.2(a)	
21	Di-isopropyl ether	45	3.887	3.889	(0.595)	12633	1.00000	0.84(a)	
22	Chloroprene	53	4.023	4.017	(0.616)	5391	1.00000	0.78(a)	
39	Propionitrile	54	6.403	6.390	(0.980)	6784	10.0000	8.7(a)	
40	Methacrylonitrile	41	6.425	6.426	(0.984)	27992	10.0000	7.8(a)	
23	1,1-Dichloroethane	63	4.059	4.053	(0.621)	6329	1.00000	0.76(a)	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Report Date: 21-Mar-2018 10:24

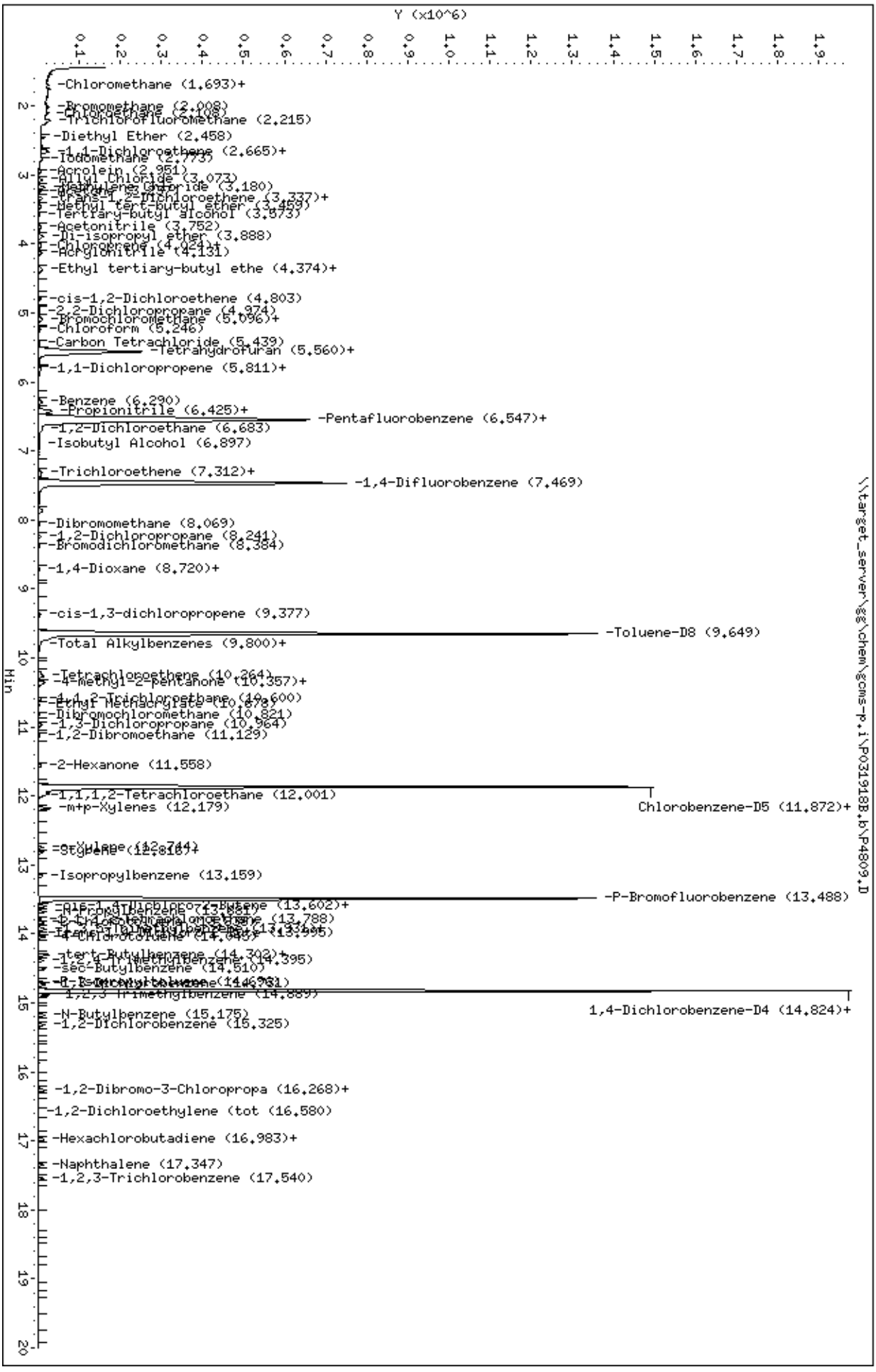
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	4.137	4.131	(0.633)	7730	5.00000	4.3(a)	
	25 Ethyl tertiary-butyl ether	59	4.373	4.368	(0.670)	8790	1.00000	2.1	
	26 Vinyl Acetate	43	4.402	4.396	(0.589)	6180	1.00000	2.2(M)	M6
	27 cis-1,2-Dichloroethene	96	4.802	4.796	(0.735)	3143	1.00000	1.1(M)	M9
	52 Methyl Methacrylate	41	8.712	8.706	(1.167)	2499	1.00000	3.3(M)	M6
	28 2,2-Dichloropropane	77	4.952	4.954	(0.758)	4223	1.00000	0.75(TaM)	M9
	31 Chloroform	83	5.245	5.240	(0.803)	6254	1.00000	0.79(a)	
	32 Carbon Tetrachloride	117	5.446	5.440	(0.729)	4306	1.00000	0.77(a)	
	33 Tetrahydrofuran	42	5.531	5.497	(0.847)	4871	5.00000	8.4	
$	34 Dibromofluoromethane	113	5.560	5.561	(0.851)	262099	50.0000	49.7	
	35 1,1,1-Trichloroethane	97	5.560	5.576	(0.851)	4921	1.00000	0.72(a)	
	37 1,1-Dichloropropene	75	5.796	5.797	(0.776)	4419	1.00000	0.70(a)	
	36 2-Butanone	43	5.817	5.819	(0.891)	7957	5.00000	3.5(a)	
	38 Benzene	78	6.289	6.290	(0.842)	14586	1.00000	0.77(a)	
*	41 Pentafluorobenzene	168	6.532	6.533	(1.000)	537045	50.0000		
	30 Cyclohexane	56	5.067	5.075	(0.776)	4762	1.00000	1.8(M)	M9
	53 Ethyl Methacrylate	69	10.685	10.679	(1.431)	3092	1.00000	3.3	
$	42 1,2-Dichloroethane-D4	65	6.561	6.562	(1.004)	373887	50.0000	50.0	
	43 Tertiary-amyl methyl ether	73	6.561	6.562	(1.004)	9546	1.00000	2.5(M)	M6
	44 1,2-Dichloroethane	62	6.682	6.684	(0.895)	6964	1.00000	0.98(a)	
	47 Trichloroethene	95	7.354	7.363	(0.985)	3355	1.00000	0.75(a)	
*	48 1,4-Difluorobenzene	114	7.468	7.463	(1.000)	923260	50.0000		
	49 Dibromomethane	93	8.062	8.063	(1.079)	1859	1.00000	1.9	
	50 1,2-Dichloropropane	63	8.240	8.242	(1.103)	3524	1.00000	0.74(Ta)	
	51 Bromodichloromethane	83	8.391	8.378	(1.123)	4358	1.00000	0.72(Ta)	
	57 cis-1,3-dichloropropene	75	9.377	9.378	(1.256)	4306	1.00000	2.1	
	54 1,4-Dioxane	88	8.727	8.721	(1.168)	1626	20.0000	31.5	
$	58 Toluene-D8	98	9.649	9.650	(1.292)	1160208	50.0000	49.6	
	59 Toluene	92	9.727	9.721	(1.302)	9807	1.00000	0.80(a)	WAS
	61 4-methyl-2-pentanone	43	10.349	10.343	(1.386)	12745	5.00000	10.2	
	60 Tetrachloroethene	164	10.270	10.265	(0.865)	3168	1.00000	0.91(a)	*5:51 am, Apr 04, 2018*
	62 trans-1,3-Dichloropropene	75	10.378	10.379	(1.390)	4225	1.00000	2.6	
	63 1,1,2-Trichloroethane	83	10.599	10.593	(1.419)	2442	1.00000	1.9	
	64 Dibromochloromethane	129	10.821	10.829	(0.911)	2759	1.00000	2.0	
	65 1,3-Dichloropropane	76	10.971	10.972	(0.924)	6034	1.00000	0.71(a)	
	66 1,2-Dibromoethane	107	11.128	11.122	(1.490)	2865	1.00000	2.1(T)	
	67 2-Hexanone	43	11.557	11.558	(0.974)	7169	5.00000	8.7	
*	68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	970678	50.0000		
	69 Chlorobenzene	112	11.893	11.894	(1.002)	11548	1.00000	0.85(a)	
	70 1-Chlorohexane	91	11.922	11.923	(1.004)	4612	1.00000	0.71(a)	
	71 Ethylbenzene	106	11.965	11.966	(1.008)	4883	1.00000	1.9	
	72 1,1,1,2-Tetrachloroethane	131	12.000	12.002	(1.011)	3294	1.00000	0.73(a)	
	73 m+p-Xylenes	106	12.186	12.180	(1.026)	10731	2.00000	3.6	
	74 o-Xylene	106	12.737	12.745	(1.073)	4276	1.00000	1.7	
	75 Styrene	104	12.822	12.817	(1.080)	5896	1.00000	2.3	
	76 Bromoform	173	12.822	12.817	(1.080)	1537	1.00000	2.7	
	77 Isopropylbenzene	105	13.158	13.160	(0.888)	9742	1.00000	1.4	
$	78 P-Bromofluorobenzene	95	13.487	13.488	(1.806)	486789	50.0000	47.8	
	79 cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	1859	1.00000	2.4	
	86 trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	1517	1.00000	0.87(a)	
	80 Bromobenzene	156	13.601	13.596	(0.918)	4078	1.00000	0.79(a)	
	81 N-Propylbenzene	91	13.680	13.674	(0.923)	17065	1.00000	0.70(a)	
	82 1,1,2,2-Tetrachloroethane	83	13.787	13.789	(0.930)	4543	1.00000	0.76(a)	
	85 1,3,5-Trimethylbenzene	105	13.930	13.932	(0.940)	8907	1.00000	1.7	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Report Date: 21-Mar-2018 10:24

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
83	2-Chlorotoluene	91	13.837	13.839	(0.933)	10450	1.00000	0.71(a)	
84	1,2,3-Trichloropropane	75	13.923	13.924	(0.939)	4008	1.00000	0.73(a)	
87	4-Chlorotoluene	91	14.045	14.046	(0.947)	10824	1.00000	1.2	
88	tert-Butylbenzene	119	14.302	14.303	(0.965)	9422	1.00000	1.9	
90	1,2,4-Trimethylbenzene	105	14.395	14.389	(0.971)	8467	1.00000	1.4	
92	P-Isopropyltoluene	119	14.695	14.696	(0.991)	8320	1.00000	1.7	
93	1,3-Dichlorobenzene	146	14.738	14.739	(0.994)	7750	1.00000	0.78(a)	
* 94	1,4-Dichlorobenzene-D4	152	14.824	14.825	(1.000)	508194	50.0000		
95	1,4-Dichlorobenzene	146	14.845	14.847	(1.001)	9930	1.00000	0.91(a)	
97	N-Butylbenzene	91	15.181	15.175	(1.024)	8451	1.00000	1.7	
91	sec-Butylbenzene	105	14.509	14.511	(0.979)	11786	1.00000	1.3	
99	1,2-Dichlorobenzene	146	15.324	15.325	(1.034)	7278	1.00000	0.77(a)	
100	1,2-Dibromo-3-Chloropropane	75	16.232	16.239	(1.095)	531	1.00000	2.0	
101	1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	6108	1.00000	0.91(a)	
102	Hexachlorobutadiene	225	16.968	16.962	(1.145)	1822	1.00000	0.92(a)	
103	1,2,4-Trichlorobenzene	180	16.990	16.984	(1.146)	4942	1.00000	0.84(a)	
96	1,2,3-Trimethylbenzene	105	14.888	14.889	(1.004)	15724	1.00000	0.83(a)	
104	Naphthalene	128	17.347	17.347	(1.170)	9897	1.00000	1.9	
105	1,2,3-Trichlorobenzene	180	17.540	17.541	(1.183)	4788	1.00000	0.88(a)	
17	Methyl Acetate	43	3.358	3.353	(0.514)	4116	1.00000	1.0	
46	Methylcyclohexane	83	7.304	7.313	(1.118)	5259	1.00000	2.2	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Date : 19-MAR-2018 17:42
Client ID:
Sample Info: WG225041-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Y (x10^6)
Min
-Chloromethane (1.693)+
-Bromomethane (2.008)
-Chloroethane (2.106)
-Trichlorofluoromethane (2.215)
-Diethyl Ether (2.458)
-1,1-Dichloroethene (2.665)+
-Iodomethane (2.773)
-Acrolein (2.951)
-Allyl Chloride (3.073)
-Methylene Chloride (3.180)
-trans-1,2-Dichloroethene (3.337)+
-Methyl tert-butyl ether (3.459)
-Tertiary-butyl alcohol (3.873)
-Acetonitrile (3.752)
-Di-isopropyl ether (3.888)
-Chloroprene (4.024)+
-Acrylonitrile (4.131)
-Ethyl tertiary-butyl ethe (4.374)+
-cis-1,2-Dichloroethene (4.803)
-2,2-Dichloropropane (4.974)
-Bromochloromethane (5.096)+
-Chloroform (5.246)
-Carbon Tetrachloride (5.439)
-Tetrahydrofuran (5.560)+
-1,1-Dichloropropene (5.811)+
-Benzene (6.290)
-Propionitrile (6.425)+
-Pentafluorobenzene (6.547)+
-1,2-Dichloroethane (6.683)
-Isobutyl Alcohol (6.897)
-Trichloroethene (7.312)+
-1,4-Difluorobenzene (7.469)
-Dibromomethane (8.069)
-1,2-Dichloropropane (8.241)
-Bromodichloromethane (8.384)
-1,4-Dioxane (8.720)+
-cis-1,3-dichloropropene (9.377)
-Toluene-D8 (9.649)
-Total Alkylbenzenes (9.800)+
-Tetrachloroethene (10.264)
-4-methyl-2-pentanone (10.357)+
-1,1,2-Trichloroethane (10.600)
-Ethyl Methacrylate (10.678)
-Dibromochloromethane (10.821)
-1,3-Dichloropropane (10.964)
-1,2-Dibromoethane (11.129)
-2-Hexanone (11.558)
-1,1,1,2-Tetrachloroethane (12.001)
-m+p-Xylenes (12.179)
Chlorobenzene-D5 (11.872)+
-o-Xylene (12.744)
-Styrene (12.816)+
-Isopropylbenzene (13.159)
-P-Bromofluorobenzene (13.488)
-cis-1,4-Dichloro-2-Butene (13.602)+
-N-Propylbenzene (13.681)
-2-Chlorotoluene (13.788)
-1,3,5-Trimethylbenzene (13.937)
-4-Chlorotoluene (14.046)
-tert-Butylbenzene (14.302)+
-1,2,4-Trimethylbenzene (14.395)
-sec-Butylbenzene (14.510)
-1,2,3-Trimethylbenzene (14.889)
1,4-Dichlorobenzene-D4 (14.824)+
-N-Butylbenzene (15.175)
-1,2-Dichlorobenzene (15.325)
-1,2-Dibromo-3-Chloropropa (16.268)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.983)+
-Naphthalene (17.347)
-1,2,3-Trichlorobenzene (17.540)

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4810.D
Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P031918B.b\P4810.D
Lab Smp Id: WG225041-6
Inj Date : 19-MAR-2018 18:17 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225041-6
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P031918B.b\P8A05(62)D.m
Meth Date : 21-Mar-2018 10:23 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:17 Cal File: P4810.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.537	1.537	(0.235)	710877	150.000	147	
2	Chloromethane	50	1.694	1.694	(0.259)	992244	150.000	144	
3	Vinyl chloride	62	1.751	1.751	(0.268)	1060469	150.000	146	
4	Bromomethane	94	2.001	2.001	(0.306)	465051	150.000	145	
5	Chloroethane	64	2.102	2.101	(0.322)	681013	150.000	147	
6	Trichlorofluoromethane	101	2.209	2.209	(0.338)	1503238	150.000	151	
7	Diethyl Ether	59	2.459	2.459	(0.376)	808704	150.000	154	
19	Tertiary-butyl alcohol	59	3.560	3.560	(0.545)	189948	750.000	736	
8	1,1-Dichloroethene	96	2.638	2.631	(0.404)	719675	150.000	160	
10	Carbon Disulfide	76	2.666	2.666	(0.408)	2431680	150.000	159	
9	Freon-113	151	2.659	2.659	(0.407)	516737	150.000	154	
11	Iodomethane	142	2.766	2.766	(0.423)	696003	150.000	149	
12	Acrolein	56	2.945	2.945	(0.451)	862790	750.000	829	
14	Methylene Chloride	84	3.174	3.181	(0.486)	819335	150.000	150	
15	Acetone	43	3.231	3.231	(0.495)	1097581	750.000	708	
45	Isobutyl Alcohol	43	6.869	6.869	(1.051)	395560	3000.00	2920	
16	trans-1,2-Dichloroethene	96	3.338	3.338	(0.511)	784829	150.000	161	
13	Allyl Chloride	41	3.074	3.074	(0.471)	1178848	150.000	151	
18	Methyl tert-butyl ether	73	3.453	3.453	(0.528)	2334279	150.000	166	
20	Acetonitrile	41	3.746	3.753	(0.573)	1047323	1500.00	1370	
21	Di-isopropyl ether	45	3.889	3.889	(0.595)	2777059	150.000	168	
22	Chloroprene	53	4.017	4.017	(0.615)	1276245	150.000	169	
39	Propionitrile	54	6.405	6.390	(0.980)	1415227	1500.00	1660	
40	Methacrylonitrile	41	6.426	6.426	(0.984)	6724905	1500.00	1710	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4810.D
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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	4.046	4.053	(0.619)	1470360	150.000	162	
	24 Acrylonitrile	52	4.132	4.131	(0.632)	1626594	750.000	825	
	25 Ethyl tertiary-butyl ether	59	4.367	4.368	(0.668)	2500609	150.000	150	
	26 Vinyl Acetate	43	4.396	4.396	(0.589)	1569601	150.000	147	
	27 cis-1,2-Dichloroethene	96	4.796	4.796	(0.734)	838953	150.000	150	
	52 Methyl Methacrylate	41	8.706	8.706	(1.167)	930808	150.000	152	
	28 2,2-Dichloropropane	77	4.954	4.954	(0.758)	1030555	150.000	167	
	29 Bromochloromethane	128	5.104	5.104	(0.781)	341318	150.000	150	
	31 Chloroform	83	5.247	5.240	(0.803)	1382887	150.000	160	
	32 Carbon Tetrachloride	117	5.440	5.440	(0.729)	1009537	150.000	167	
	33 Tetrahydrofuran	42	5.497	5.497	(0.841)	1388316	750.000	751	
$	34 Dibromofluoromethane	113	5.561	5.561	(0.851)	292594	50.0000	50.5	
	35 1,1,1-Trichloroethane	97	5.575	5.576	(0.853)	1213447	150.000	162	
	37 1,1-Dichloropropene	75	5.804	5.797	(0.778)	1153371	150.000	170	
	36 2-Butanone	43	5.819	5.819	(0.891)	2066899	750.000	824	
	38 Benzene	78	6.290	6.290	(0.843)	3254874	150.000	159(M)	M6
*	41 Pentafluorobenzene	168	6.533	6.533	(1.000)	589892	50.0000		
	30 Cyclohexane	56	5.075	5.075	(0.777)	1375358	150.000	152	
	53 Ethyl Methacrylate	69	10.679	10.679	(1.431)	1406481	150.000	152	
$	42 1,2-Dichloroethane-D4	65	6.562	6.562	(1.004)	426909	50.0000	52.0	
	43 Tertiary-amyl methyl ether	73	6.562	6.562	(1.004)	2451560	150.000	151	
	44 1,2-Dichloroethane	62	6.691	6.684	(0.897)	1188662	150.000	154	
	47 Trichloroethene	95	7.362	7.363	(0.987)	806032	150.000	166	
*	48 1,4-Difluorobenzene	114	7.463	7.463	(1.000)	1003358	50.0000		
	49 Dibromomethane	93	8.063	8.063	(1.080)	519675	150.000	152	
	50 1,2-Dichloropropane	63	8.242	8.242	(1.104)	863887	150.000	167	
	51 Bromodichloromethane	83	8.377	8.378	(1.123)	1128093	150.000	172	
	57 cis-1,3-dichloropropene	75	9.378	9.378	(1.257)	1560847	150.000	152	WAS
	54 1,4-Dioxane	88	8.713	8.721	(1.168)	45480	3000.00	812	
$	58 Toluene-D8	98	9.650	9.650	(1.293)	1276847	50.0000	50.2	*5:51 am, Apr 04, 2018*
	59 Toluene	92	9.721	9.721	(1.303)	2199880	150.000	166	
	61 4-methyl-2-pentanone	43	10.350	10.343	(1.387)	5048920	750.000	755	
	60 Tetrachloroethene	164	10.265	10.265	(0.865)	639051	150.000	159	
	62 trans-1,3-Dichloropropene	75	10.379	10.379	(1.391)	1463346	150.000	152	
	63 1,1,2-Trichloroethane	83	10.593	10.593	(1.420)	680134	150.000	152	
	64 Dibromochloromethane	129	10.829	10.829	(0.912)	873738	150.000	151	
	65 1,3-Dichloropropane	76	10.972	10.972	(0.924)	1601637	150.000	164	
	66 1,2-Dibromoethane	107	11.122	11.122	(1.490)	831807	150.000	152	
	67 2-Hexanone	43	11.558	11.558	(0.974)	3488947	750.000	751	
*	68 Chlorobenzene-D5	117	11.873	11.873	(1.000)	1120989	50.0000		
	69 Chlorobenzene	112	11.894	11.894	(1.002)	2487348	150.000	159	
	70 1-Chlorohexane	91	11.923	11.923	(1.004)	1273130	150.000	170	
	71 Ethylbenzene	106	11.966	11.966	(1.008)	1396948	150.000	152	
	72 1,1,1,2-Tetrachloroethane	131	12.002	12.002	(1.011)	892063	150.000	171	
	73 m+p-Xylenes	106	12.180	12.180	(1.026)	3512534	300.000	303	
	74 o-Xylene	106	12.745	12.745	(1.073)	1635274	150.000	151	
	75 Styrene	104	12.816	12.817	(1.079)	2945626	150.000	152	
	76 Bromoform	173	12.816	12.817	(1.079)	630831	150.000	152	
	77 Isopropylbenzene	105	13.160	13.160	(0.888)	3939388	150.000	151	
$	78 P-Bromofluorobenzene	95	13.488	13.488	(1.807)	567208	50.0000	51.2	
	79 cis-1,4-Dichloro-2-Butene	53	13.610	13.610	(0.918)	482141	150.000	152	
	86 trans-1,4-Dichloro-2-Butene	53	13.996	13.996	(0.944)	344791	150.000	163	
	80 Bromobenzene	156	13.596	13.596	(0.917)	998483	150.000	161	
	81 N-Propylbenzene	91	13.681	13.674	(0.923)	4779081	150.000	162	

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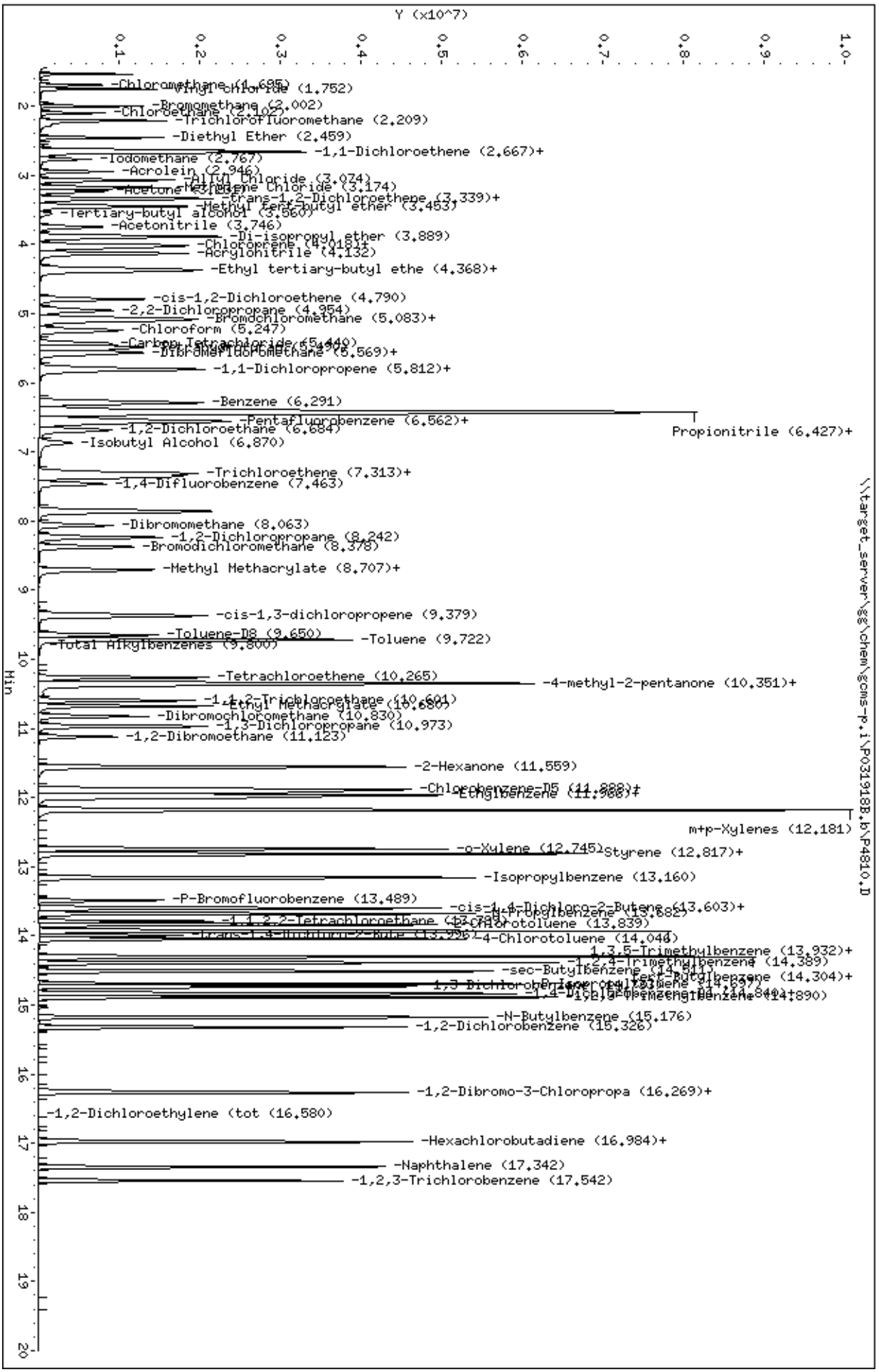
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	82 1,1,2,2-Tetrachloroethane	83	13.789	13.789	(0.930)	1178270	150.000	162	
	85 1,3,5-Trimethylbenzene	105	13.931	13.932	(0.940)	3474073	150.000	151	
	83 2-Chlorotoluene	91	13.839	13.839	(0.933)	2947847	150.000	167	
	84 1,2,3-Trichloropropane	75	13.924	13.924	(0.939)	1111259	150.000	167	
	87 4-Chlorotoluene	91	14.046	14.046	(0.947)	3147615	150.000	151	
	88 tert-Butylbenzene	119	14.303	14.303	(0.965)	3511430	150.000	152	
	89 Pentachloroethane	165	14.310	14.310	(0.965)	524779	150.000	174	
	90 1,2,4-Trimethylbenzene	105	14.389	14.389	(0.971)	3569647	150.000	151	
	92 P-Isopropyltoluene	119	14.696	14.696	(0.991)	3556952	150.000	151	
	93 1,3-Dichlorobenzene	146	14.739	14.739	(0.994)	1930965	150.000	161	
*	94 1,4-Dichlorobenzene-D4	152	14.825	14.825	(1.000)	613142	50.0000		
	95 1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	2009524	150.000	153	
	97 N-Butylbenzene	91	15.175	15.175	(1.024)	3179931	150.000	151	
	91 sec-Butylbenzene	105	14.510	14.511	(0.979)	4141257	150.000	151	
	99 1,2-Dichlorobenzene	146	15.325	15.325	(1.034)	1851925	150.000	162	
	100 1,2-Dibromo-3-Chloropropane	75	16.240	16.239	(1.095)	216989	150.000	152	
	101 1,3,5-Trichlorobenzene	180	16.269	16.268	(1.097)	1326161	150.000	164	
	102 Hexachlorobutadiene	225	16.962	16.962	(1.144)	377179	150.000	158	
	103 1,2,4-Trichlorobenzene	180	16.984	16.984	(1.146)	1191610	150.000	168	
	96 1,2,3-Trimethylbenzene	105	14.889	14.889	(1.004)	3755446	150.000	165	
	104 Naphthalene	128	17.341	17.347	(1.170)	3227573	150.000	150	
	105 1,2,3-Trichlorobenzene	180	17.541	17.541	(1.183)	1035736	150.000	158	
	17 Methyl Acetate	43	3.352	3.353	(0.513)	724370	150.000	164	
	46 Methylcyclohexane	83	7.312	7.313	(1.119)	1397126	150.000	152	

QC Flag Legend

M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4810.D
Date : 19-MAR-2018 18:17
Client ID:
Sample Info: WG225041-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P031918B.b\P4810.D
Y (x10^7)
Min
-Chloromethane (1.685)
-Vinyl Chloride (1.752)
-Bromomethane (2.002)
-Chloroethane (2.102)
-Trichlorofluoromethane (2.209)
-Diethyl Ether (2.459)
-1,1-Dichloroethene (2.667)+
-Iodomethane (2.767)
-Acrolein (2.946)
-Allyl Chloride (3.074)
-Methylene Chloride (3.174)
-Acetone (3.196)
-trans-1,2-Dichloroethene (3.339)+
-Methyl tert-butyl ether (3.453)
-Tertiary-butyl alcohol (3.560)
-Acetonitrile (3.746)
-Di-isopropyl ether (3.889)
-Chloroprene (4.018)+
-Acrylonitrile (4.132)
-Ethyl tertiary-butyl ethe (4.368)+
-cis-1,2-Dichloroethene (4.790)
-2,2-Dichloropropane (4.954)
-Bromochloromethane (5.083)+
-Chloroform (5.247)
-Carbon Tetrachloride (5.440)
-Dibromofluoromethane (5.569)+
-1,1-Dichloropropene (5.812)+
-Benzene (6.291)
-Pentafluorobenzene (6.562)+
-1,2-Dichloroethane (6.684)
Propionitrile (6.427)+
-Isobutyl Alcohol (6.870)
-Trichloroethene (7.313)+
-1,4-Difluorobenzene (7.463)
-Dibromomethane (8.063)
-1,2-Dichloropropane (8.242)
-Bromodichloromethane (8.378)
-Methyl Methacrylate (8.707)+
-cis-1,3-dichloropropene (9.379)
-Toluene-D8 (9.650)
-Toluene (9.722)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.265)
-4-methyl-2-pentanone (10.351)+
-1,1,2-Trichloroethane (10.601)
-Ethyl Methacrylate (10.680)
-Dibromochloromethane (10.830)
-1,3-Dichloropropane (10.973)
-1,2-Dibromoethane (11.123)
-2-Hexanone (11.559)
-Chlorobenzene-D5 (11.888)+
-Ethylbenzene (11.966)+
m+p-Xylenes (12.181)
-o-Xylene (12.745)
Styrene (12.817)+
-Isopropylbenzene (13.160)
-P-Bromofluorobenzene (13.489)
-cis-1,4-Dichloro-2-Butene (13.603)+
-n-Propylbenzene (13.682)
-1,1,2,2-Tetrachloroethane (13.748)
-2-Chlorotoluene (13.839)
-trans-1,4-Dichloro-2-Bute (13.996)
-4-Chlorotoluene (14.044)
1,3,5-Trimethylbenzene (13.932)+
-1,2,4-Trimethylbenzene (14.389)
-sec-Butylbenzene (14.541)
-tert-Butylbenzene (14.304)+
1,3-Dichloropropylene (14.637)
-1,4-Dichlorobenzene-D4 (14.840)+
-1,3,5-Trimethylbenzene (14.890)
-N-Butylbenzene (15.176)
-1,2-Dichlorobenzene (15.326)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.984)+
-Naphthalene (17.342)
-1,2,3-Trichlorobenzene (17.542)

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4811.D
Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P031918B.b\P4811.D
Lab Smp Id: WG225041-5
Inj Date : 19-MAR-2018 18:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225041-5
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P031918B.b\P8A05(62)D.m
Meth Date : 21-Mar-2018 10:23 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:51 Cal File: P4811.D
Als bottle: 8 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

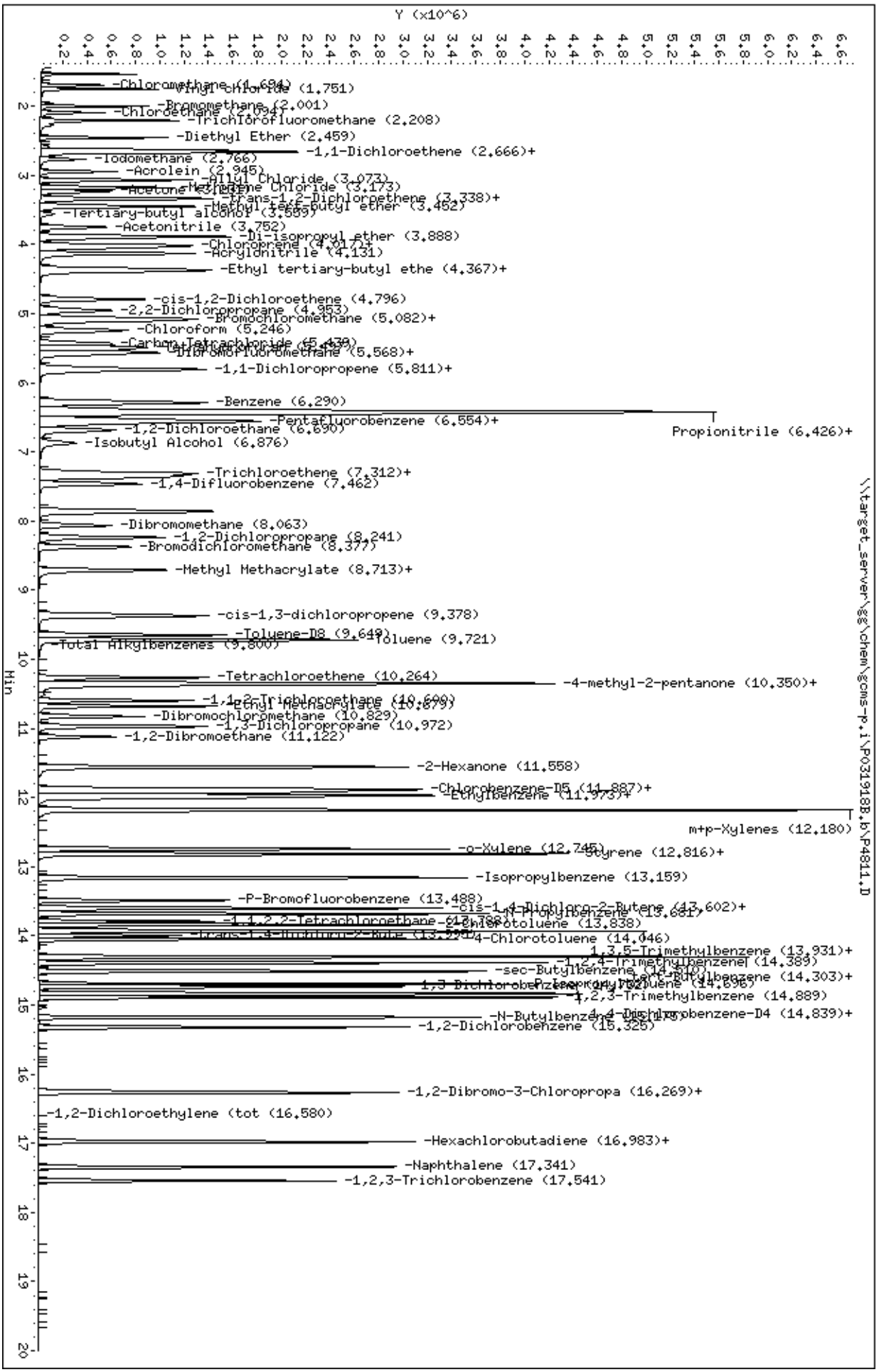
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	496954	100.000	98.8	
2	Chloromethane	50	1.693	1.694	(0.259)	689721	100.000	96.1	
3	Vinyl chloride	62	1.750	1.751	(0.268)	729594	100.000	97.0	
4	Bromomethane	94	2.001	2.001	(0.306)	325934	100.000	97.7	
5	Chloroethane	64	2.094	2.101	(0.321)	425975	100.000	88.6	
6	Trichlorofluoromethane	101	2.208	2.209	(0.338)	991652	100.000	96.1	
7	Diethyl Ether	59	2.458	2.459	(0.376)	557920	100.000	102	
19	Tertiary-butyl alcohol	59	3.559	3.560	(0.545)	150377	500.000	529	
8	1,1-Dichloroethene	96	2.630	2.631	(0.403)	470494	100.000	101	
10	Carbon Disulfide	76	2.665	2.666	(0.408)	1614843	100.000	102	
9	Freon-113	151	2.658	2.659	(0.407)	343272	100.000	98.7	
11	Iodomethane	142	2.765	2.766	(0.423)	427479	100.000	88.3	
12	Acrolein	56	2.944	2.945	(0.451)	600708	500.000	556	
14	Methylene Chloride	84	3.173	3.181	(0.486)	568786	100.000	100	
15	Acetone	43	3.230	3.231	(0.495)	790191	500.000	490	
45	Isobutyl Alcohol	43	6.876	6.869	(1.053)	315499	2000.00	2150	
16	trans-1,2-Dichloroethene	96	3.337	3.338	(0.511)	530227	100.000	105	
13	Allyl Chloride	41	3.066	3.074	(0.469)	879188	100.000	108	
18	Methyl tert-butyl ether	73	3.452	3.453	(0.528)	1652901	100.000	113	
20	Acetonitrile	41	3.752	3.753	(0.574)	747066	1000.00	942	
21	Di-isopropyl ether	45	3.888	3.889	(0.595)	1932123	100.000	112	
22	Chloroprene	53	4.016	4.017	(0.615)	880242	100.000	112	
39	Propionitrile	54	6.397	6.390	(0.979)	978981	1000.00	1100	
40	Methacrylonitrile	41	6.425	6.426	(0.984)	4629293	1000.00	1130	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4811.D
Report Date: 21-Mar-2018 10:24

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	4.045	4.053	(0.619)	1003977	100.000	106	
	24	Acrylonitrile	52	4.131	4.131	(0.632)	1115302	500.000	544	
	25	Ethyl tertiary-butyl ether	59	4.367	4.368	(0.668)	1737317	100.000	101	
	26	Vinyl Acetate	43	4.395	4.396	(0.589)	1154637	100.000	107	
	27	cis-1,2-Dichloroethene	96	4.796	4.796	(0.734)	577626	100.000	99.8	
	52	Methyl Methacrylate	41	8.705	8.706	(1.166)	618136	100.000	98.7	
	28	2,2-Dichloropropane	77	4.953	4.954	(0.758)	665340	100.000	104	
	29	Bromochloromethane	128	5.103	5.104	(0.781)	229318	100.000	96.7	
	31	Chloroform	83	5.239	5.240	(0.802)	947196	100.000	105	
	32	Carbon Tetrachloride	117	5.439	5.440	(0.728)	679671	100.000	108	
	33	Tetrahydrofuran	42	5.496	5.497	(0.841)	961743	500.000	503	
$	34	Dibromofluoromethane	113	5.560	5.561	(0.851)	304448	50.0000	50.5	
	35	1,1,1-Trichloroethane	97	5.567	5.576	(0.852)	823327	100.000	106	
	37	1,1-Dichloropropene	75	5.803	5.797	(0.777)	758102	100.000	107	
	36	2-Butanone	43	5.818	5.819	(0.891)	1439671	500.000	552	
	38	Benzene	78	6.289	6.290	(0.842)	2273795	100.000	107	
*	41	Pentafluorobenzene	168	6.532	6.533	(1.000)	613038	50.0000		
	30	Cyclohexane	56	5.074	5.075	(0.777)	900807	100.000	96.4	
	53	Ethyl Methacrylate	69	10.678	10.679	(1.430)	941105	100.000	99.2	
$	42	1,2-Dichloroethane-D4	65	6.561	6.562	(1.004)	434562	50.0000	50.9	
	43	Tertiary-amyl methyl ether	73	6.568	6.562	(1.005)	1678953	100.000	100	
	44	1,2-Dichloroethane	62	6.690	6.684	(0.896)	809993	100.000	101	
	47	Trichloroethene	95	7.362	7.363	(0.986)	538587	100.000	107	
*	48	1,4-Difluorobenzene	114	7.469	7.463	(1.000)	1040239	50.0000		
	49	Dibromomethane	93	8.069	8.063	(1.080)	347438	100.000	98.4	
	50	1,2-Dichloropropane	63	8.241	8.242	(1.103)	588177	100.000	110	
	51	Bromodichloromethane	83	8.377	8.378	(1.122)	754177	100.000	111	
	57	cis-1,3-dichloropropene	75	9.377	9.378	(1.256)	1040076	100.000	98.3	
	54	1,4-Dioxane	88	8.713	8.721	(1.167)	106273	2000.00	1830	
$	58	Toluene-D8	98	9.649	9.650	(1.292)	1330543	50.0000	50.5	
	59	Toluene	92	9.720	9.721	(1.301)	1471695	100.000	107	
	61	4-methyl-2-pentanone	43	10.350	10.343	(1.386)	3448173	500.000	500	
	60	Tetrachloroethene	164	10.264	10.265	(0.865)	415499	100.000	102	
	62	trans-1,3-Dichloropropene	75	10.378	10.379	(1.389)	964476	100.000	97.8	
	63	1,1,2-Trichloroethane	83	10.600	10.593	(1.419)	453419	100.000	98.2	
	64	Dibromochloromethane	129	10.828	10.829	(0.912)	575976	100.000	99.1	
	65	1,3-Dichloropropane	76	10.971	10.972	(0.924)	1081874	100.000	109	
	66	1,2-Dibromoethane	107	11.121	11.122	(1.489)	557288	100.000	98.6	
	67	2-Hexanone	43	11.558	11.558	(0.974)	2356981	500.000	503	
*	68	Chlorobenzene-D5	117	11.872	11.873	(1.000)	1135937	50.0000		
	69	Chlorobenzene	112	11.893	11.894	(1.002)	1635429	100.000	103	
	70	1-Chlorohexane	91	11.922	11.923	(1.004)	801478	100.000	106	
	71	Ethylbenzene	106	11.972	11.966	(1.008)	903630	100.000	97.5	
	72	1,1,1,2-Tetrachloroethane	131	12.001	12.002	(1.011)	576609	100.000	109	
	73	m+p-Xylenes	106	12.179	12.180	(1.026)	2306445	200.000	197	
	74	o-Xylene	106	12.744	12.745	(1.073)	1079294	100.000	98.9	
	75	Styrene	104	12.816	12.817	(1.079)	1928413	100.000	98.7	
	76	Bromoform	173	12.816	12.817	(1.079)	416610	100.000	99.6	
	77	Isopropylbenzene	105	13.159	13.160	(0.888)	2599648	100.000	98.6	
$	78	P-Bromofluorobenzene	95	13.487	13.488	(1.806)	592170	50.0000	51.6	
	79	cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	315672	100.000	98.6	
	86	trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	231964	100.000	108	
	80	Bromobenzene	156	13.595	13.596	(0.917)	664066	100.000	105	
	81	N-Propylbenzene	91	13.680	13.674	(0.923)	3249331	100.000	109	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4811.D
Report Date: 21-Mar-2018 10:24

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.788	13.789	(0.930)	792541	100.000	108	
85	1,3,5-Trimethylbenzene	105	13.938	13.932	(0.940)	2293197	100.000	98.8	
83	2-Chlorotoluene	91	13.838	13.839	(0.933)	1958042	100.000	109	
84	1,2,3-Trichloropropane	75	13.924	13.924	(0.939)	738306	100.000	110	
87	4-Chlorotoluene	91	14.045	14.046	(0.947)	2097332	100.000	99.2	
88	tert-Butylbenzene	119	14.302	14.303	(0.965)	2302266	100.000	98.5	
89	Pentachloroethane	165	14.309	14.310	(0.965)	345736	100.000	113	
90	1,2,4-Trimethylbenzene	105	14.388	14.389	(0.971)	2381876	100.000	99.4	
92	P-Isopropyltoluene	119	14.695	14.696	(0.991)	2338969	100.000	98.5	
93	1,3-Dichlorobenzene	146	14.738	14.739	(0.994)	1273552	100.000	104	
* 94	1,4-Dichlorobenzene-D4	152	14.824	14.825	(1.000)	621930	50.0000		
95	1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	1344006	100.000	101	
97	N-Butylbenzene	91	15.174	15.175	(1.024)	2083483	100.000	98.3	
91	sec-Butylbenzene	105	14.510	14.511	(0.979)	2737973	100.000	98.7	
99	1,2-Dichlorobenzene	146	15.325	15.325	(1.034)	1222400	100.000	105	
100	1,2-Dibromo-3-Chloropropane	75	16.239	16.239	(1.095)	141057	100.000	98.1	
101	1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	875820	100.000	107	
102	Hexachlorobutadiene	225	16.961	16.962	(1.144)	244422	100.000	101	
103	1,2,4-Trichlorobenzene	180	16.983	16.984	(1.146)	773746	100.000	107	
96	1,2,3-Trimethylbenzene	105	14.888	14.889	(1.004)	2568046	100.000	111	
104	Naphthalene	128	17.347	17.347	(1.170)	2229245	100.000	102	
105	1,2,3-Trichlorobenzene	180	17.540	17.541	(1.183)	691792	100.000	104	
17	Methyl Acetate	43	3.352	3.353	(0.513)	515649	100.000	112	
46	Methylcyclohexane	83	7.312	7.313	(1.119)	938512	100.000	98.5	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-Chloromethane (1.694)
Vinyl chloride (1.751)
-Bromomethane (2.001)
-Chloroethane (2.054)
-Trichlorofluoromethane (2.208)
-Diethyl Ether (2.459)
-1,1-Dichloroethene (2.666)+
-Iodomethane (2.766)
-Acrolein (2.945)
-Allyl Chloride (3.073)
-Methylene Chloride (3.173)
-Acetone (3.182)
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.462)
-Tertiary-butyl alcohol (3.589)
-Acetonitrile (3.752)
-Di-isopropyl ether (3.888)
-Chloroprene (4.017)+
-Acrylonitrile (4.131)
-Ethyl tertiary-butyl ethe (4.367)+
-cis-1,2-Dichloroethene (4.796)
-2,2-Dichloropropane (4.953)
-Bromochloromethane (5.082)+
-Chloroform (5.246)
-Carbon Tetrachloride (5.439)
-Dibromofluoromethane (5.568)+
-1,1-Dichloropropene (5.811)+
-Benzene (6.290)
-Pentafluorobenzene (6.554)+
-1,2-Dichloroethane (6.690)
Propionitrile (6.426)+
-Isobutyl Alcohol (6.876)
-Trichloroethene (7.312)+
-1,4-Difluorobenzene (7.462)
-Dibromomethane (8.063)
-1,2-Dichloropropane (8.241)
-Bromodichloromethane (8.377)
-Methyl Methacrylate (8.713)+
-cis-1,3-dichloropropene (9.378)
-Toluene-D8 (9.649)
Toluene (9.721)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.264)
-4-methyl-2-pentanone (10.350)+
-1,1,2-Trichloroethane (10.609)
-Ethyl Methacrylate (10.679)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.122)
-2-Hexanone (11.558)
-Chlorobenzene-D5 (11.887)+
-Ethylbenzene (11.973)+
m+p-Xylenes (12.180)
-o-Xylene (12.745)
-Styrene (12.816)+
-Isopropylbenzene (13.159)
-P-Bromofluorobenzene (13.488)
-cis-1,4-Dichloro-2-Butene (13.602)+
-1,1,2,2-Tetrachloroethane (13.788)
-N-Propylbenzene (13.881)
-2-Chlorotoluene (13.838)
-trans-1,4-Dichloro-2-Bute (13.998)
-4-Chlorotoluene (14.046)
-1,3,5-Trimethylbenzene (13.931)+
-1,2,4-Trimethylbenzene (14.389)
-sec-Butylbenzene (14.410)
-4-Isopropyltoluene (14.303)+
-1,3-Dichlorobenzene (14.496)
-1,4-Dichlorobenzene (14.696)
-1,2,3-Trimethylbenzene (14.889)
-N-Butylbenzene (14.839)+
-1,4-Dichlorobenzene-D4 (14.839)+
-1,2-Dichlorobenzene (15.326)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.983)+
-Naphthalene (17.341)
-1,2,3-Trichlorobenzene (17.541)
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Operator: hg
Column diameter: 0.18
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Report Date: 21-Mar-2018 10:24

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P031918B.b\P4812.D
Lab Smp Id: WG225041-7
Inj Date : 19-MAR-2018 19:25 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225041-7
Misc Info : WG225041,WG225041-4
Comment : SW846 5030
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Meth Date : 21-Mar-2018 10:23 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:17 Cal File: P4810.D
Als bottle: 9 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	215270	43.2738	43.3	
2	Chloromethane	50	1.694	1.694	(0.259)	338077	47.6577	47.6	
3	Vinyl chloride	62	1.751	1.751	(0.268)	337192	45.3277	45.3	
4	Bromomethane	94	2.001	2.001	(0.306)	152665	46.2954	46.3	
5	Chloroethane	64	2.101	2.101	(0.322)	217994	45.8506	45.8	
6	Trichlorofluoromethane	101	2.208	2.209	(0.338)	438932	43.0330	43.0	
7	Diethyl Ether	59	2.459	2.459	(0.376)	265739	49.2999	49.3	
19	Tertiary-butyl alcohol	59	3.559	3.560	(0.545)	86666	285.724	286	
8	1,1-Dichloroethene	96	2.630	2.631	(0.403)	225581	48.9020	48.9	
10	Carbon Disulfide	76	2.666	2.666	(0.408)	837605	53.2933	53.3	
9	Freon-113	151	2.659	2.659	(0.407)	166196	48.3177	48.3	
11	Iodomethane	142	2.766	2.766	(0.423)	230017	48.0511	48.0	
12	Acrolein	56	2.945	2.945	(0.451)	293287	274.441	274	
14	Methylene Chloride	84	3.180	3.181	(0.487)	277885	49.2008	49.2	
15	Acetone	43	3.231	3.231	(0.495)	86482	54.2876	54.3	
45	Isobutyl Alcohol	43	6.876	6.869	(1.053)	161223	1057.92	1060	
16	trans-1,2-Dichloroethene	96	3.338	3.338	(0.511)	259004	51.7354	51.7	
13	Allyl Chloride	41	3.073	3.074	(0.470)	411680	51.2210	51.2	
18	Methyl tert-butyl ether	73	3.452	3.453	(0.528)	777482	53.8901	53.9	
20	Acetonitrile	41	3.752	3.753	(0.574)	375952	479.357	479	
21	Di-isopropyl ether	45	3.888	3.889	(0.595)	913192	53.6321	53.6	
22	Chloroprene	53	4.017	4.017	(0.615)	411300	53.1043	53.1	
39	Propionitrile	54	6.397	6.390	(0.979)	460531	524.914	525	
40	Methacrylonitrile	41	6.426	6.426	(0.984)	2251315	556.788	557	

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4812.D
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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	4.045	4.053	(0.619)	502146	53.8423	53.8	
	24 Acrylonitrile	52	4.131	4.131	(0.632)	548020	270.418	270	
	25 Ethyl tertiary-butyl ether	59	4.367	4.368	(0.668)	823010	49.2143	49.2	
	26 Vinyl Acetate	43	4.396	4.396	(0.589)	671420	64.9421	64.9(R)	
	27 cis-1,2-Dichloroethene	96	4.796	4.796	(0.734)	285069	50.0196	50.0	
M	98 1,2-Dichloroethylene (total)	96				544073	101.755	102	
	52 Methyl Methacrylate	41	8.713	8.706	(1.167)	293269	48.3908	48.4	
	28 2,2-Dichloropropane	77	4.953	4.954	(0.758)	299519	47.2195	47.2	
	29 Bromochloromethane	128	5.103	5.104	(0.781)	118725	50.1072	50.1	
	31 Chloroform	83	5.246	5.240	(0.803)	466383	52.5009	52.5	
	32 Carbon Tetrachloride	117	5.439	5.440	(0.728)	330322	52.6648	52.7	
	33 Tetrahydrofuran	42	5.504	5.497	(0.842)	86788	50.9075	50.9	
$	34 Dibromofluoromethane	113	5.561	5.561	(0.851)	296406	49.7686	49.8	
	35 1,1,1-Trichloroethane	97	5.575	5.576	(0.853)	396247	51.5193	51.5	
	37 1,1-Dichloropropene	75	5.804	5.797	(0.777)	375685	53.3527	53.4	
	36 2-Butanone	43	5.818	5.819	(0.891)	137927	53.5166	53.5	
	38 Benzene	78	6.290	6.290	(0.842)	1090222	51.4068	51.4	
*	41 Pentafluorobenzene	168	6.533	6.533	(1.000)	606064	50.0000		
	30 Cyclohexane	56	5.075	5.075	(0.777)	424108	46.5537	46.6	
	53 Ethyl Methacrylate	69	10.679	10.679	(1.430)	427867	46.7794	46.8	
$	42 1,2-Dichloroethane-D4	65	6.561	6.562	(1.004)	417706	49.4765	49.5	
	43 Tertiary-amyl methyl ether	73	6.561	6.562	(1.004)	770060	47.4870	47.5	
	44 1,2-Dichloroethane	62	6.683	6.684	(0.895)	404015	50.6873	50.7	
	47 Trichloroethene	95	7.362	7.363	(0.986)	257100	51.1553	51.2	
*	48 1,4-Difluorobenzene	114	7.469	7.463	(1.000)	1038606	50.0000		
	49 Dibromomethane	93	8.063	8.063	(1.079)	169420	48.7766	48.8	
	50 1,2-Dichloropropane	63	8.241	8.242	(1.103)	282990	52.8599	52.8	
	51 Bromodichloromethane	83	8.377	8.378	(1.122)	370315	54.7336	54.7	
	57 cis-1,3-dichloropropene	75	9.378	9.378	(1.255)	467640	45.1872	45.2	
	54 1,4-Dioxane	88	8.713	8.721	(1.167)	77640	1338.77	1340(R)	
$	58 Toluene-D8	98	9.649	9.650	(1.292)	1309749	49.7516	49.8	
	59 Toluene	92	9.721	9.721	(1.301)	692141	50.3041	50.3	
	61 4-methyl-2-pentanone	43	10.350	10.343	(1.386)	295346	50.3405	50.3	
	60 Tetrachloroethene	164	10.264	10.265	(0.865)	201712	50.6479	50.6	
	62 trans-1,3-Dichloropropene	75	10.379	10.379	(1.389)	442326	46.0938	46.1	
	63 1,1,2-Trichloroethane	83	10.600	10.593	(1.419)	216674	47.6853	47.7	
	64 Dibromochloromethane	129	10.829	10.829	(0.912)	273635	48.9219	48.9	
	65 1,3-Dichloropropane	76	10.972	10.972	(0.924)	495107	51.1118	51.1	
	66 1,2-Dibromoethane	107	11.122	11.122	(1.489)	268642	48.4288	48.4	
	67 2-Hexanone	43	11.558	11.558	(0.974)	198537	49.7180	49.7	
*	68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	1109951	50.0000		
	69 Chlorobenzene	112	11.894	11.894	(1.002)	776091	50.1664	50.2	
	70 1-Chlorohexane	91	11.922	11.923	(1.004)	378613	51.0777	51.1	
	71 Ethylbenzene	106	11.965	11.966	(1.008)	417147	46.7562	46.8	
	72 1,1,1,2-Tetrachloroethane	131	12.001	12.002	(1.011)	268367	52.1006	52.1	
M	106 Xylenes (total)	106				1537675	139.575	140	
	73 m+p-Xylenes	106	12.180	12.180	(1.026)	1051403	93.3185	93.3	
	74 o-Xylene	106	12.745	12.745	(1.073)	486272	46.2570	46.2	
	75 Styrene	104	12.816	12.817	(1.079)	871489	46.6967	46.7	
	76 Bromoform	173	12.816	12.817	(1.079)	192672	48.3423	48.3	
	77 Isopropylbenzene	105	13.159	13.160	(0.888)	1264663	50.0149	50.0	
$	78 P-Bromofluorobenzene	95	13.488	13.488	(1.806)	574380	50.1312	50.1	
	79 cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	140525	46.3039	46.3	
	86 trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	113310	54.7315	54.7	

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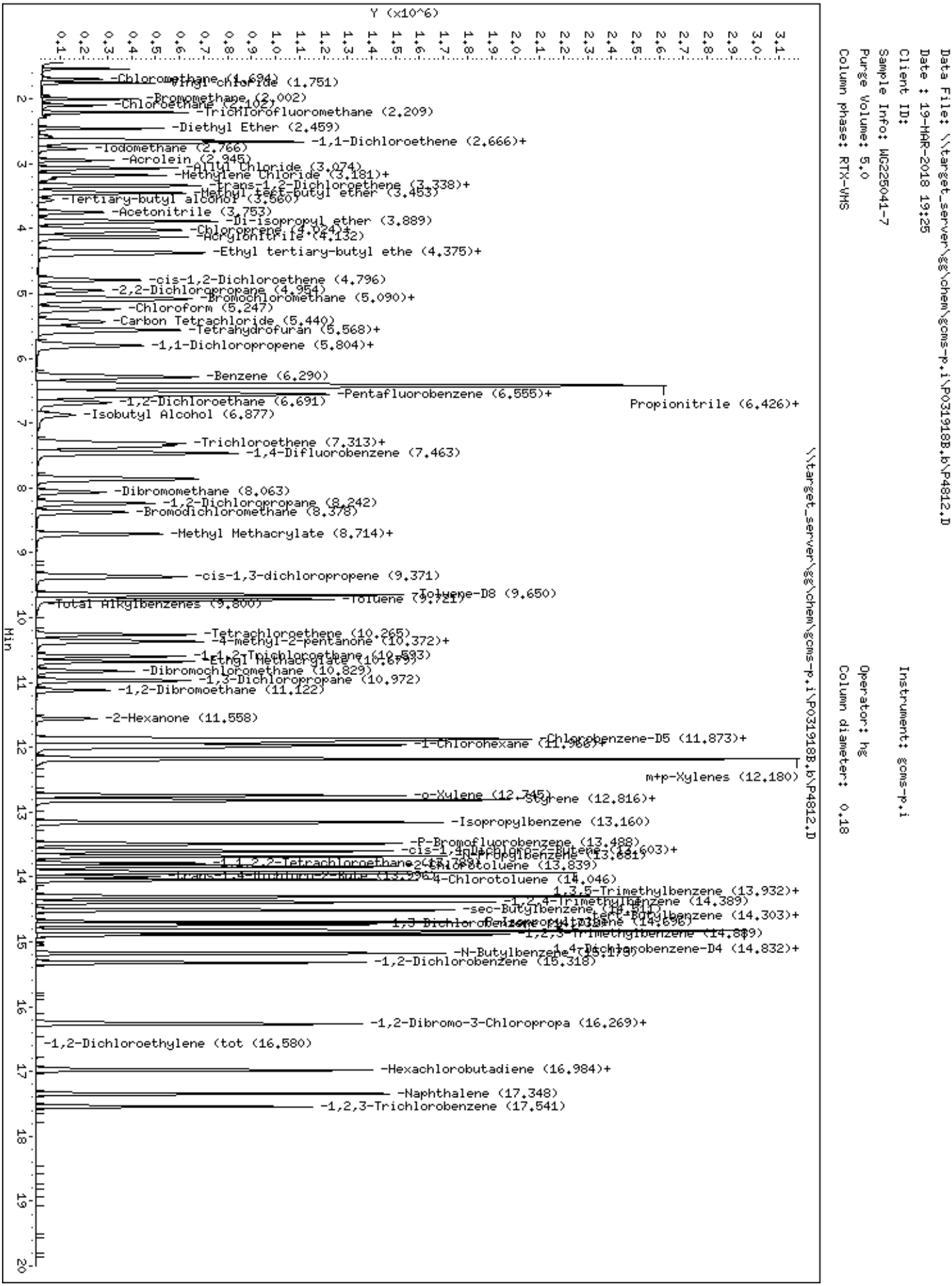
		QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	80 Bromobenzene	156	13.595	13.596	(0.917)	309829	50.8440	50.8	
	81 N-Propylbenzene	91	13.681	13.674	(0.923)	1530010	52.8647	52.9	
	82 1,1,2,2-Tetrachloroethane	83	13.788	13.789	(0.930)	388510	54.6333	54.6	
	85 1,3,5-Trimethylbenzene	105	13.938	13.932	(0.940)	1054349	47.5891	47.6	
	83 2-Chlorotoluene	91	13.838	13.839	(0.933)	910426	52.5016	52.5	
	84 1,2,3-Trichloropropane	75	13.924	13.924	(0.939)	339892	52.1835	52.2	
	87 4-Chlorotoluene	91	14.045	14.046	(0.947)	973797	47.9441	47.9	
	88 tert-Butylbenzene	119	14.303	14.303	(0.965)	1034977	46.5300	46.5	
	89 Pentachloroethane	165	14.310	14.310	(0.965)	149079	50.5042	50.5	
	90 1,2,4-Trimethylbenzene	105	14.389	14.389	(0.971)	1099393	47.9316	47.9	
	92 P-Isopropyltoluene	119	14.696	14.696	(0.991)	1085116	47.8857	47.9	
	93 1,3-Dichlorobenzene	146	14.739	14.739	(0.994)	604584	51.2956	51.3	
*	94 1,4-Dichlorobenzene-D4	152	14.825	14.825	(1.000)	601661	50.0000		
	95 1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	627847	48.7801	48.8	
	97 N-Butylbenzene	91	15.175	15.175	(1.024)	969552	47.9225	47.9	
	91 sec-Butylbenzene	105	14.510	14.511	(0.979)	1292447	48.5654	48.6	
	99 1,2-Dichlorobenzene	146	15.325	15.325	(1.034)	573023	51.0365	51.0	
	100 1,2-Dibromo-3-Chloropropane	75	16.240	16.239	(1.095)	67568	49.3568	49.4	
	101 1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	398208	50.1146	50.1	
	102 Hexachlorobutadiene	225	16.962	16.962	(1.144)	113488	48.4953	48.5	
	103 1,2,4-Trichlorobenzene	180	16.983	16.984	(1.146)	365221	52.4457	52.4	
	96 1,2,3-Trimethylbenzene	105	14.889	14.889	(1.004)	1168334	52.2957	52.3	
	104 Naphthalene	128	17.348	17.347	(1.170)	1092409	52.5008	52.5	
	105 1,2,3-Trichlorobenzene	180	17.541	17.541	(1.183)	333059	51.9406	51.9	
	17 Methyl Acetate	43	3.352	3.353	(0.513)	255032	56.3256	56.3	
	46 Methylcyclohexane	83	7.312	7.313	(1.119)	432580	46.7606	46.8	
M	55 Total Alkylbenzenes	100				8065844	339.289	339	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.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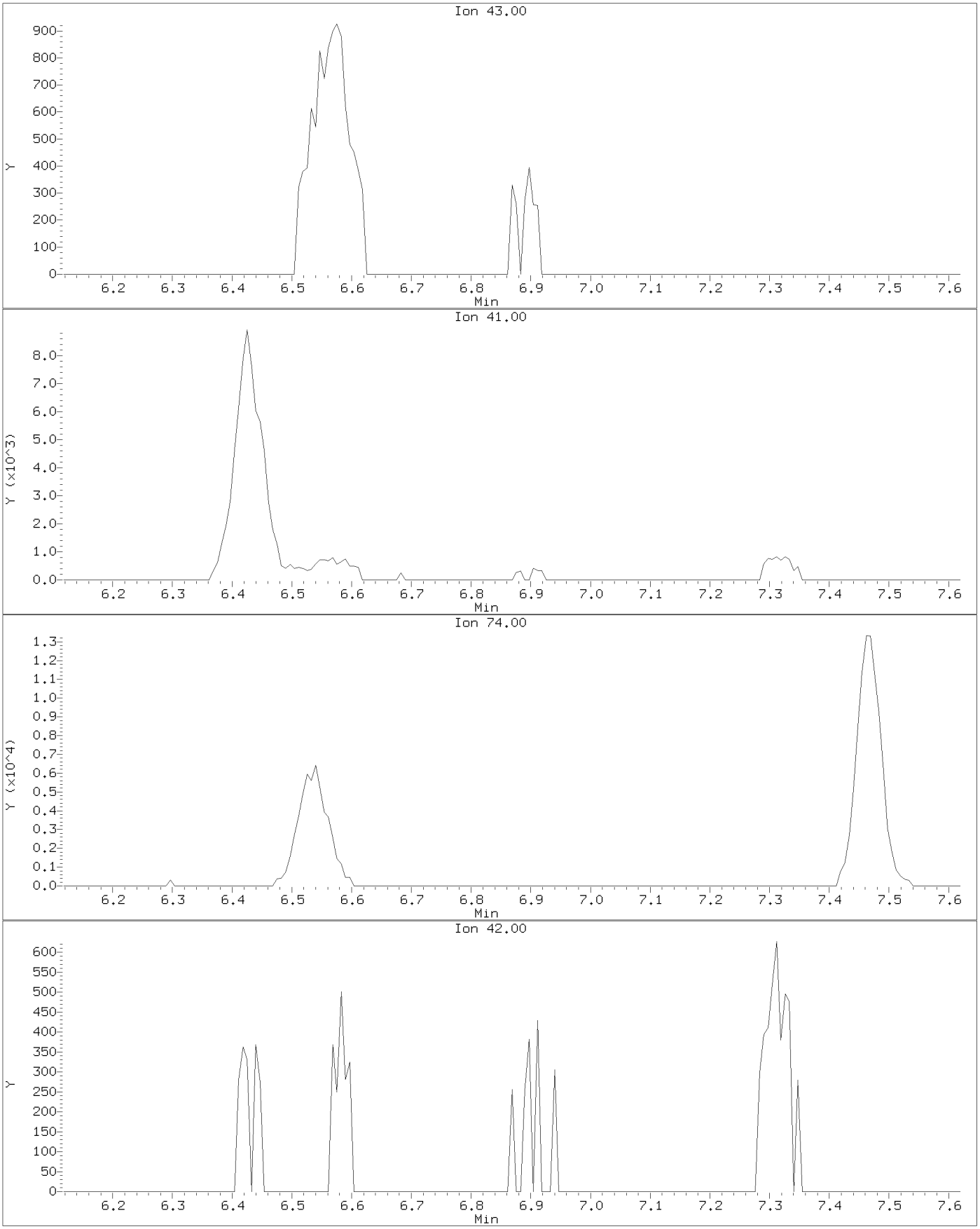
Date : 19-MAR-2018 19:25
Client ID:
Sample Info: WG225041-7
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-p.i\P031918B.b\P4812.D
-Chloromethane (1.694)
-Vinyl chloride (1.751)
-Bromomethane (2.002)
-Chloroethane (2.102)
-Trichlorofluoromethane (2.209)
-Diethyl Ether (2.459)
-1,1-Dichloroethene (2.666)+
-Iodomethane (2.766)
-Acrolein (2.945)
-Allyl Chloride (3.074)
-Methylene Chloride (3.181)+
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.453)
-Tertiary-butyl alcohol (3.560)
-Acetonitrile (3.753)
-Di-isopropyl ether (3.889)
-Chloroprene (4.024)+
-Acrylonitrile (4.132)
-Ethyl tertiary-butyl ethe (4.375)+
-cis-1,2-Dichloroethene (4.796)
-2,2-Dichloropropane (4.954)
-Bromochloromethane (5.090)+
-Chloroform (5.247)
-Carbon Tetrachloride (5.440)
-Tetrahydrofuran (5.568)+
-1,1-Dichloropropene (5.804)+
-Benzene (6.290)
-Pentafluorobenzene (6.555)+
Propionitrile (6.426)+
-1,2-Dichloroethane (6.691)
-Isobutyl Alcohol (6.877)
-Trichloroethene (7.313)+
-1,4-Difluorobenzene (7.463)
-Dibromomethane (8.063)
-1,2-Dichloropropane (8.242)
-Bromodichloromethane (8.378)
-Methyl Methacrylate (8.714)+
-cis-1,3-dichloropropene (9.371)
-Toluene-D8 (9.650)
-Total Alkylbenzenes (9.800)
-Toluene (9.721)
-Tetrachloroethene (10.265)
-4-methyl-2-pentanone (10.372)+
-1,1,2-Trichloroethane (10.593)
-Ethyl Methacrylate (10.679)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.122)
-2-Hexanone (11.558)
-Chlorobenzene-D5 (11.873)+
-1-Chlorohexane (11.966)+
m+p-Xylenes (12.180)
-o-Xylene (12.745)
-Styrene (12.816)+
-Isopropylbenzene (13.160)
-P-Bromofluorobenzene (13.488)
-cis-1,4-Dichloro-2-Butene (13.603)+
-1,1,2,2-Tetrachloroethane (13.789)
-2-Chlorotoluene (13.839)
-trans-1,4-Dichloro-2-Bute (13.996)
-4-Chlorotoluene (14.046)
1,3,5-Trimethylbenzene (13.932)+
-1,2,4-Trimethylbenzene (14.389)
-sec-Butylbenzene (14.511)
-tert-Butylbenzene (14.303)+
-P-Isopropyltoluene (14.696)
-1,2,3-Trimethylbenzene (14.889)
-1,4-Dichlorobenzene-D4 (14.832)+
-N-Butylbenzene (15.175)
-1,2-Dichlorobenzene (15.318)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.984)+
-Naphthalene (17.348)
-1,2,3-Trichlorobenzene (17.541)

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Isobutyl Alcohol
CAS Number: 78-83-1

BEFORE MANUAL INTEGRATION



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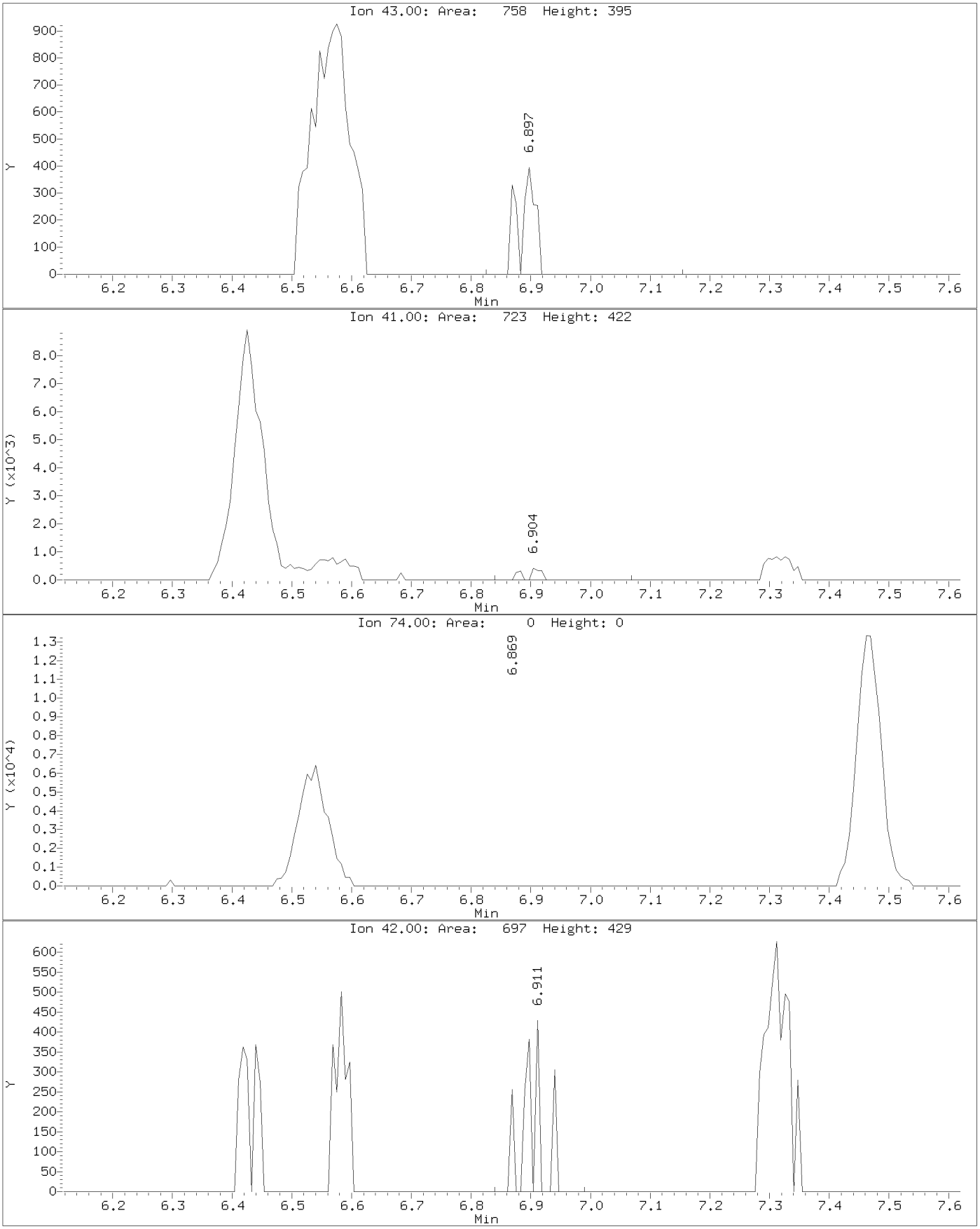
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Isobutyl Alcohol
CAS Number: 78-83-1

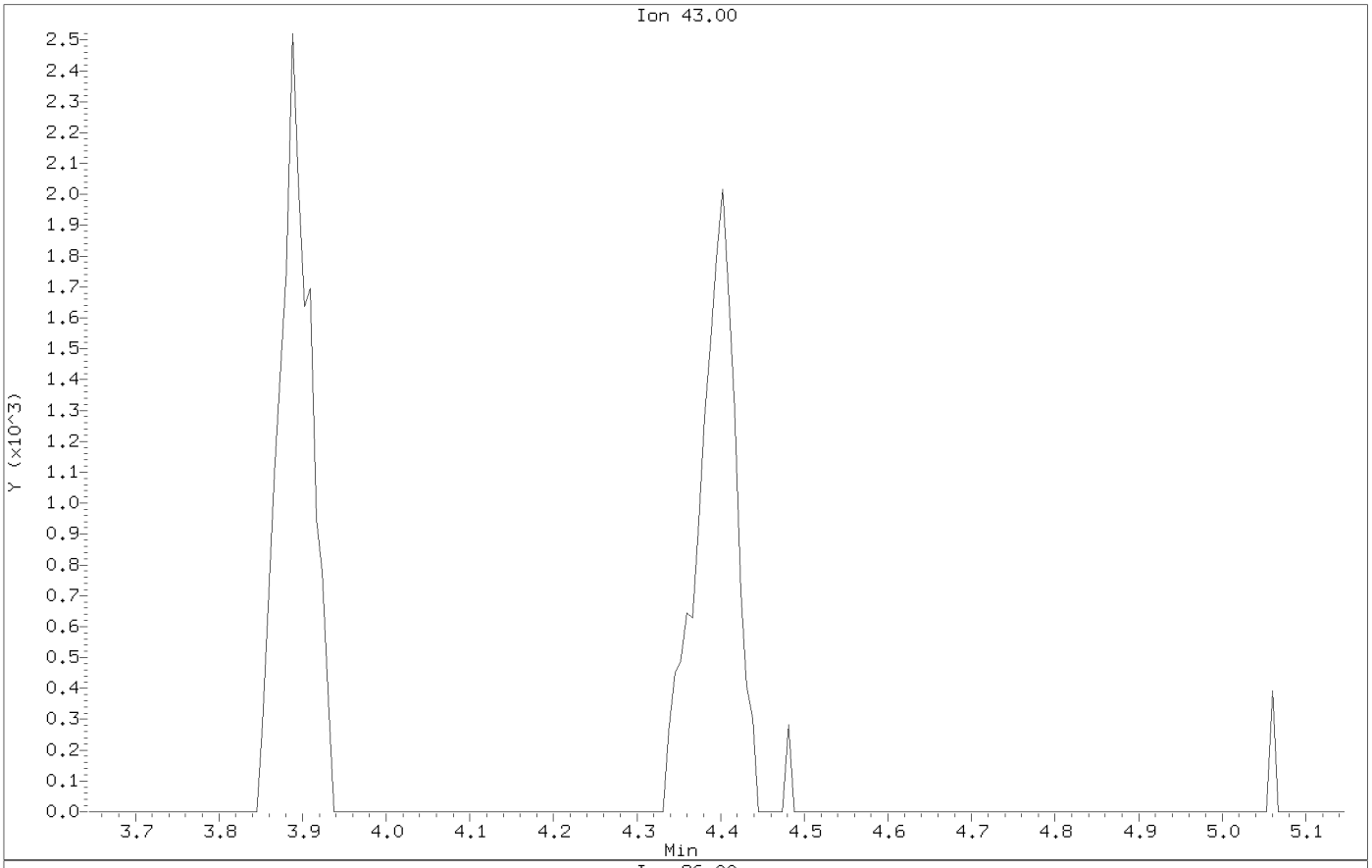
AFTER MANUAL INTEGRATION

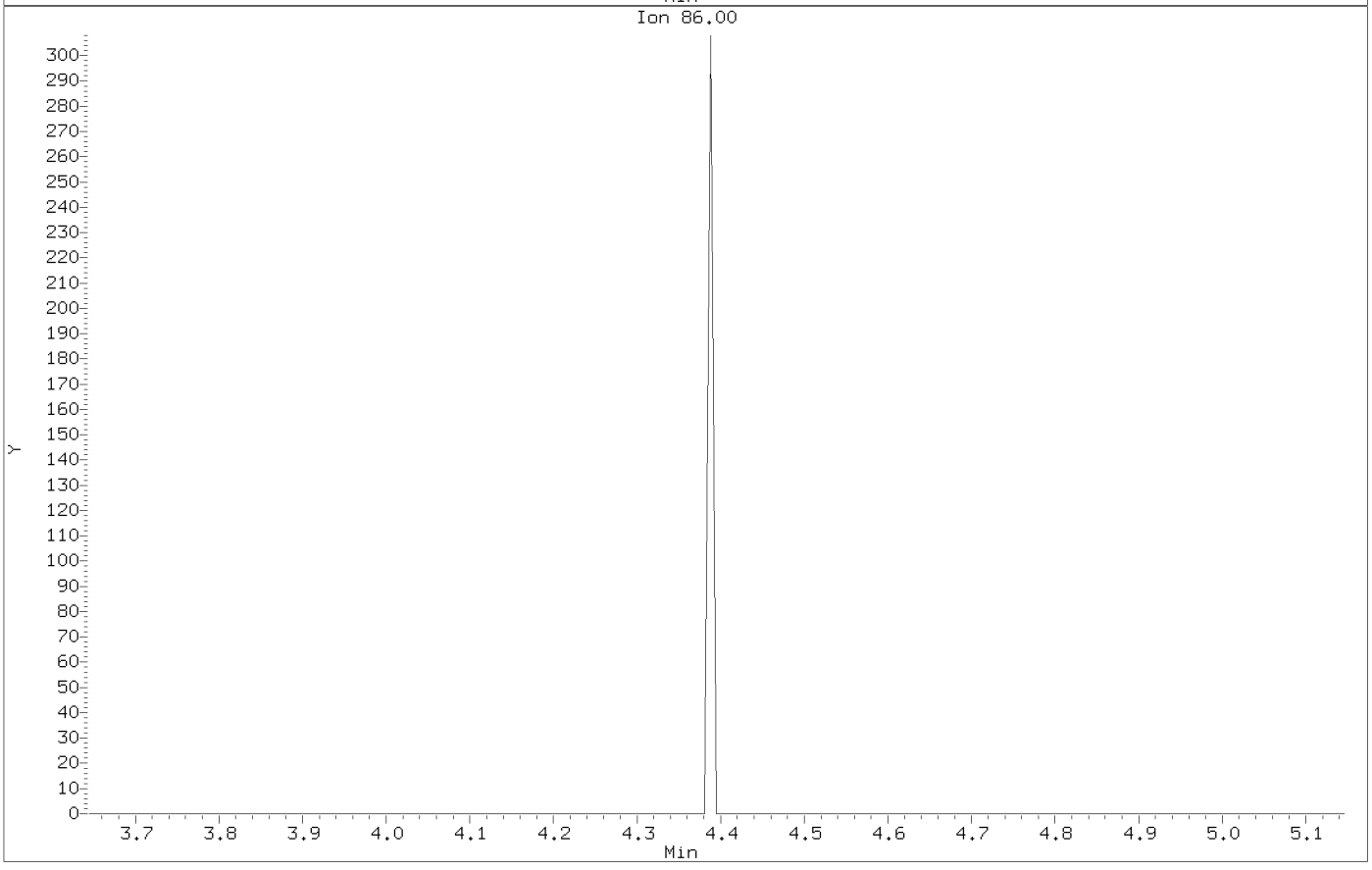


Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Vinyl Acetate
CAS Number: 108-05-4

BEFORE MANUAL INTEGRATION

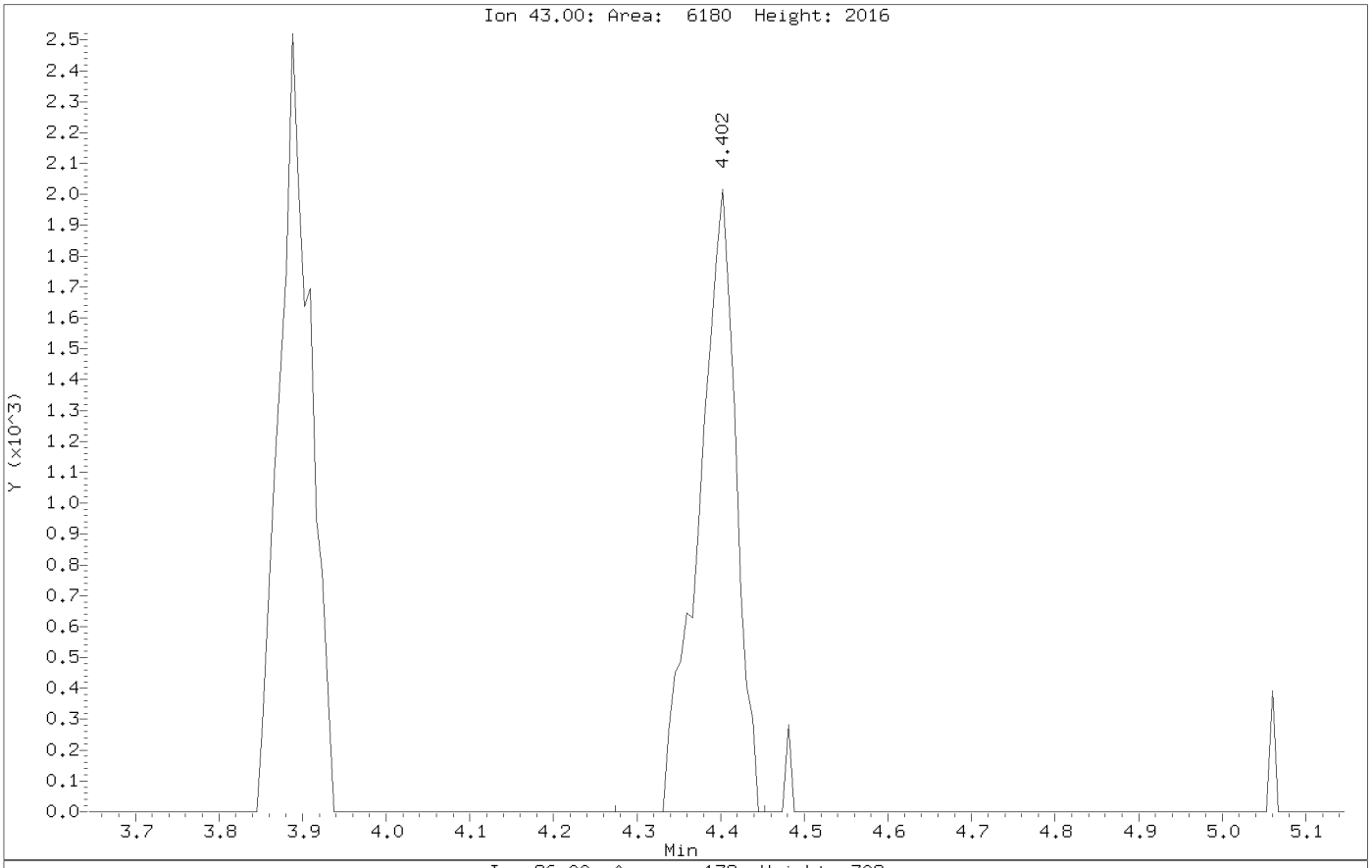


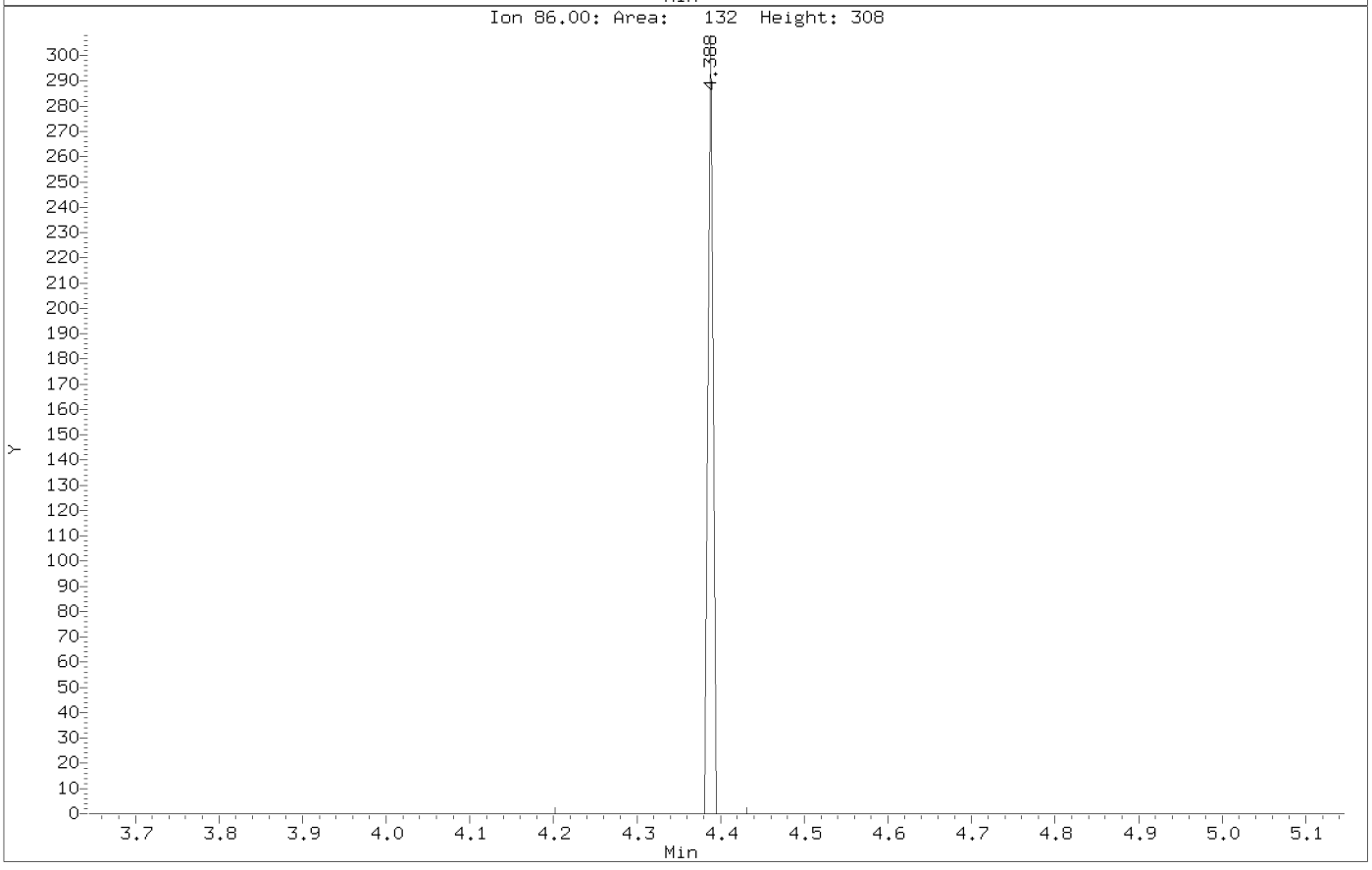


Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Vinyl Acetate
CAS Number: 108-05-4

AFTER MANUAL INTEGRATION





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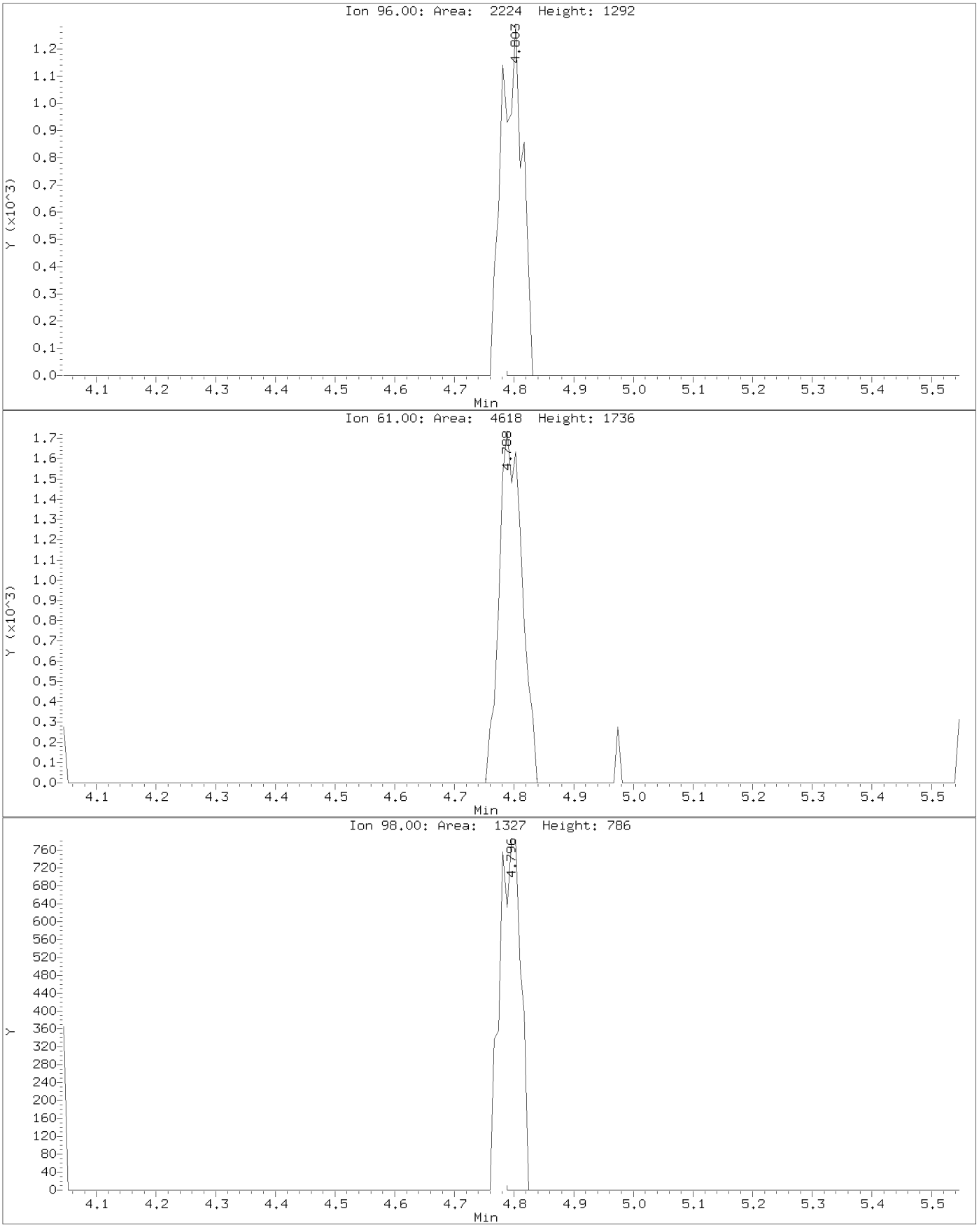
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2

BEFORE MANUAL INTEGRATION



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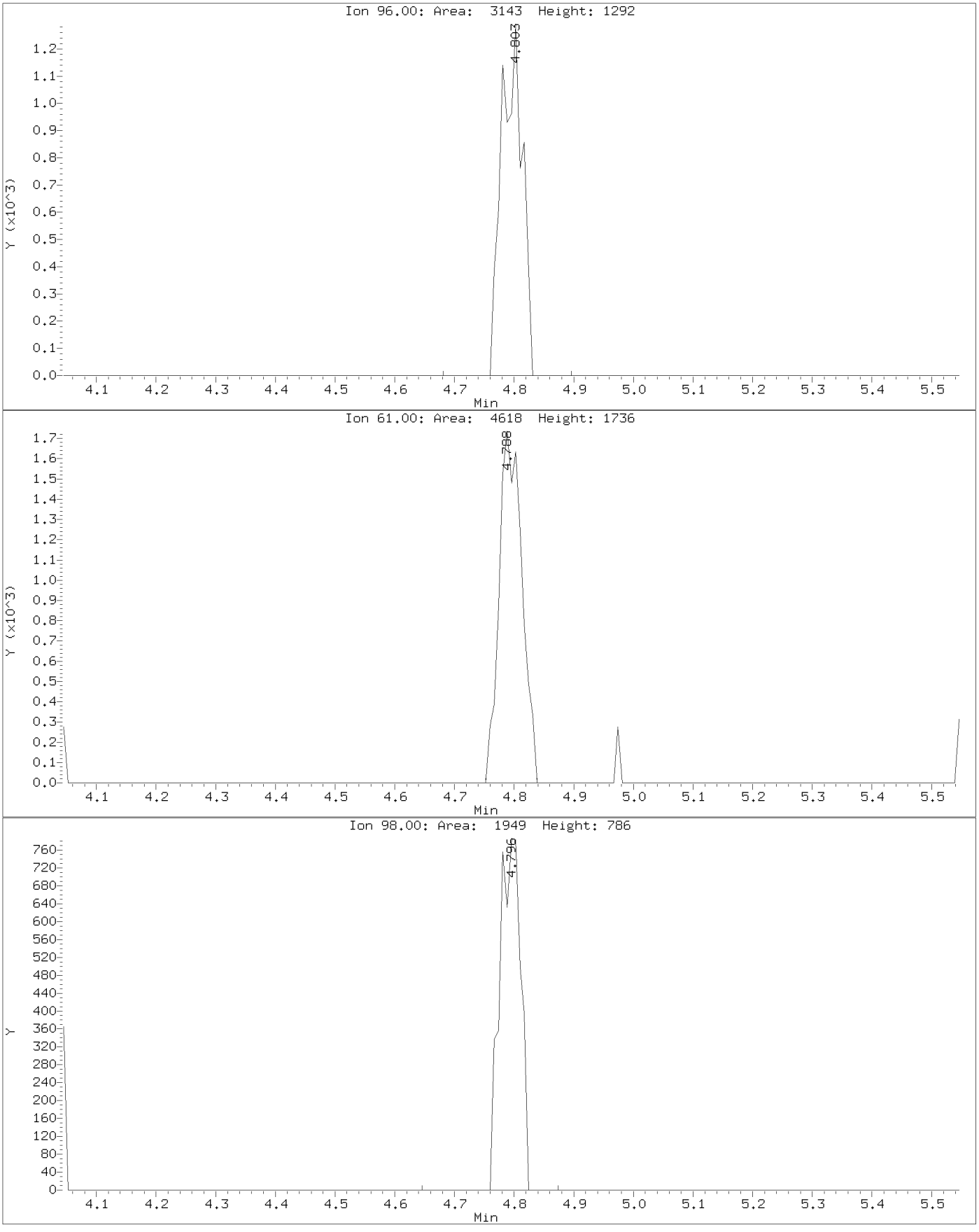
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: cis-1,2-Dichloroethene
CAS Number: 156-59-2

AFTER MANUAL INTEGRATION



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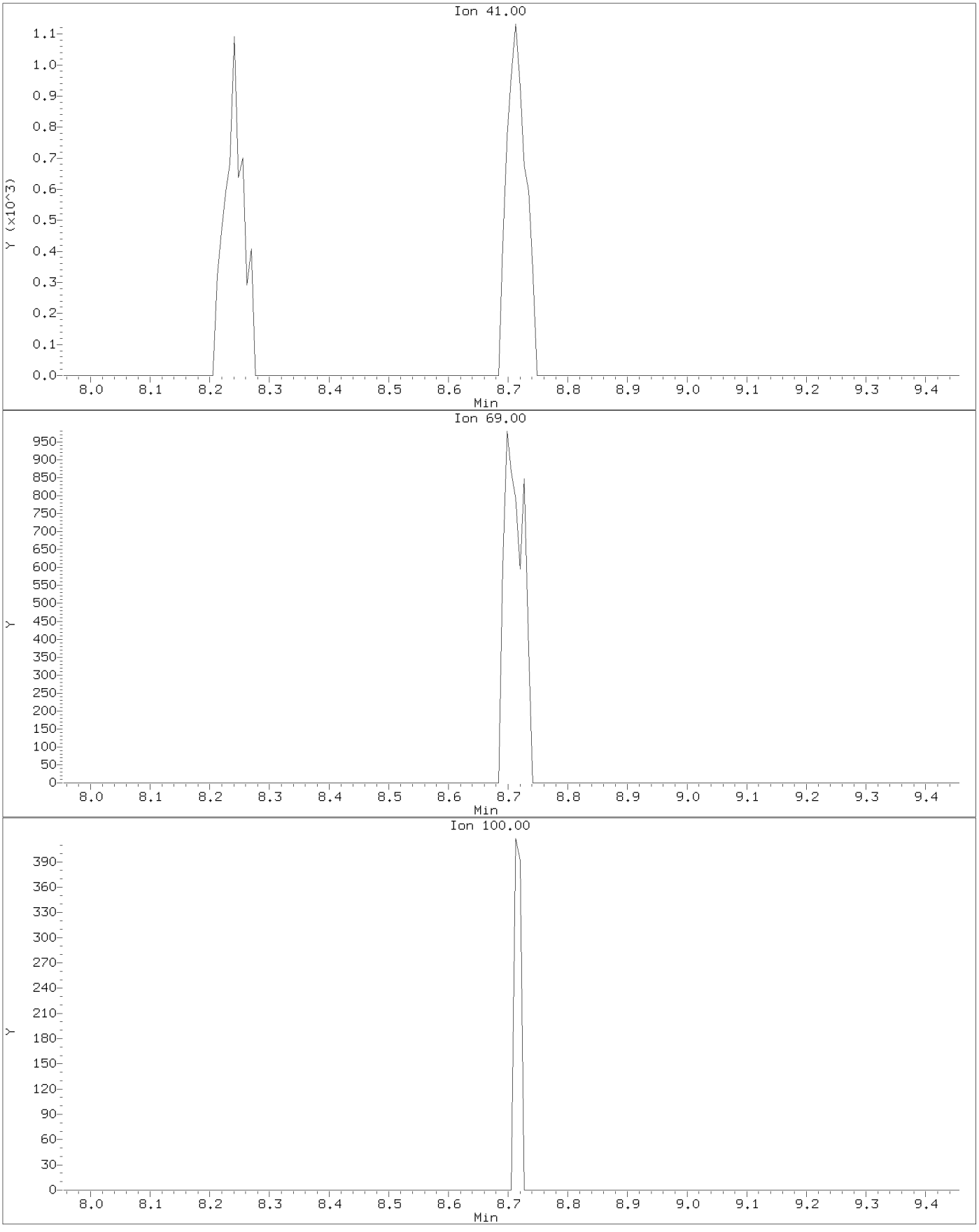
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Methyl Methacrylate
CAS Number: 80-62-6

BEFORE MANUAL INTEGRATION



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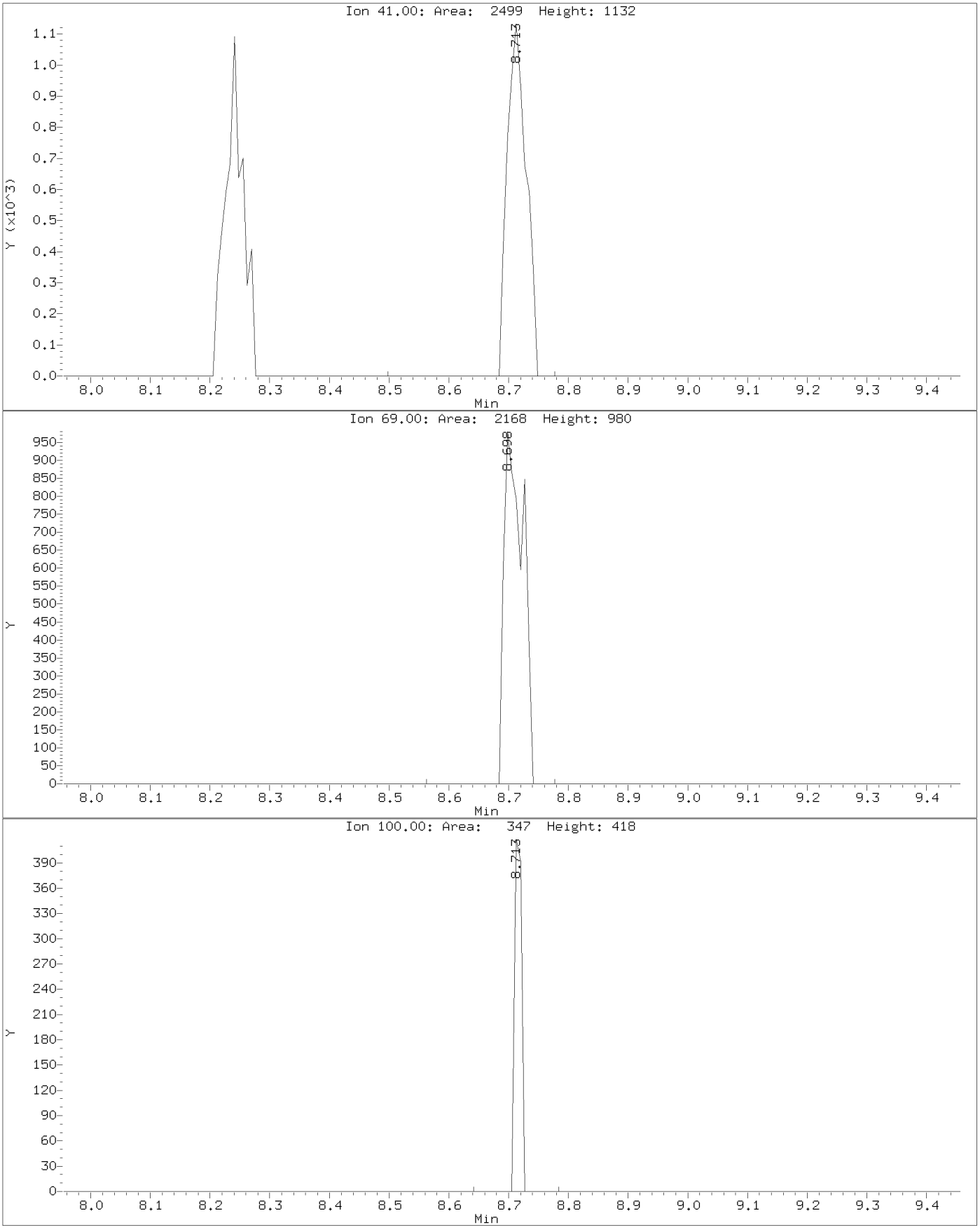
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Methyl Methacrylate
CAS Number: 80-62-6

AFTER MANUAL INTEGRATION



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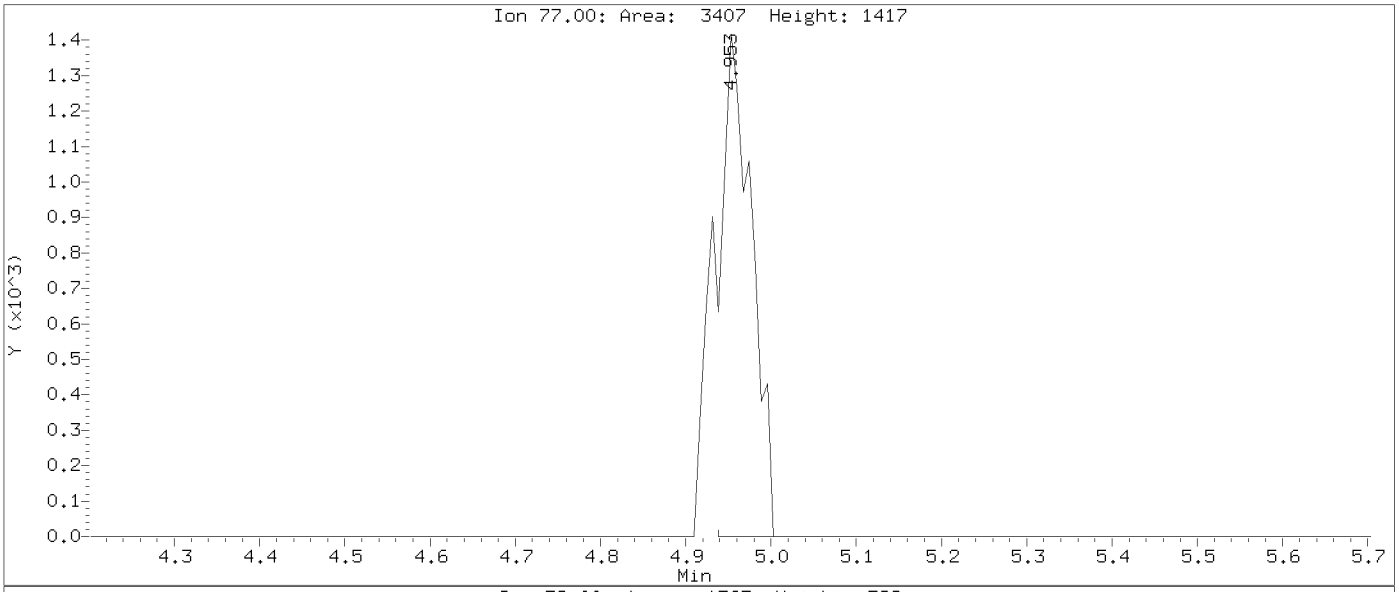
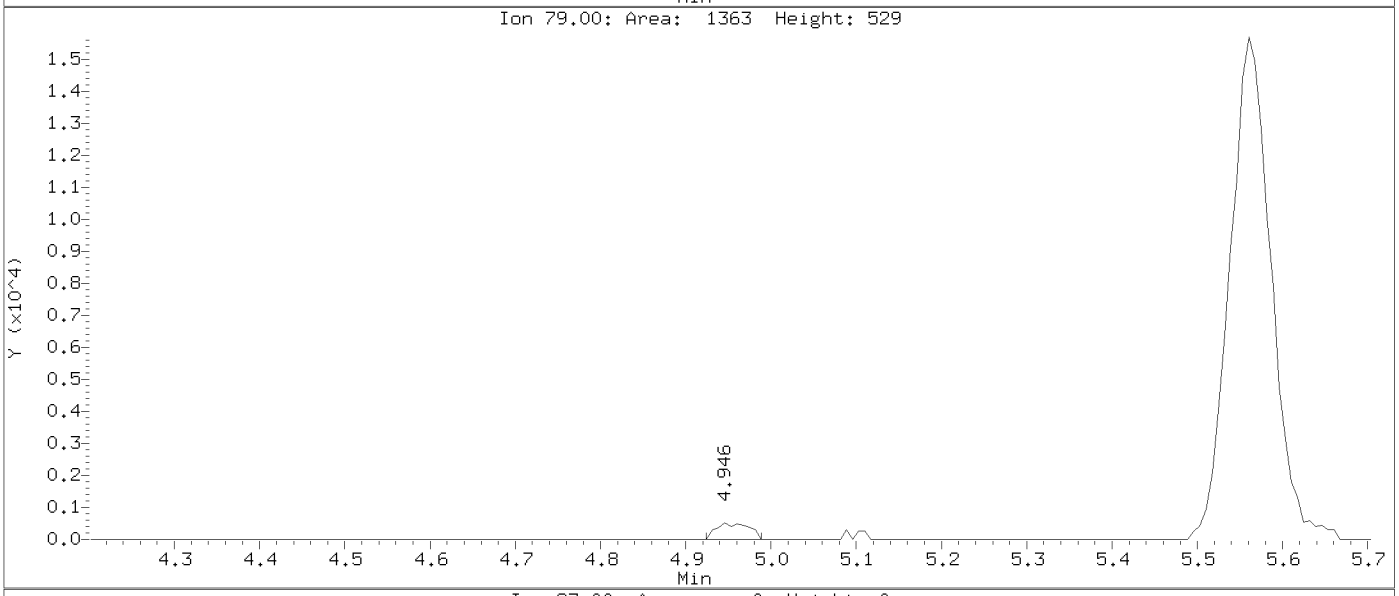
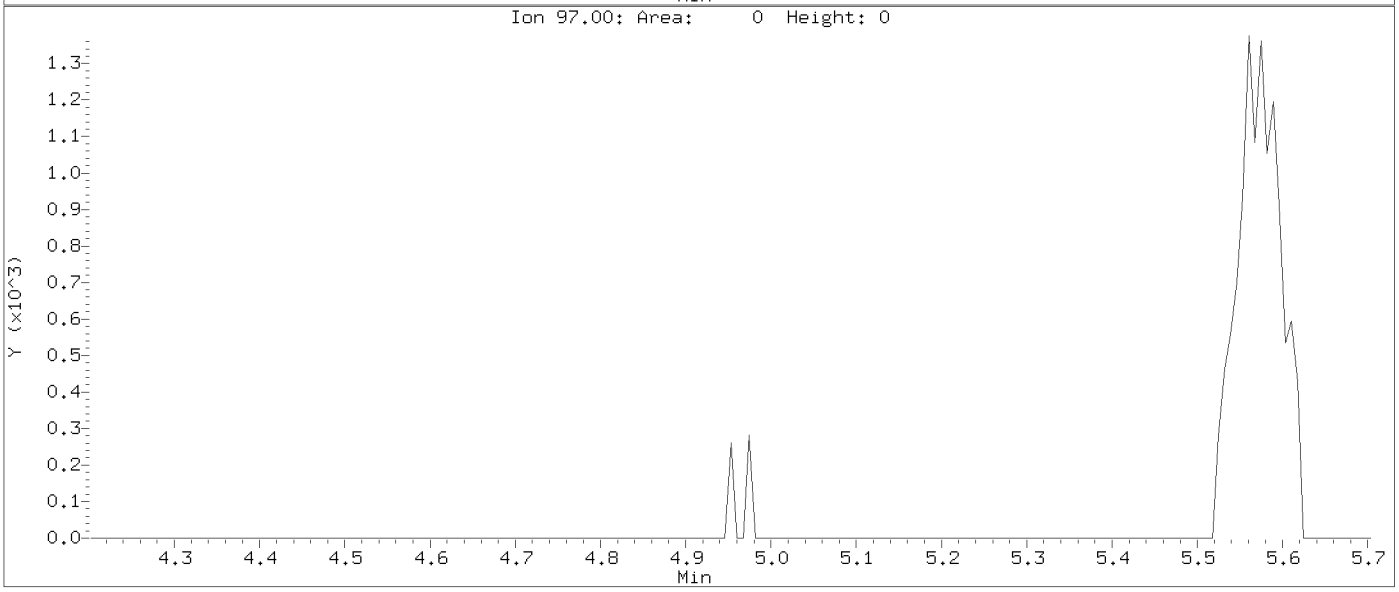
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7

BEFORE MANUAL INTEGRATION



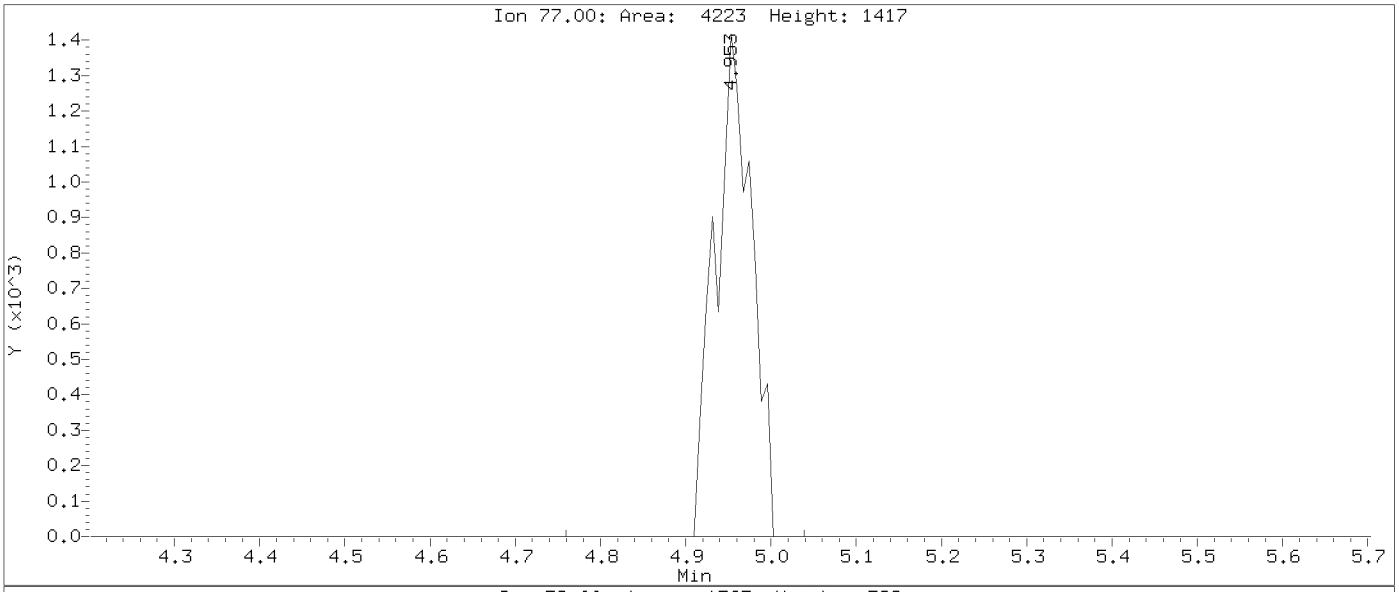


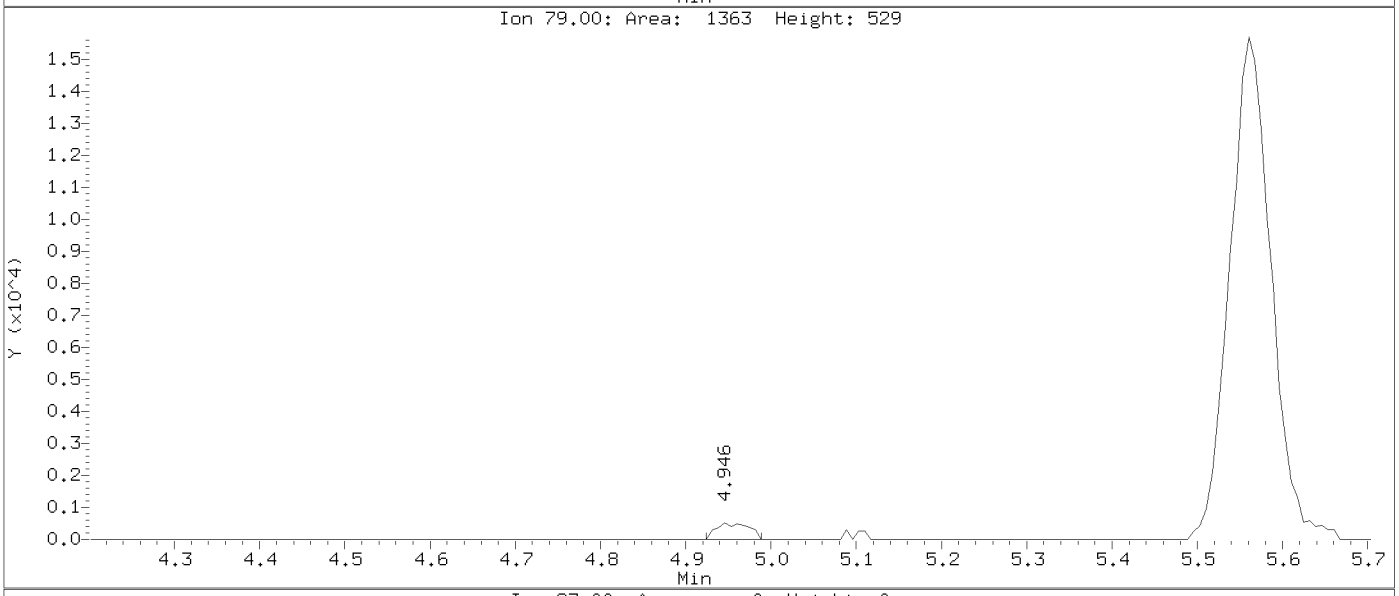


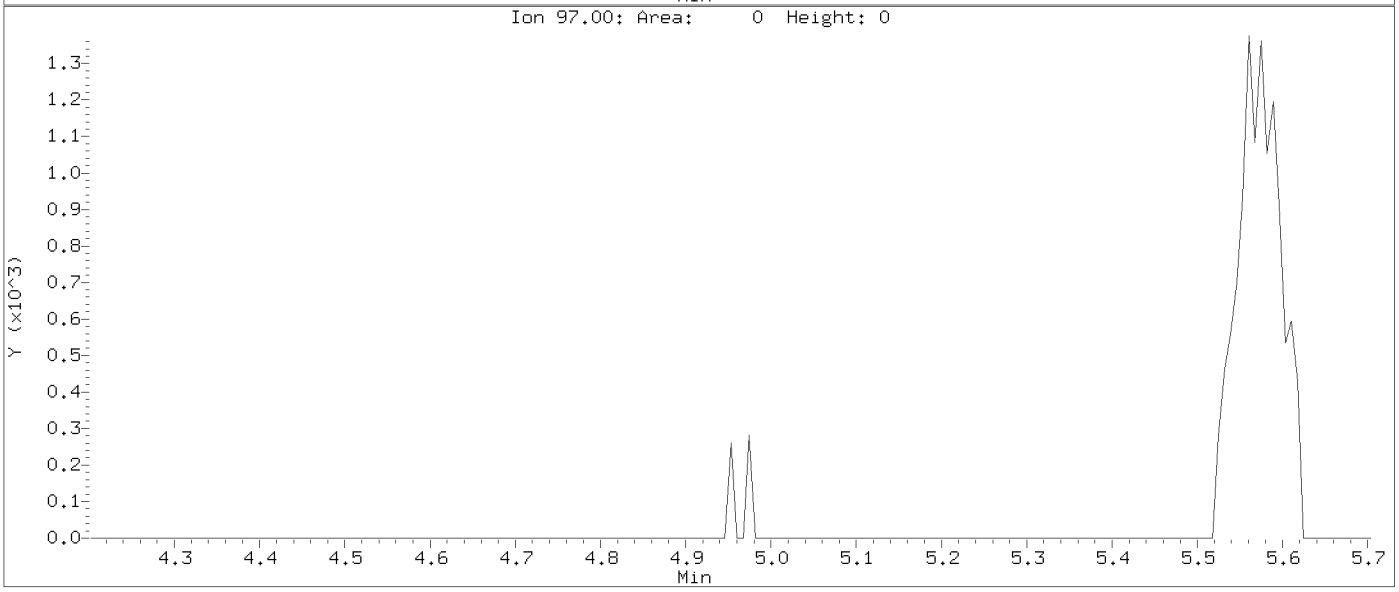
Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: 2,2-Dichloropropane
CAS Number: 594-20-7

AFTER MANUAL INTEGRATION



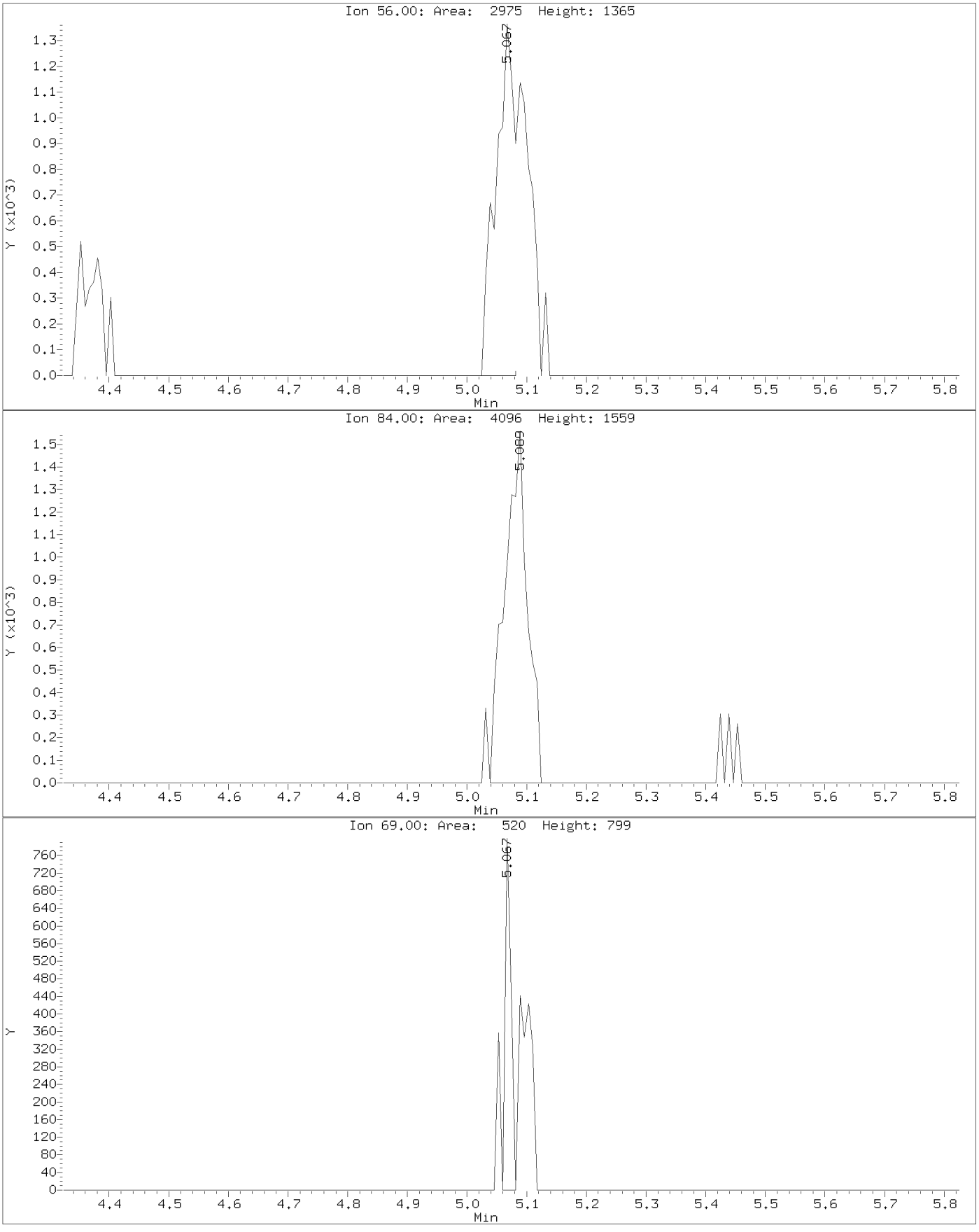




Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Cyclohexane
CAS Number: 1735-17-7

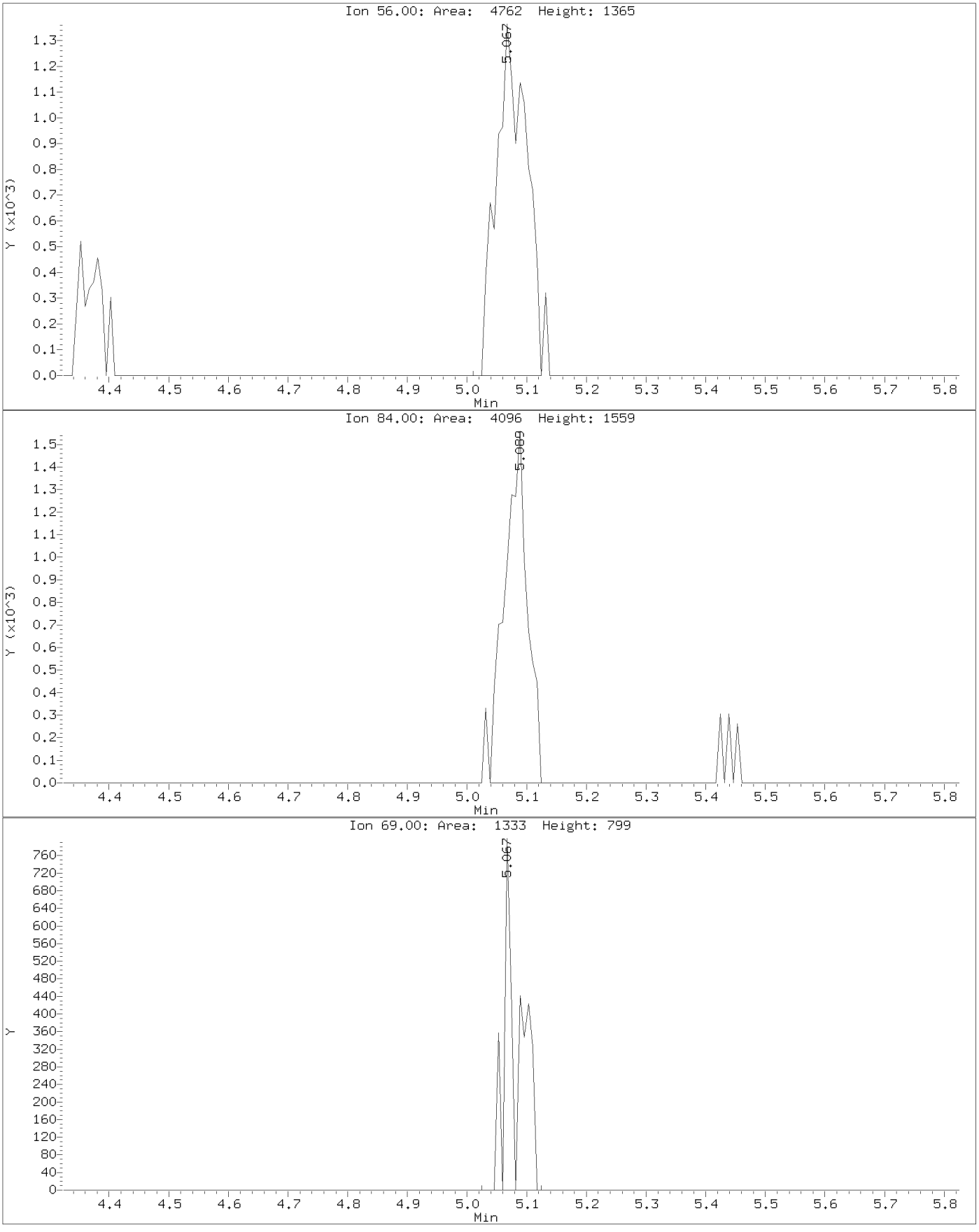
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Cyclohexane
CAS Number: 1735-17-7

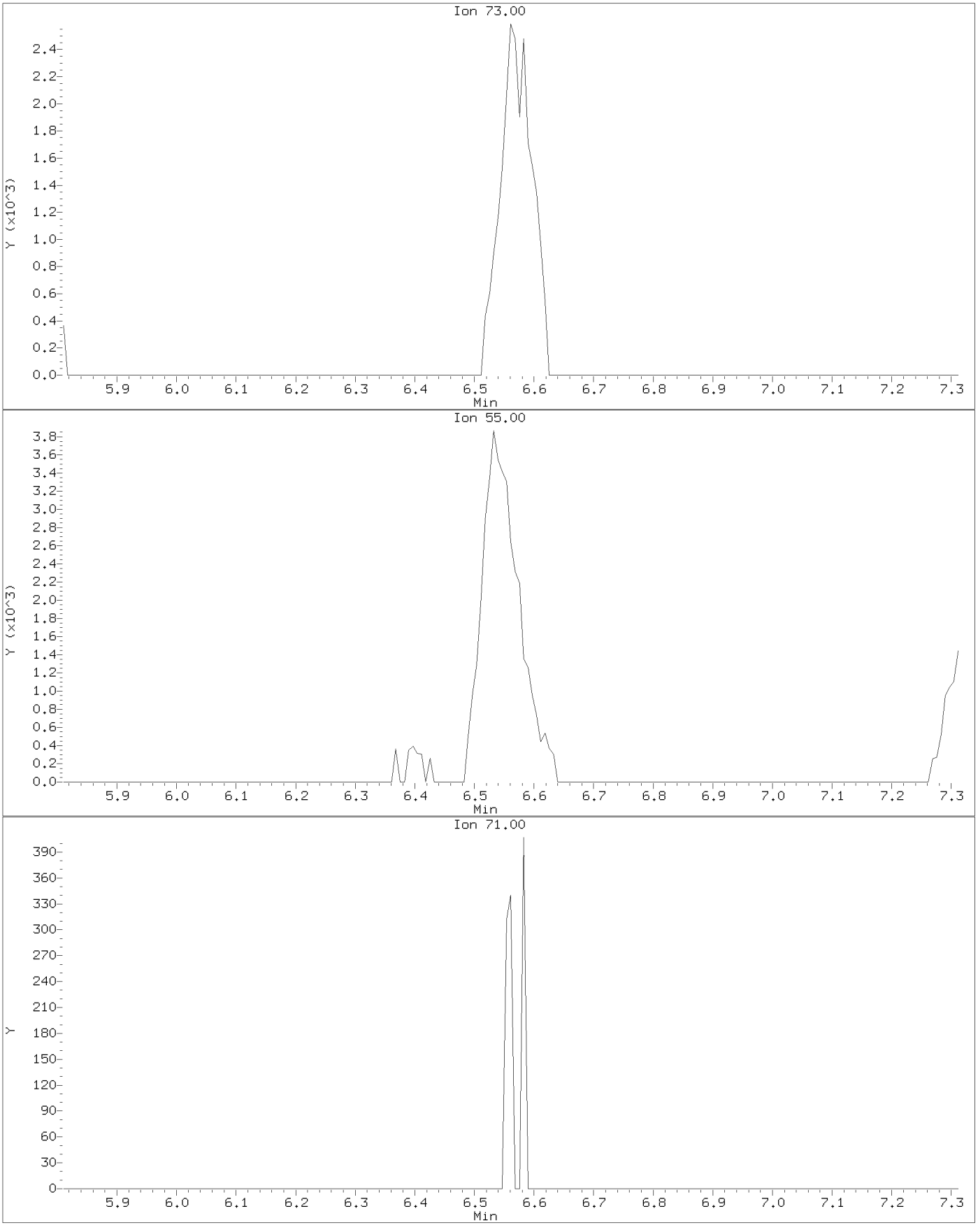
AFTER MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Tertiary-amyl methyl ether
CAS Number: 994-05-8

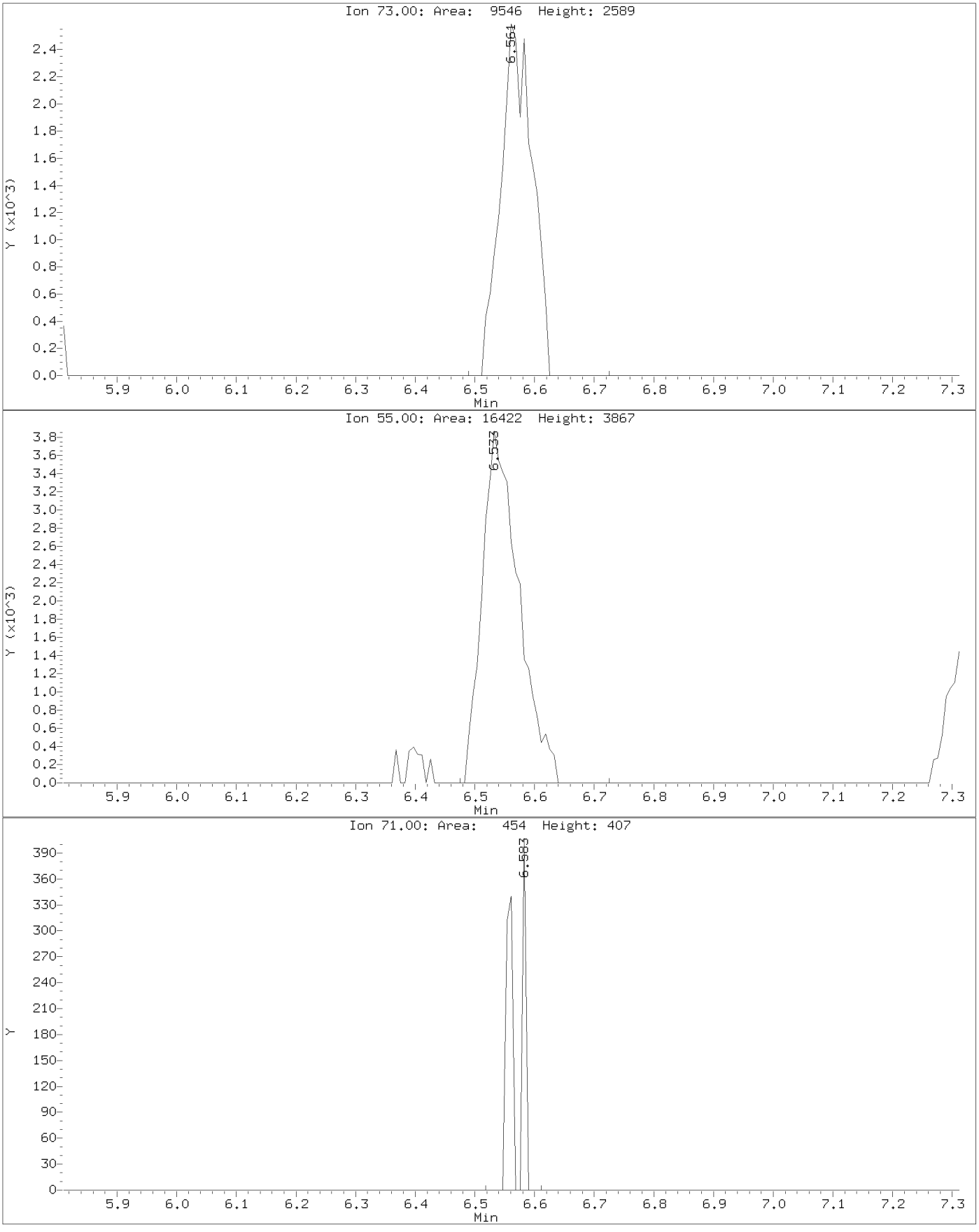
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4809.D
Injection Date: 19-MAR-2018 17:42
Instrument: gcms-p.i
Client Sample ID:

Compound: Tertiary-amyl methyl ether
CAS Number: 994-05-8

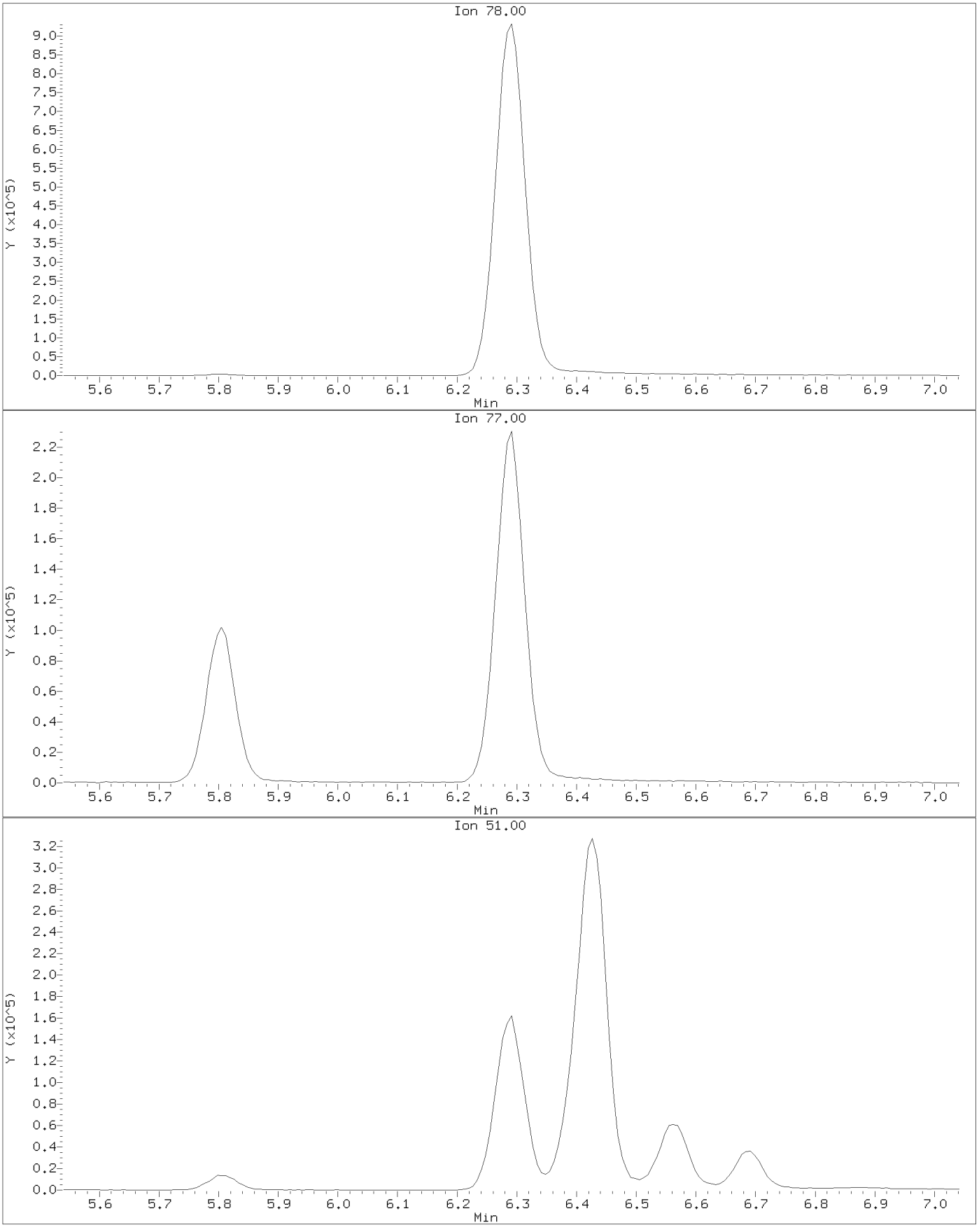
AFTER MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4810.D
Injection Date: 19-MAR-2018 18:17
Instrument: gcms-p.i
Client Sample ID:

Compound: Benzene
CAS Number: 71-43-2

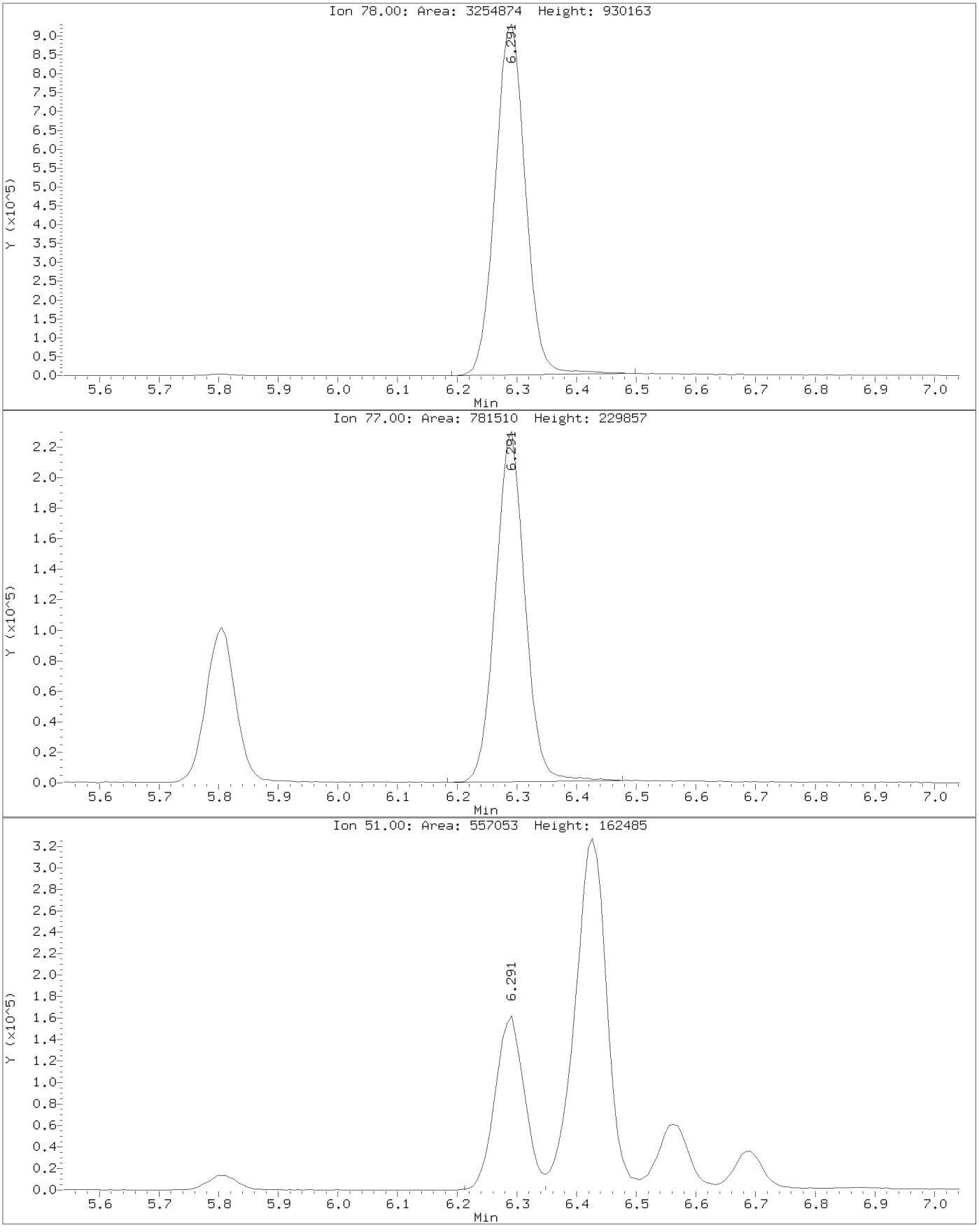
BEFORE MANUAL INTEGRATION



Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\P4810.D
Injection Date: 19-MAR-2018 18:17
Instrument: gcms-p.i
Client Sample ID:

Compound: Benzene
CAS Number: 71-43-2

AFTER MANUAL INTEGRATION



Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2295
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P4907.D P4906.D P4905.D P4904.D P4909.D P4908.D
Column ID:
Calibration Date(s): 24-MAR-18 08:24 24-MAR-18 11:18

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Dichlorodifluoromethane	0.34860	0.42625	0.37312	0.43461	0.36769	0.37802	AVG		0.38805		8.86846	15.00000	O
Chloromethane	0.62937	0.58761	0.53168	0.58385	0.54808	0.54850	AVG		0.57151		6.27179	15.00000	O
Vinyl chloride	0.61113	0.59594	0.57651	0.63250	0.55890	0.56541	AVG		0.59007		4.81833	15.00000	O
Bromomethane	0.37117	0.35986	0.31123	0.32878	0.28459	0.29303	AVG		0.32478		10.84713	15.00000	O
Chloroethane	0.39296	0.40568	0.37079	0.41753	0.33485	+++++	AVG		0.38436		8.49421	15.00000	O
Trichlorofluoromethane	0.84175	0.88059	0.84035	0.94836	0.81150	0.90806	AVG		0.87177		5.79966	15.00000	O
1,1-Dichloroethene	0.34526	0.38445	0.39229	0.42599	0.38352	0.41555	AVG		0.39118		7.24816	15.00000	O
Freon-113	0.37484	0.35588	0.32063	0.34195	0.28661	0.31400	AVG		0.33232		9.53281	15.00000	O
Carbon Disulfide	1.09305	1.24827	1.28810	1.46082	1.32308	1.39725	AVG		1.30176		9.80643	15.00000	O
Methylene Chloride	0.44044	0.45623	0.43681	0.45571	0.43894	0.44078	AVG		0.44482		1.96701	15.00000	O
Acetone	0.12954	0.14563	0.15352	0.15260	0.13485	0.14293	AVG		0.14318		6.67914	15.00000	O
trans-1,2-Dichloroethene	2366	18711	76170	185310	454359	631535	LNR	0.00504	0.41411		0.99978	0.99000	O
Methyl tert-butyl ether	6023	45918	212548	504255	1362787	1868977	LNR	0.02436	1.23320		0.99963	0.99000	O
1,1-Dichloroethane	0.57199	0.70492	0.72493	0.78724	0.77643	0.78947	AVG		0.72583		11.44219	15.00000	O
cis-1,2-Dichloroethene	2419	18293	77133	195979	485834	688651	LNR	0.01839	0.45062		0.99946	0.99000	O
2,2-Dichloropropane	3416	23320	102049	265000	656428	910275	LNR	0.01460	0.59910		0.99970	0.99000	O
Bromochloromethane	1019	8989	37438	88556	195111	271017	LNR	-0.02278	0.17743		0.99771	0.99000	O
Chloroform	0.59456	0.71154	0.69750	0.74984	0.73385	0.74477	AVG		0.70534		8.19840	15.00000	O
Carbon Tetrachloride	0.24818	0.30397	0.29875	0.33597	0.31598	0.33112	AVG		0.30566		10.37403	15.00000	O
1,1,1-Trichloroethane	0.46669	0.58095	0.59363	0.66651	0.64415	0.67044	AVG		0.60373		12.70715	15.00000	O
2-Butanone	6529	49176	219500	518362	1312458	1881047	LNR	0.10332	0.24526		0.99925	0.99000	O
1,1-Dichloropropene	2887	22328	99525	263446	662686	954568	LNR	0.02757	0.37647		0.99908	0.99000	O
Benzene	0.72225	0.95505	0.96884	1.09262	1.06348	1.09335	AVG		0.98260		14.36666	15.00000	O
1,2-Dichloroethane	0.39023	0.39918	0.37198	0.39371	0.38031	0.39329	AVG		0.38812		2.59226	15.00000	O
Trichloroethene	0.17079	0.23794	0.23028	0.26637	0.24987	0.26307	AVG		0.23639		14.81919	15.00000	O
Dibromomethane	0.11711	0.14538	0.14661	0.16551	0.15590	0.16627	AVG		0.14946		12.16419	15.00000	O
1,2-Dichloropropane	2105	17337	76670	196680	509291	711573	LNR	0.02248	0.28236		0.99971	0.99000	O
Bromodichloromethane	0.23402	0.30308	0.31447	0.35735	0.34760	0.36751	AVG		0.32067		15.35407	15.00000	W
cis-1,3-dichloropropene	2938	25795	133539	344573	900419	1292534	LNR	0.03580	0.51088		0.99911	0.99000	O
Toluene	0.50172	0.61304	0.63020	0.69373	0.68943	0.72626	AVG		0.64240		12.58515	15.00000	O
Tetrachloroethene	0.14037	0.18610	0.18567	0.20492	0.19446	0.19783	AVG		0.18489		12.43764	15.00000	O
4-methyl-2-pentanone	9937	91288	463587	1132623	3007266	4527941	LNR	0.24256	0.35439		0.99686	0.99000	O
trans-1,3-Dichloropropene	3031	25066	125419	319257	835966	1222990	LNR	0.03986	0.48129		0.99844	0.99000	O
1,1,2-Trichloroethane	0.15452	0.18950	0.19654	0.21778	0.20796	0.22315	AVG		0.19824		12.53454	15.00000	O
Dibromochloromethane	2418	15720	76075	193754	492537	726038	LNR	0.02146	0.27367		0.99941	0.99000	O
1,3-Dichloropropane	4393	33385	147519	365622	915143	1320662	LNR	0.00737	0.49904		0.99980	0.99000	O
1,2-Dibromoethane	2329	16172	73551	185208	462330	677654	LNR	0.02656	0.26586		0.99862	0.99000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2295
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-P
Lab File IDs : P4907.D P4906.D P4905.D P4904.D P4909.D P4908.D
Column ID:
Calibration Date(s): 24-MAR-18 08:24 24-MAR-18 11:18

2-Hexanone	5173	55715	314218	797360	2121868	3222823	LNR	0.22034	0.24229		0.99803	0.99000	O
Chlorobenzene	0.59343	0.75455	0.74109	0.79289	0.76059	0.78864	AVG		0.73853		9.99981	15.00000	O
Ethylbenzene	3819	26913	121588	313324	787651	1167219	LNR	0.02034	0.43931		0.99925	0.99000	O
1,1,1,2-Tetrachloroethane	0.17614	0.25334	0.24960	0.27537	0.26704	0.28122	AVG		0.25045		15.33387	15.00000	W
m+p-Xylenes	6859	62446	300995	792116	2026669	3009920	LNR	0.05786	0.56734		0.99913	0.99000	O
o-Xylene	2766	24036	137468	361558	922355	1397987	LNR	0.03721	0.52559		0.99840	0.99000	O
Styrene	3916	41654	232620	637688	1678283	2524988	LNR	0.04515	0.95263		0.99839	0.99000	O
Bromoform	1108	10620	50295	133639	347832	533991	LNR	0.04322	0.20022		0.99758	0.99000	O
Isopropylbenzene	5534	61794	332952	907538	2294574	3429981	LNR	0.02843	2.39111		0.99930	0.99000	O
Bromobenzene	0.41657	0.52284	0.55513	0.61255	0.57641	0.59425	AVG		0.54629		12.95745	15.00000	O
N-Propylbenzene	11879	94165	443014	1186384	2930499	4260358	LNR	0.01048	2.98101		0.99957	0.99000	O
1,1,2,2-Tetrachloroethane	0.56821	0.65071	0.66146	0.69895	0.66861	0.69751	AVG		0.65758		7.28565	15.00000	O
2-Chlorotoluene	6860	55167	261578	680994	1726372	2565629	LNR	0.02007	1.78566		0.99954	0.99000	O
1,2,3-Trichloropropane	0.46712	0.58324	0.60453	0.63682	0.63232	0.67732	AVG		0.60022		12.09159	15.00000	O
1,3,5-Trimethylbenzene	6251	57160	297390	802557	2041850	3063657	LNR	0.02902	2.13275		0.99924	0.99000	O
4-Chlorotoluene	7072	62711	285058	736090	1860279	2773087	LNR	0.01880	1.92756		0.99950	0.99000	O
tert-Butylbenzene	6068	56285	289670	788444	2021121	3061812	LNR	0.03402	2.12816		0.99892	0.99000	O
1,2,4-Trimethylbenzene	5676	60960	312203	833341	2123296	3151400	LNR	0.02527	2.19815		0.99951	0.99000	O
sec-Butylbenzene	7096	74395	364681	1002552	2479238	3686209	LNR	0.02099	2.57028		0.99931	0.99000	O
P-Isopropyltoluene	4568	53826	298282	829265	2078119	3158775	LNR	0.03355	2.19606		0.99879	0.99000	O
1,3-Dichlorobenzene	0.75465	1.10883	1.07177	1.18804	1.12070	1.16354	AVG		1.06792		14.87570	15.00000	O
1,4-Dichlorobenzene	1.01931	1.16490	1.16853	1.25187	1.19191	1.22177	AVG		1.16971		6.90296	15.00000	O
N-Butylbenzene	5579	49508	274271	764532	1901969	2886070	LNR	0.03126	2.00663		0.99881	0.99000	O
1,2-Dichlorobenzene	0.77177	0.97259	1.04105	1.14523	1.07274	1.12252	AVG		1.02098		13.37757	15.00000	O
1,2-Dibromo-3-Chloropropane	241	5047	21535	39723	137887	183276	QUA	0.02394	7.86537	-0.70150	0.99302	0.99000	O
Hexachlorobutadiene	0.14822	0.21328	0.20440	0.23135	0.21838	0.22560	AVG		0.20687		14.61358	15.00000	O
1,2,4-Trichlorobenzene	2713	19695	100159	266464	689287	1027846	LNR	0.02871	0.71611		0.99938	0.99000	O
Naphthalene	4793	41051	258789	683594	1845268	2702126	LNR	0.03632	1.89506		0.99948	0.99000	O
1,2,3-Trichlorobenzene	2672	20502	95023	234516	585678	867180	LNR	0.00964	0.60251		0.99965	0.99000	O
Dibromofluoromethane	0.48493	0.48817	0.48125	0.47879	0.48676	0.49401	AVG		0.48565		1.10653	15.00000	
1,2-Dichloroethane-D4	0.68286	0.66979	0.67322	0.66773	0.70181	0.72232	AVG		0.68629		3.15099	15.00000	
Toluene-D8	1.20372	1.23498	1.22132	1.23880	1.24982	1.25149	AVG		1.23335		1.47529	15.00000	
P-Bromofluorobenzene	0.45793	0.47325	0.48423	0.49349	0.50624	0.51404	AVG		0.48820		4.27419	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-p.i\P032618.b\P4915A.D
Report Date: 27-Mar-2018 12:01

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG225398-6
Level: LOW Operator: hg
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all50.sub
Method File: \\target_server\gg\chem\gcms-p.i\P032618.b\P8A05(63)D.m
Misc Info: WG225398,WG225398-4

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	52.6	105.21	80-120
	2	Chloromethane	50.0	50.1	100.14	80-120
	3	Vinyl chloride	50.0	49.2	98.51	80-120
	4	Bromomethane	50.0	42.4	84.82	80-120
	5	Chloroethane	50.0	50.1	100.17	80-120
	6	Trichlorofluoromet	50.0	45.4	90.84	80-120
	7	Diethyl Ether	50.0	50.5	100.93	80-120
	19	Tertiary-butyl alc	250	221	88.56	80-120
	8	1,1-Dichloroethene	50.0	47.9	95.72	80-120
	10	Carbon Disulfide	50.0	55.1	110.28	80-120
	9	Freon-113	50.0	46.8	93.67	80-120
	11	Iodomethane	50.0	60.4	120.82*	80-120
	12	Acrolein	250	249	99.80	80-120
	14	Methylene Chloride	50.0	48.5	96.96	80-120
	15	Acetone	50.0	44.8	89.67	80-120
	45	Isobutyl Alcohol	1000	921	92.08	80-120
	16	trans-1,2-Dichloro	50.0	49.0	98.05	80-120
	13	Allyl Chloride	50.0	53.4	106.89	80-120
	18	Methyl tert-butyl	50.0	48.3	96.65	80-120
	20	Acetonitrile	500	463	92.60	80-120
	21	Di-isopropyl ether	50.0	50.0	100.09	80-120
	22	Chloroprene	50.0	50.0	99.96	80-120
	39	Propionitrile	500	471	94.19	80-120
	40	Methacrylonitrile	500	463	92.66	80-120
	23	1,1-Dichloroethane	50.0	54.9	109.87	80-120
	24	Acrylonitrile	250	253	101.06	80-120
	25	Ethyl tertiary-but	50.0	49.6	99.25	80-120
	26	Vinyl Acetate	50.0	55.9	111.84	80-120
	27	cis-1,2-Dichloroet	50.0	49.6	99.28	80-120
M	98	1,2-Dichloroethyle	100	98.7	98.67	80-120
	52	Methyl Methacrylat	50.0	46.2	92.31	80-120
	28	2,2-Dichloropropan	50.0	51.8	103.69	80-120
	29	Bromochloromethane	50.0	53.2	106.37	80-120
	31	Chloroform	50.0	51.6	103.29	80-120
	32	Carbon Tetrachlori	50.0	52.8	105.72	80-120
	33	Tetrahydrofuran	50.0	51.4	102.72	80-120
	35	1,1,1-Trichloroeth	50.0	51.8	103.62	80-120
	37	1,1-Dichloropropen	50.0	47.6	95.21	80-120
	36	2-Butanone	50.0	46.6	93.32	80-120
	38	Benzene	50.0	53.2	106.36	80-120

Data File: \\target_server\gg\chem\gcms-p.i\P032618.b\P4915A.D
Report Date: 27-Mar-2018 12:01

SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
30	Cyclohexane	50.0	46.2	92.35	80-120
53	Ethyl Methacrylate	50.0	44.6	89.20	80-120
43	Tertiary-amyl meth	50.0	55.0	110.10	80-120
44	1,2-Dichloroethane	50.0	49.2	98.48	80-120
47	Trichloroethene	50.0	53.0	105.93	80-120
49	Dibromomethane	50.0	52.7	105.46	80-120
50	1,2-Dichloropropan	50.0	47.8	95.55	80-120
51	Bromodichlorometha	50.0	55.7	111.49	80-120
57	cis-1,3-dichloropr	50.0	46.6	93.30	80-120
54	1,4-Dioxane	1000	892	89.20	80-120
56	2-Chloroethylviny	50.0	0.00	*	80-120
59	Toluene	50.0	52.1	104.29	80-120
61	4-methyl-2-pentano	50.0	47.6	95.14	80-120
60	Tetrachloroethene	50.0	53.8	107.65	80-120
62	trans-1,3-Dichloro	50.0	46.9	93.73	80-120
63	1,1,2-Trichloroeth	50.0	51.3	102.63	80-120
64	Dibromochlorometha	50.0	49.5	98.93	80-120
65	1,3-Dichloropropan	50.0	47.4	94.85	80-120
66	1,2-Dibromoethane	50.0	46.5	93.04	80-120
67	2-Hexanone	50.0	46.0	91.90	80-120
69	Chlorobenzene	50.0	51.3	102.55	80-120
70	1-Chlorohexane	50.0	49.2	98.48	80-120
71	Ethylbenzene	50.0	47.5	95.09	80-120
72	1,1,1,2-Tetrachlor	50.0	53.4	106.81	80-120
M 106	Xylenes (total)	150	142	94.37	80-120
73	m+p-Xylenes	100	94.5	94.49	80-120
74	o-Xylene	50.0	47.1	94.14	80-120
75	Styrene	50.0	47.0	94.01	80-120
76	Bromoform	50.0	48.0	96.09	80-120
77	Isopropylbenzene	50.0	50.0	100.11	80-120
79	cis-1,4-Dichloro-2	50.0	47.1	94.23	80-120
86	trans-1,4-Dichloro	50.0	49.5	98.95	80-120
80	Bromobenzene	50.0	52.1	104.23	80-120
81	N-Propylbenzene	50.0	48.6	97.18	80-120
82	1,1,2,2-Tetrachlor	50.0	50.6	101.28	80-120
85	1,3,5-Trimethylben	50.0	47.3	94.66	80-120
83	2-Chlorotoluene	50.0	47.8	95.67	80-120
84	1,2,3-Trichloropro	50.0	48.4	96.71	80-120
87	4-Chlorotoluene	50.0	47.6	95.27	80-120
88	tert-Butylbenzene	50.0	47.2	94.30	80-120
89	Pentachloroethane	50.0	53.1	106.28	80-120
90	1,2,4-Trimethylben	50.0	47.9	95.77	80-120
92	P-Isopropyltoluene	50.0	48.2	96.42	80-120
93	1,3-Dichlorobenzen	50.0	52.2	104.35	80-120
95	1,4-Dichlorobenzen	50.0	49.7	99.32	80-120
97	N-Butylbenzene	50.0	48.4	96.90	80-120
91	sec-Butylbenzene	50.0	48.3	96.64	80-120
99	1,2-Dichlorobenzen	50.0	51.9	103.88	80-120
100	1,2-Dibromo-3-Chlo	50.0	48.9	97.89	80-120
101	1,3,5-Trichloroben	50.0	48.9	97.72	80-120
102	Hexachlorobutadien	50.0	52.0	103.96	80-120
103	1,2,4-Trichloroben	50.0	47.3	94.69	80-120
96	1,2,3-Trimethylben	50.0	48.6	97.12	80-120
104	Naphthalene	50.0	47.1	94.12	80-120

Data File: \\target_server\gg\chem\gcms-p.i\P032618.b\P4915A.D
Report Date: 27-Mar-2018 12:01

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	105 1,2,3-Trichloroben	50.0	47.4	94.73	80-120
	17 Methyl Acetate	50.0	44.2	88.39	80-120
	46 Methylcyclohexane	50.0	49.9	99.73	80-120
M	55 Total Alkylbenzene	350	336	95.98	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	34 Dibromofluorometha	50.0	50.4	100.82	80-119
$	42 1,2-Dichloroethane	50.0	49.0	97.99	81-118
$	58 Toluene-D8	50.0	50.6	101.21	89-112
$	78 P-Bromofluorobenze	50.0	51.2	102.34	85-114

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4904.D
Report Date: 27-Mar-2018 11:57

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032418.b\P4904.D
Lab Smp Id: WG225349-4
Inj Date : 24-MAR-2018 08:24
Operator : hg   Inst ID: gcms-p.i
Smp Info : WG225349-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032418.b\P8A05(63)D.m
Meth Date : 27-Mar-2018 11:56 gcms-p.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44   Cal File: P4908.D
Als bottle: 1   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.537	1.537	(0.235)	190068	50.0000	56.0	
2	Chloromethane	50	1.694	1.694	(0.259)	255337	50.0000	51.1	
3	Vinyl chloride	62	1.751	1.751	(0.268)	276613	50.0000	53.6	
4	Bromomethane	94	2.001	2.001	(0.306)	143784	50.0000	50.6	
5	Chloroethane	64	2.094	2.095	(0.320)	182597	50.0000	54.3	
6	Trichlorofluoromethane	101	2.208	2.209	(0.338)	414747	50.0000	54.4	
7	Diethyl Ether	59	2.459	2.459	(0.376)	196106	50.0000	52.4	
8	1,1-Dichloroethene	96	2.630	2.631	(0.402)	186300	50.0000	54.4	
9	Freon-113	151	2.659	2.659	(0.407)	149546	50.0000	51.4	
10	Carbon Disulfide	76	2.666	2.666	(0.408)	638862	50.0000	56.1	
11	Iodomethane	142	2.766	2.766	(0.423)	151621	50.0000	56.5	
12	Acrolein	56	2.945	2.945	(0.450)	196544	250.000	257	
13	Allyl Chloride	41	3.066	3.067	(0.469)	283180	50.0000	53.4	
14	Methylene Chloride	84	3.173	3.174	(0.485)	199294	50.0000	51.2	
15	Acetone	43	3.238	3.238	(0.495)	333688	250.000	266	
16	trans-1,2-Dichloroethene	96	3.338	3.338	(0.510)	185310	50.0000	51.4	
17	Methyl Acetate	43	3.359	3.360	(0.514)	177012	50.0000	49.5	
18	Methyl tert-butyl ether	73	3.452	3.453	(0.528)	504255	50.0000	48.0	
19	Tertiary-butyl alcohol	59	3.567	3.567	(0.545)	72716	250.000	217	
20	Acetonitrile	41	3.752	3.753	(0.574)	304832	500.000	489	
21	Di-isopropyl ether	45	3.888	3.889	(0.595)	583750	50.0000	48.0	
22	Chloroprene	53	4.017	4.017	(0.614)	287523	50.0000	49.2	
23	1,1-Dichloroethane	63	4.053	4.053	(0.620)	344286	50.0000	54.2	
24	Acrylonitrile	52	4.131	4.131	(0.632)	367101	250.000	261	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4904.D
Report Date: 27-Mar-2018 11:57

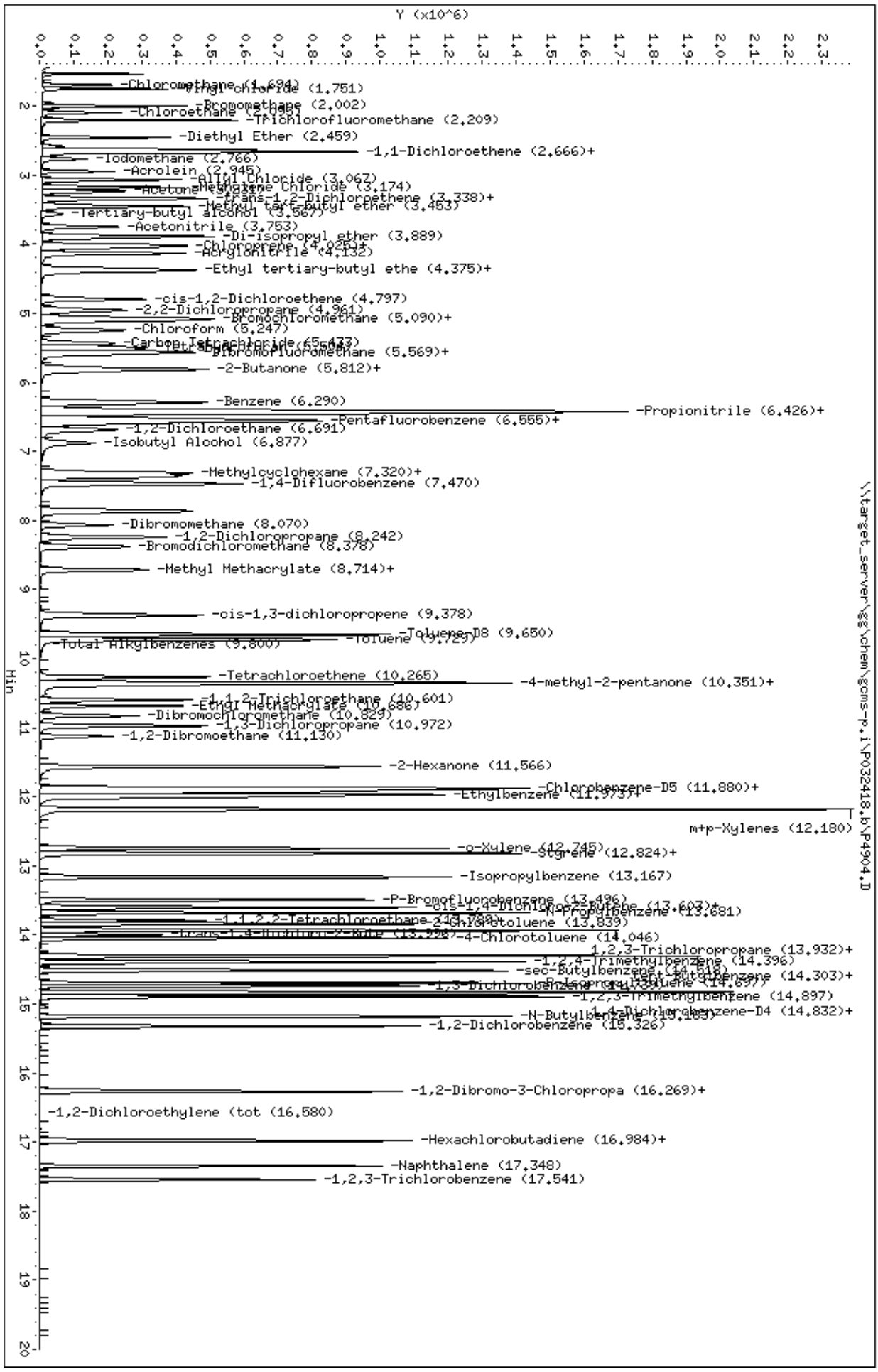
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25 Ethyl tertiary-butyl ether	59	4.367	4.368	(0.668)	506633	50.0000	47.6	
	26 Vinyl Acetate	43	4.396	4.396	(0.589)	431196	50.0000	48.6	
	27 cis-1,2-Dichloroethene	96	4.796	4.797	(0.733)	195979	50.0000	50.6	
	28 2,2-Dichloropropane	77	4.960	4.961	(0.758)	265000	50.0000	51.3	
	29 Bromochloromethane	128	5.103	5.104	(0.780)	88556	50.0000	55.9	
	30 Cyclohexane	56	5.082	5.082	(0.777)	324832	50.0000	51.4	
	31 Chloroform	83	5.246	5.247	(0.802)	327928	50.0000	53.2	
	32 Carbon Tetrachloride	117	5.439	5.440	(0.728)	239874	50.0000	55.0	
	33 Tetrahydrofuran	42	5.504	5.504	(0.842)	330154	250.000	240	
$	34 Dibromofluoromethane	113	5.561	5.561	(0.850)	209388	50.0000	49.3	
	35 1,1,1-Trichloroethane	97	5.575	5.576	(0.852)	291487	50.0000	55.2	
	36 2-Butanone	43	5.825	5.826	(0.891)	518362	250.000	247	
	37 1,1-Dichloropropene	75	5.811	5.812	(0.778)	263446	50.0000	50.4	
	38 Benzene	78	6.290	6.290	(0.842)	780106	50.0000	55.6	
	39 Propionitrile	54	6.397	6.398	(0.978)	342641	500.000	505	
	40 Methacrylonitrile	41	6.426	6.426	(0.983)	1449514	500.000	478	
*	41 Pentafluorobenzene	168	6.540	6.541	(1.000)	437331	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.569	6.569	(1.004)	292018	50.0000	48.6	
	43 Tertiary-amyl methyl ether	73	6.569	6.569	(1.004)	468027	50.0000	52.4	
	44 1,2-Dichloroethane	62	6.690	6.691	(0.896)	281102	50.0000	50.7	
	45 Isobutyl Alcohol	43	6.876	6.877	(1.051)	158211	1000.00	976	
	46 Methylcyclohexane	83	7.312	7.313	(1.118)	302813	50.0000	50.9	
	47 Trichloroethene	95	7.362	7.363	(0.986)	190179	50.0000	56.3	
*	48 1,4-Difluorobenzene	114	7.469	7.470	(1.000)	713976	50.0000		
	49 Dibromomethane	93	8.070	8.070	(1.080)	118169	50.0000	55.4	
	50 1,2-Dichloropropane	63	8.241	8.242	(1.103)	196680	50.0000	49.9	
	51 Bromodichloromethane	83	8.384	8.385	(1.122)	255140	50.0000	55.7	
	52 Methyl Methacrylate	41	8.713	8.714	(1.167)	176715	50.0000	45.6	
	53 Ethyl Methacrylate	69	10.686	10.686	(1.431)	266908	50.0000	46.5	
	54 1,4-Dioxane	88	8.720	8.721	(1.167)	47532	1000.00	1020	
M	55 Total Alkylbenzenes	100				6207075	50.0000	(a)	
	57 cis-1,3-dichloropropene	75	9.378	9.378	(1.255)	344573	50.0000	49.0	
$	58 Toluene-D8	98	9.650	9.650	(1.292)	884470	50.0000	50.2	
	59 Toluene	92	9.728	9.729	(1.302)	495308	50.0000	54.0	
	60 Tetrachloroethene	164	10.271	10.272	(0.865)	148029	50.0000	55.4	
	61 4-methyl-2-pentanone	43	10.350	10.351	(1.386)	1132623	250.000	236	
	62 trans-1,3-Dichloropropene	75	10.379	10.379	(1.389)	319257	50.0000	48.4	
	63 1,1,2-Trichloroethane	83	10.600	10.601	(1.419)	155489	50.0000	54.9	
	64 Dibromochloromethane	129	10.829	10.829	(0.912)	193754	50.0000	50.1	
	65 1,3-Dichloropropane	76	10.972	10.972	(0.924)	365622	50.0000	51.1	
	66 1,2-Dibromoethane	107	11.129	11.130	(1.490)	185208	50.0000	50.1	
	67 2-Hexanone	43	11.558	11.559	(0.974)	797360	250.000	239	
*	68 Chlorobenzene-D5	117	11.873	11.873	(1.000)	722364	50.0000		
	69 Chlorobenzene	112	11.894	11.894	(1.002)	572756	50.0000	53.7	
	70 1-Chlorohexane	91	11.923	11.923	(1.004)	313618	50.0000	53.9	
	71 Ethylbenzene	106	11.973	11.973	(1.008)	313324	50.0000	50.4	
	72 1,1,1,2-Tetrachloroethane	131	12.008	12.009	(1.011)	198918	50.0000	55.0	
	73 m+p-Xylenes	106	12.180	12.180	(1.026)	792116	100.000	99.5	
	74 o-Xylene	106	12.745	12.745	(1.073)	361558	50.0000	49.5	
	75 Styrene	104	12.823	12.824	(1.080)	637688	50.0000	48.6	
	76 Bromoform	173	12.823	12.824	(1.080)	133639	50.0000	48.4	
	77 Isopropylbenzene	105	13.166	13.167	(0.888)	907538	50.0000	50.8	
$	78 P-Bromofluorobenzene	95	13.495	13.496	(1.807)	352340	50.0000	50.5	
	79 cis-1,4-Dichloro-2-Butene	53	13.610	13.610	(0.918)	103132	50.0000	49.4	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4904.D
Report Date: 27-Mar-2018 11:57

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	80 Bromobenzene	156	13.602	13.603	(0.917)	235543	50.0000	56.1	
	81 N-Propylbenzene	91	13.681	13.681	(0.922)	1186384	50.0000	52.3	
	82 1,1,2,2-Tetrachloroethane	83	13.788	13.789	(0.930)	268767	50.0000	53.1	
	83 2-Chlorotoluene	91	13.845	13.846	(0.933)	680994	50.0000	50.6	
	84 1,2,3-Trichloropropane	75	13.924	13.925	(0.939)	244874	50.0000	53.0	
	85 1,3,5-Trimethylbenzene	105	13.938	13.939	(0.940)	802557	50.0000	50.4	
	86 trans-1,4-Dichloro-2-Butene	53	13.996	13.996	(0.944)	84406	50.0000	53.5	
	87 4-Chlorotoluene	91	14.046	14.046	(0.947)	736090	50.0000	50.6	
	88 tert-Butylbenzene	119	14.303	14.303	(0.964)	788444	50.0000	49.9	
	89 Pentachloroethane	165	14.310	14.311	(0.965)	112064	50.0000	55.7	
	90 1,2,4-Trimethylbenzene	105	14.396	14.396	(0.971)	833341	50.0000	50.6	
	91 sec-Butylbenzene	105	14.517	14.518	(0.979)	1002552	50.0000	51.8	
	92 P-Isopropyltoluene	119	14.696	14.697	(0.991)	829265	50.0000	50.8	
	93 1,3-Dichlorobenzene	146	14.739	14.739	(0.994)	456835	50.0000	55.6	
*	94 1,4-Dichlorobenzene-D4	152	14.832	14.832	(1.000)	384527	50.0000		
	95 1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	481378	50.0000	53.5	
	96 1,2,3-Trimethylbenzene	105	14.896	14.897	(1.004)	881563	50.0000	50.7	
	97 N-Butylbenzene	91	15.182	15.183	(1.024)	764532	50.0000	51.1	
M	98 1,2-Dichloroethylene (total)	96				381289	50.0000	(a)	
	99 1,2-Dichlorobenzene	146	15.325	15.326	(1.033)	440370	50.0000	56.1	
	100 1,2-Dibromo-3-Chloropropane	75	16.240	16.239	(1.095)	39723	50.0000	41.4	
	101 1,3,5-Trichlorobenzene	180	16.269	16.268	(1.097)	306037	50.0000	51.9	
	102 Hexachlorobutadiene	225	16.969	16.969	(1.144)	88959	50.0000	55.9	
	103 1,2,4-Trichlorobenzene	180	16.991	16.991	(1.146)	266464	50.0000	49.8	
	104 Naphthalene	128	17.348	17.347	(1.170)	683594	50.0000	48.7	
	105 1,2,3-Trichlorobenzene	180	17.548	17.549	(1.183)	234516	50.0000	51.1	
M	106 Xylenes (total)	106				1153674	150.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4904.D
Date : 24-MAR-2018 08:24
Client ID:
Sample Info: WG225349-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-p.i\P032418.b\P4904.D
-Chloromethane (1.694)
-Vinyl chloride (1.751)
-Bromomethane (2.002)
-Chloroethane (2.098)
-Trichlorofluoromethane (2.209)
-Diethyl Ether (2.459)
-1,1-Dichloroethene (2.666)+
-Iodomethane (2.766)
-Acrolein (2.945)
-Allyl Chloride (3.067)
-Methylene Chloride (3.174)
-Acetone (3.233)
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.453)
-Tertiary-butyl alcohol (3.567)
-Acetonitrile (3.753)
-Di-isopropyl ether (3.889)
-Chloroprene (4.025)+
-Acrylonitrile (4.132)
-Ethyl tertiary-butyl ethe (4.375)+
-cis-1,2-Dichloroethene (4.797)
-2,2-Dichloropropane (4.961)
-Bromochloromethane (5.090)+
-Chloroform (5.247)
-Carbon Tetrachloride (5.403)
-Dibromofluoromethane (5.569)+
-2-Butanone (5.812)+
-Benzene (6.290)
-Propionitrile (6.426)+
-Pentafluorobenzene (6.555)+
-1,2-Dichloroethane (6.691)
-Isobutyl Alcohol (6.877)
-Methylcyclohexane (7.320)+
-1,4-Difluorobenzene (7.470)
-Dibromomethane (8.070)
-1,2-Dichloropropane (8.242)
-Bromodichloromethane (8.378)
-Methyl Methacrylate (8.714)+
-cis-1,3-dichloropropene (9.378)
-Toluene-D8 (9.650)
-Total Alkylbenzenes (9.800)
-Toluene (9.729)
-Tetrachloroethene (10.265)
-4-methyl-2-pentanone (10.351)+
-1,1,2-Trichloroethane (10.601)
-Ethyl Methacrylate (10.666)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.130)
-2-Hexanone (11.566)
-Chlorobenzene-D5 (11.880)+
-Ethylbenzene (11.973)+
m+p-Xylenes (12.180)
-o-Xylene (12.745)
-Styrene (12.824)+
-Isopropylbenzene (13.167)
-P-Bromofluorobenzene (13.496)
-cis-1,4-Dichloro-2-Butene (13.607)+
-N-Propylbenzene (13.681)
-1,1,2,2-Tetrachloroethane (13.732)
-2-Chlorotoluene (13.839)
-trans-1,4-Dichloro-2-Bute (13.998)
-4-Chlorotoluene (14.046)
-1,2,3-Trichloropropane (13.932)+
-1,2,4-Trimethylbenzene (14.396)
-sec-Butylbenzene (14.518)
-tert-Butylbenzene (14.303)+
-p-Isopropyltoluene (14.697)+
-1,3-Dichlorobenzene (14.739)
-1,2,3-Trimethylbenzene (14.897)
-1,4-Dichlorobenzene-D4 (14.832)+
-N-Butylbenzene (15.189)
-1,2-Dichlorobenzene (15.326)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.984)+
-Naphthalene (17.348)
-1,2,3-Trichlorobenzene (17.541)

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4905.D
Report Date: 27-Mar-2018 11:57

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032418.b\P4905.D
Lab Smp Id: WG225349-3
Inj Date : 24-MAR-2018 09:01
Operator : hg   Inst ID: gcms-p.i
Smp Info : WG225349-3
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032418.b\P8A05(63)D.m
Meth Date : 27-Mar-2018 11:56 gcms-p.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 09:01   Cal File: P4905.D
Als bottle: 2   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.538	1.537	(0.235)	72114	20.0000	19.2	
2	Chloromethane	50	1.688	1.694	(0.258)	102758	20.0000	18.6	
3	Vinyl chloride	62	1.753	1.751	(0.268)	111422	20.0000	19.5	
4	Bromomethane	94	2.003	2.001	(0.306)	60152	20.0000	19.2	
5	Chloroethane	64	2.103	2.095	(0.322)	71663	20.0000	19.3	
6	Trichlorofluoromethane	101	2.210	2.209	(0.338)	162416	20.0000	19.3	
7	Diethyl Ether	59	2.460	2.459	(0.376)	84488	20.0000	20.4	
8	1,1-Dichloroethene	96	2.632	2.631	(0.402)	75818	20.0000	20.0	
9	Freon-113	151	2.668	2.659	(0.408)	61969	20.0000	19.3	
10	Carbon Disulfide	76	2.668	2.666	(0.408)	248953	20.0000	19.8	
11	Iodomethane	142	2.768	2.766	(0.423)	57971	20.0000	19.6	
12	Acrolein	56	2.946	2.945	(0.450)	86230	100.000	102	
13	Allyl Chloride	41	3.075	3.067	(0.470)	116870	20.0000	19.9	
14	Methylene Chloride	84	3.182	3.174	(0.486)	84423	20.0000	19.6	
15	Acetone	43	3.239	3.238	(0.495)	148358	100.000	107	
16	trans-1,2-Dichloroethene	96	3.339	3.338	(0.511)	76170	20.0000	19.3	
17	Methyl Acetate	43	3.361	3.360	(0.514)	79410	20.0000	20.1	
18	Methyl tert-butyl ether	73	3.454	3.453	(0.528)	212548	20.0000	19.0	
19	Tertiary-butyl alcohol	59	3.568	3.567	(0.545)	33702	100.000	97.8	
20	Acetonitrile	41	3.754	3.753	(0.574)	142462	200.000	207	
21	Di-isopropyl ether	45	3.890	3.889	(0.595)	245179	20.0000	19.0	
22	Chloroprene	53	4.019	4.017	(0.614)	114166	20.0000	18.6	
23	1,1-Dichloroethane	63	4.054	4.053	(0.620)	140108	20.0000	20.0	
24	Acrylonitrile	52	4.140	4.131	(0.633)	159418	100.000	102	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4905.D
Report Date: 27-Mar-2018 11:57

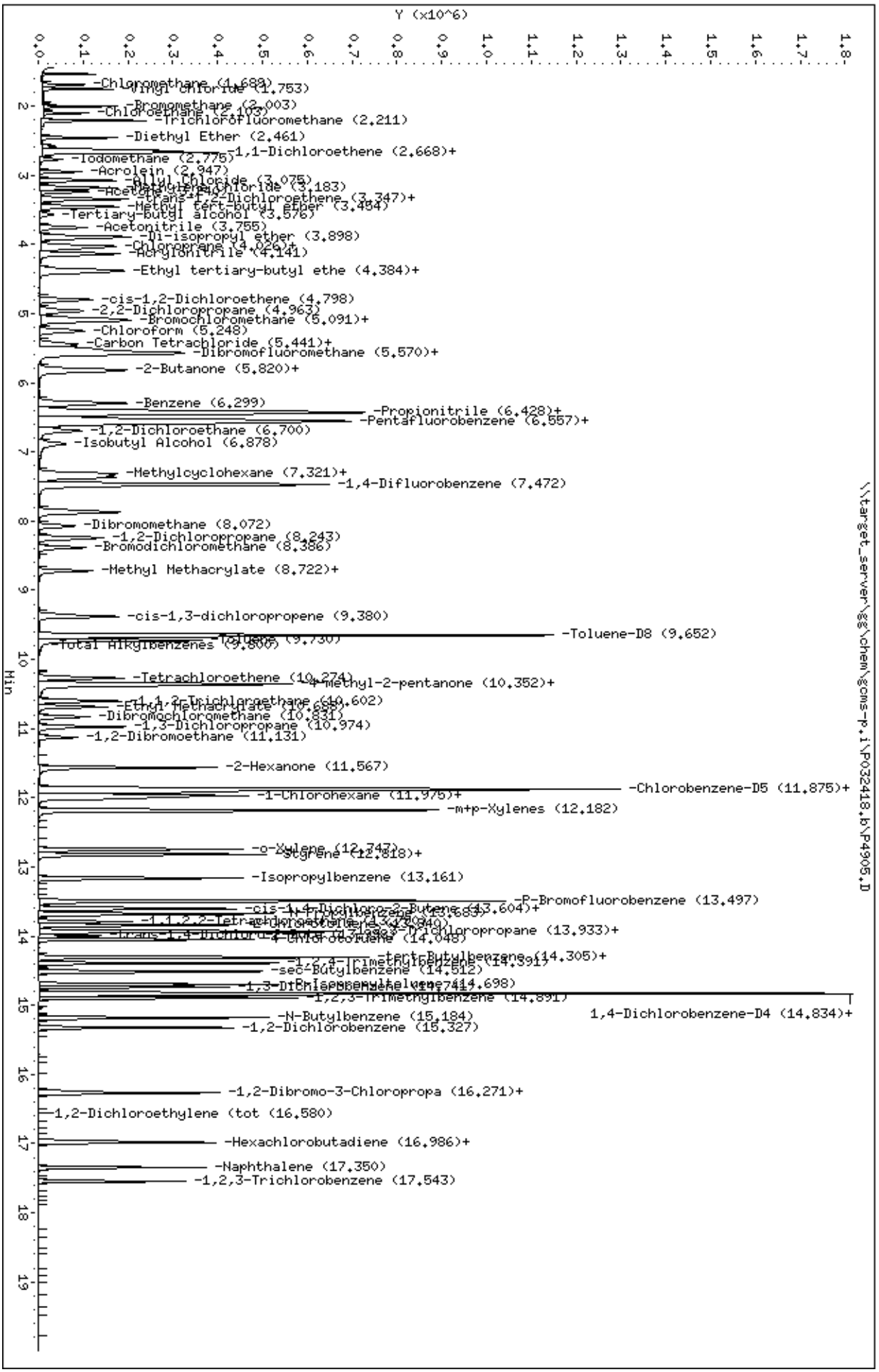
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 Ethyl tertiary-butyl ether	59	4.376	4.368	(0.669)	207044	20.0000	18.6	
	26 Vinyl Acetate	43	4.405	4.396	(0.590)	181328	20.0000	19.0	
	27 cis-1,2-Dichloroethene	96	4.805	4.797	(0.735)	77133	20.0000	18.6	
	28 2,2-Dichloropropane	77	4.969	4.961	(0.760)	102049	20.0000	18.4	
	29 Bromochloromethane	128	5.112	5.104	(0.781)	37438	20.0000	20.7	
	30 Cyclohexane	56	5.084	5.082	(0.777)	120076	20.0000	18.2	
	31 Chloroform	83	5.248	5.247	(0.802)	134806	20.0000	19.8	
	32 Carbon Tetrachloride	117	5.448	5.440	(0.729)	94668	20.0000	19.5	
	33 Tetrahydrofuran	42	5.512	5.504	(0.843)	134492	100.000	94.5	
$	34 Dibromofluoromethane	113	5.570	5.561	(0.851)	232529	50.0000	49.5	
	35 1,1,1-Trichloroethane	97	5.584	5.576	(0.854)	114731	20.0000	19.7	
	36 2-Butanone	43	5.827	5.826	(0.891)	219500	100.000	97.8	
	37 1,1-Dichloropropene	75	5.806	5.812	(0.777)	99525	20.0000	18.1	
	38 Benzene	78	6.292	6.290	(0.842)	307004	20.0000	19.7	
	39 Propionitrile	54	6.406	6.398	(0.979)	150664	200.000	201	
	40 Methacrylonitrile	41	6.435	6.426	(0.984)	625257	200.000	196	
*	41 Pentafluorobenzene	168	6.542	6.541	(1.000)	483177	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.570	6.569	(1.004)	325284	50.0000	49.0	
	43 Tertiary-amyl methyl ether	73	6.578	6.569	(1.005)	187347	20.0000	19.0	
	44 1,2-Dichloroethane	62	6.699	6.691	(0.897)	117872	20.0000	19.2	
	45 Isobutyl Alcohol	43	6.878	6.877	(1.051)	61163	400.000	374	
	46 Methylcyclohexane	83	7.321	7.313	(1.119)	112529	20.0000	18.2	
	47 Trichloroethene	95	7.364	7.363	(0.986)	72971	20.0000	19.5	
*	48 1,4-Difluorobenzene	114	7.471	7.470	(1.000)	792194	50.0000		
	49 Dibromomethane	93	8.071	8.070	(1.080)	46458	20.0000	19.6	
	50 1,2-Dichloropropane	63	8.243	8.242	(1.103)	76670	20.0000	18.3	
	51 Bromodichloromethane	83	8.386	8.385	(1.122)	99650	20.0000	19.6	
	52 Methyl Methacrylate	41	8.715	8.714	(1.166)	66987	20.0000	17.8	
	53 Ethyl Methacrylate	69	10.688	10.686	(1.431)	97407	20.0000	17.5	
	54 1,4-Dioxane	88	8.722	8.721	(1.167)	20805	400.000	402	
M	55 Total Alkylbenzenes	100				2279511	20.0000	(a)	
	57 cis-1,3-dichloropropene	75	9.387	9.378	(1.256)	133539	20.0000	18.3	
$	58 Toluene-D8	98	9.651	9.650	(1.292)	967519	50.0000	49.5	
	59 Toluene	92	9.730	9.729	(1.302)	199696	20.0000	19.6	
	60 Tetrachloroethene	164	10.266	10.272	(0.865)	57519	20.0000	20.1	
	61 4-methyl-2-pentanone	43	10.352	10.351	(1.386)	463587	100.000	94.7	
	62 trans-1,3-Dichloropropene	75	10.380	10.379	(1.389)	125419	20.0000	18.4	
	63 1,1,2-Trichloroethane	83	10.602	10.601	(1.419)	62280	20.0000	19.8	
	64 Dibromochloromethane	129	10.831	10.829	(0.912)	76075	20.0000	19.0	
	65 1,3-Dichloropropane	76	10.974	10.972	(0.924)	147519	20.0000	19.4	
	66 1,2-Dibromoethane	107	11.131	11.130	(1.490)	73551	20.0000	18.8	
	67 2-Hexanone	43	11.567	11.559	(0.974)	314218	100.000	94.7	
*	68 Chlorobenzene-D5	117	11.874	11.873	(1.000)	774472	50.0000		
	69 Chlorobenzene	112	11.896	11.894	(1.002)	229582	20.0000	20.1	
	70 1-Chlorohexane	91	11.924	11.923	(1.004)	101696	20.0000	16.5	
	71 Ethylbenzene	106	11.974	11.973	(1.008)	121588	20.0000	18.9	
	72 1,1,1,2-Tetrachloroethane	131	12.010	12.009	(1.011)	77323	20.0000	19.9	
	73 m+p-Xylenes	106	12.182	12.180	(1.026)	300995	40.0000	37.1	
	74 o-Xylene	106	12.746	12.745	(1.073)	137468	20.0000	18.7	
	75 Styrene	104	12.825	12.824	(1.080)	232620	20.0000	18.0	
	76 Bromoform	173	12.825	12.824	(1.080)	50295	20.0000	18.4	
	77 Isopropylbenzene	105	13.161	13.167	(0.887)	332952	20.0000	18.3	
$	78 P-Bromofluorobenzene	95	13.497	13.496	(1.807)	383606	50.0000	49.6	
	79 cis-1,4-Dichloro-2-Butene	53	13.611	13.610	(0.918)	40267	20.0000	19.0	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4905.D
Report Date: 27-Mar-2018 11:57

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	80 Bromobenzene	156	13.604	13.603	(0.917)	91782	20.0000	20.3	
	81 N-Propylbenzene	91	13.683	13.681	(0.922)	443014	20.0000	18.5	
	82 1,1,2,2-Tetrachloroethane	83	13.790	13.789	(0.930)	109361	20.0000	20.1	
	83 2-Chlorotoluene	91	13.840	13.846	(0.933)	261578	20.0000	18.7	
	84 1,2,3-Trichloropropane	75	13.926	13.925	(0.939)	99949	20.0000	20.1	
	85 1,3,5-Trimethylbenzene	105	13.940	13.939	(0.940)	297390	20.0000	18.3	
	86 trans-1,4-Dichloro-2-Butene	53	13.997	13.996	(0.944)	32227	20.0000	19.1	
	87 4-Chlorotoluene	91	14.047	14.046	(0.947)	285058	20.0000	18.8	
	88 tert-Butylbenzene	119	14.305	14.303	(0.964)	289670	20.0000	18.2	
	89 Pentachloroethane	165	14.312	14.311	(0.965)	43827	20.0000	20.3	
	90 1,2,4-Trimethylbenzene	105	14.390	14.396	(0.970)	312203	20.0000	18.4	
	91 sec-Butylbenzene	105	14.512	14.518	(0.978)	364681	20.0000	18.2	
	92 P-Isopropyltoluene	119	14.698	14.697	(0.991)	298282	20.0000	18.1	
	93 1,3-Dichlorobenzene	146	14.741	14.739	(0.994)	177200	20.0000	20.1	
*	94 1,4-Dichlorobenzene-D4	152	14.833	14.832	(1.000)	413334	50.0000		
	95 1,4-Dichlorobenzene	146	14.848	14.847	(1.001)	193198	20.0000	20.0	
	96 1,2,3-Trimethylbenzene	105	14.898	14.897	(1.004)	342862	20.0000	18.9	
	97 N-Butylbenzene	91	15.184	15.183	(1.024)	274271	20.0000	18.1	
M	98 1,2-Dichloroethylene (total)	96				153303	20.0000	(a)	
	99 1,2-Dichlorobenzene	146	15.327	15.326	(1.033)	172121	20.0000	20.4	
	100 1,2-Dibromo-3-Chloropropane	75	16.242	16.239	(1.095)	21535	20.0000	21.6	
	101 1,3,5-Trichlorobenzene	180	16.270	16.268	(1.097)	116715	20.0000	18.8	
	102 Hexachlorobutadiene	225	16.971	16.969	(1.144)	33795	20.0000	19.8	
	103 1,2,4-Trichlorobenzene	180	16.985	16.991	(1.145)	100159	20.0000	18.4	
	104 Naphthalene	128	17.350	17.347	(1.170)	258789	20.0000	18.3	
	105 1,2,3-Trichlorobenzene	180	17.543	17.549	(1.183)	95023	20.0000	19.6	
M	106 Xylenes (total)	106				438463	60.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4905.D
Date : 24-MAR-2018 09:01
Client ID:
Sample Info: WG225349-3
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032418.b\P4905.D
Y (x10^6)
Min
-Chloromethane (1.688)
-Vinyl chloride (1.753)
-Bromomethane (2.003)
-Chloroethane (2.103)
-Trichlorofluoromethane (2.211)
-Diethyl Ether (2.461)
-1,1-Dichloroethene (2.668)+
-Iodomethane (2.775)
-Acrolein (2.947)
-Allyl Chloride (3.075)
-Methylene Chloride (3.183)
-Acetone (3.240)
-trans+cis-1,2-Dichloroethene (3.347)+
-Methyl tert-butyl ether (3.454)
-Tertiary-butyl alcohol (3.576)
-Acetonitrile (3.755)
-Di-isopropyl ether (3.898)
-Chloroprene (4.026)+
-Acrylonitrile (4.141)
-Ethyl tertiary-butyl ethe (4.384)+
-cis-1,2-Dichloroethene (4.798)
-2,2-Dichloropropane (4.963)
-Bromochloromethane (5.091)+
-Chloroform (5.248)
-Carbon Tetrachloride (5.441)+
-Dibromofluoromethane (5.570)+
-2-Butanone (5.820)+
-Benzene (6.299)
-Propionitrile (6.428)+
-Pentafluorobenzene (6.557)+
-1,2-Dichloroethane (6.700)
-Isobutyl Alcohol (6.878)
-Methylcyclohexane (7.321)+
-1,4-Difluorobenzene (7.472)
-Dibromomethane (8.072)
-1,2-Dichloropropane (8.243)
-Bromodichloromethane (8.386)
-Methyl Methacrylate (8.722)+
-cis-1,3-dichloropropene (9.380)
-Toluene-D8 (9.652)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.274)
-4-methyl-2-pentanone (10.352)+
-1,1,2-Trichloroethane (10.602)
-Ethyl Methacrylate (10.688)
-Dibromochloromethane (10.831)
-1,3-Dichloropropane (10.974)
-1,2-Dibromoethane (11.131)
-2-Hexanone (11.567)
-Chlorobenzene-D5 (11.875)+
-1-Chlorohexane (11.975)+
-m+p-Xylenes (12.182)
-o-Xylene (12.747)
-Styrene (12.818)+
-Isopropylbenzene (13.161)
-P-Bromofluorobenzene (13.497)
-cis-1,4-Dichloro-2-Butene (13.604)+
-1,1,2,2-Tetrachloroethane (13.840)
-trans-1,4-Dichloro-2-Butene (13.933)+
-1,2,3-Trichloropropane (13.933)+
-4-Chlorotoluene (14.048)
-tert-Butylbenzene (14.305)+
-1,2,4-Trimethylbenzene (14.391)
-sec-Butylbenzene (14.512)
-1,3-Dichlorobenzene (14.698)
-p-Isopropyltoluene (14.744)
-1,2,3-Trimethylbenzene (14.891)
1,4-Dichlorobenzene-D4 (14.834)+
-N-Butylbenzene (15.184)
-1,2-Dichlorobenzene (15.327)
-1,2-Dibromo-3-Chloropropa (16.271)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.986)+
-Naphthalene (17.350)
-1,2,3-Trichlorobenzene (17.543)

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4906.D
Report Date: 27-Mar-2018 11:57

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032418.b\P4906.D
Lab Smp Id: WG225349-2
Inj Date : 24-MAR-2018 09:35
Operator : hg   Inst ID: gcms-p.i
Smp Info : WG225349-2
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032418.b\P8A05(63)D.m
Meth Date : 27-Mar-2018 11:56 gcms-p.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 09:35   Cal File: P4906.D
Als bottle: 3   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.539	1.537	(0.235)	20280	5.00000	5.5	
2	Chloromethane	50	1.689	1.694	(0.258)	27957	5.00000	5.1	
3	Vinyl chloride	62	1.753	1.751	(0.268)	28353	5.00000	5.0	
4	Bromomethane	94	2.003	2.001	(0.306)	17121	5.00000	5.5	
5	Chloroethane	64	2.104	2.095	(0.322)	19301	5.00000	5.3	
6	Trichlorofluoromethane	101	2.211	2.209	(0.338)	41896	5.00000	5.0	
7	Diethyl Ether	59	2.461	2.459	(0.376)	20913	5.00000	5.1	
8	1,1-Dichloroethene	96	2.633	2.631	(0.402)	18291	5.00000	4.9	
9	Freon-113	151	2.668	2.659	(0.408)	16932	5.00000	5.4	
10	Carbon Disulfide	76	2.668	2.666	(0.408)	59389	5.00000	4.8	
11	Iodomethane	142	2.768	2.766	(0.423)	12852	5.00000	4.4	
12	Acrolein	56	2.947	2.945	(0.450)	20388	25.0000	24.5	
13	Allyl Chloride	41	3.069	3.067	(0.469)	28316	5.00000	4.9	
14	Methylene Chloride	84	3.183	3.174	(0.487)	21706	5.00000	5.1	
15	Acetone	43	3.233	3.238	(0.494)	34643	25.0000	25.4	
16	trans-1,2-Dichloroethene	96	3.340	3.338	(0.511)	18711	5.00000	5.0	
17	Methyl Acetate	43	3.362	3.360	(0.514)	19476	5.00000	5.0	
18	Methyl tert-butyl ether	73	3.455	3.453	(0.528)	45918	5.00000	5.1	
19	Tertiary-butyl alcohol	59	3.562	3.567	(0.544)	7596	25.0000	31.2	
20	Acetonitrile	41	3.748	3.753	(0.573)	36406	50.0000	53.7	
21	Di-isopropyl ether	45	3.898	3.889	(0.596)	52889	5.00000	5.1	
22	Chloroprene	53	4.019	4.017	(0.614)	24700	5.00000	5.1	
23	1,1-Dichloroethane	63	4.048	4.053	(0.619)	33538	5.00000	4.8	
24	Acrylonitrile	52	4.134	4.131	(0.632)	38170	25.0000	24.9	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4906.D
Report Date: 27-Mar-2018 11:57

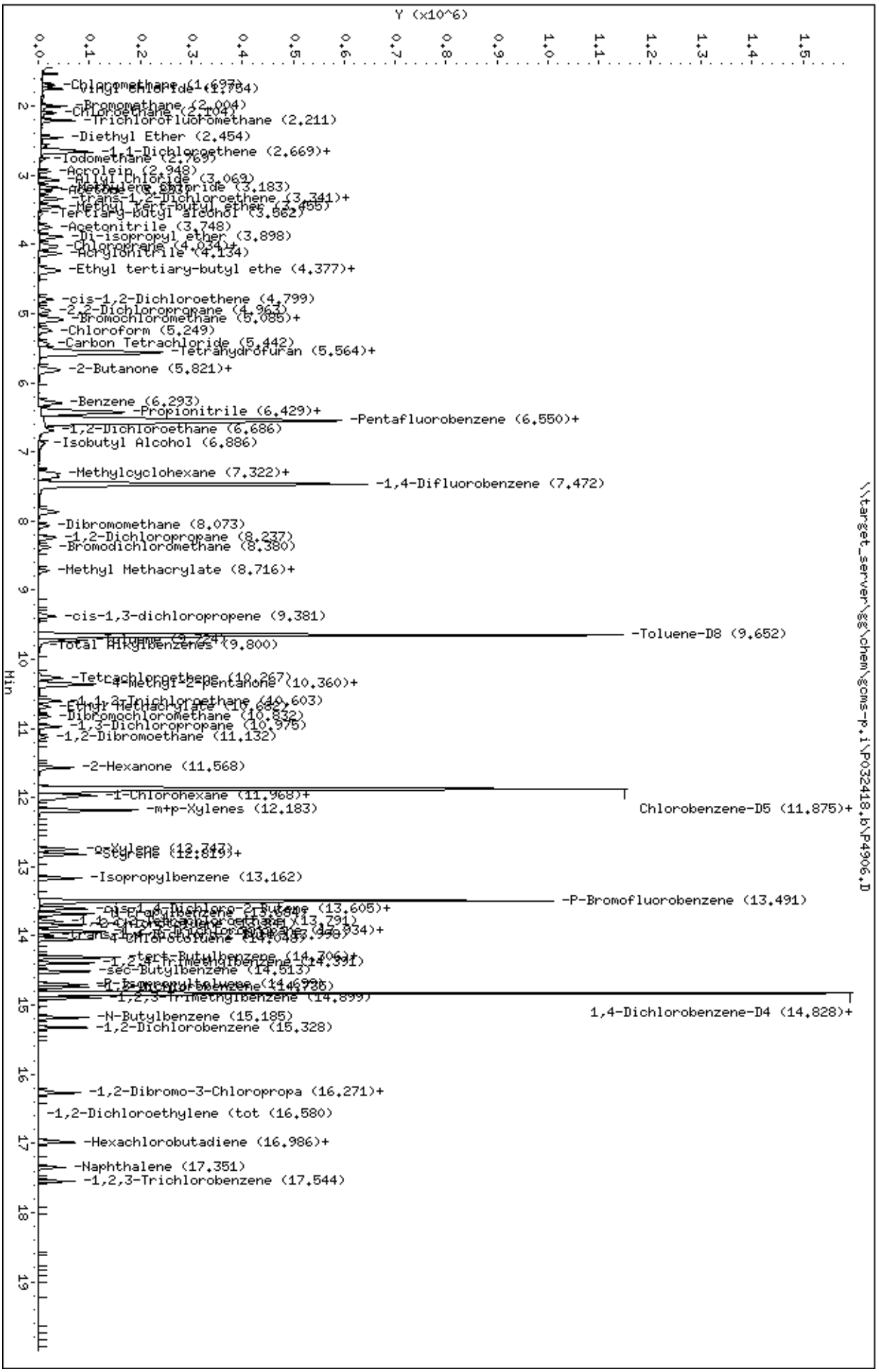
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 Ethyl tertiary-butyl ether	59	4.377	4.368	(0.669)	41780	5.00000	5.0	
	26 Vinyl Acetate	43	4.398	4.396	(0.589)	39846	5.00000	5.0	
	27 cis-1,2-Dichloroethene	96	4.798	4.797	(0.733)	18293	5.00000	5.2	
	28 2,2-Dichloropropane	77	4.963	4.961	(0.759)	23320	5.00000	4.8	
	29 Bromochloromethane	128	5.106	5.104	(0.780)	8989	5.00000	4.2	
	30 Cyclohexane	56	5.084	5.082	(0.777)	24706	5.00000	5.0	
	31 Chloroform	83	5.242	5.247	(0.801)	33853	5.00000	5.0	
	32 Carbon Tetrachloride	117	5.442	5.440	(0.728)	23332	5.00000	5.0	
	33 Tetrahydrofuran	42	5.506	5.504	(0.842)	27149	25.0000	27.2	
$	34 Dibromofluoromethane	113	5.563	5.561	(0.850)	232258	50.0000	50.2	
	35 1,1,1-Trichloroethane	97	5.578	5.576	(0.853)	27640	5.00000	4.8	
	36 2-Butanone	43	5.828	5.826	(0.891)	49176	25.0000	26.2	
	37 1,1-Dichloropropene	75	5.806	5.812	(0.777)	22328	5.00000	5.2	
	38 Benzene	78	6.299	6.290	(0.843)	73308	5.00000	4.8	
	39 Propionitrile	54	6.407	6.398	(0.979)	34517	50.0000	46.8	
	40 Methacrylonitrile	41	6.428	6.426	(0.983)	142207	50.0000	57.9	
*	41 Pentafluorobenzene	168	6.542	6.541	(1.000)	475772	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.564	6.569	(1.003)	318669	50.0000	48.8	
	43 Tertiary-amyl methyl ether	73	6.571	6.569	(1.004)	41738	5.00000	4.3	
	44 1,2-Dichloroethane	62	6.685	6.691	(0.895)	30640	5.00000	5.1	
	45 Isobutyl Alcohol	43	6.893	6.877	(1.054)	11177	100.000	92.1(M)	M9
	46 Methylcyclohexane	83	7.314	7.313	(1.118)	24328	5.00000	5.2	
	47 Trichloroethene	95	7.372	7.363	(0.987)	18264	5.00000	5.0	
*	48 1,4-Difluorobenzene	114	7.472	7.470	(1.000)	767581	50.0000		
	49 Dibromomethane	93	8.072	8.070	(1.080)	11159	5.00000	4.9	
	50 1,2-Dichloropropane	63	8.251	8.242	(1.104)	17337	5.00000	5.1	
	51 Bromodichloromethane	83	8.380	8.385	(1.121)	23264	5.00000	4.7	
	52 Methyl Methacrylate	41	8.715	8.714	(1.166)	11890	5.00000	6.0	WAS
	53 Ethyl Methacrylate	69	10.681	10.686	(1.430)	15860	5.00000	5.6	*5:52 am, Apr 04, 2018*
	54 1,4-Dioxane	88	8.715	8.721	(1.166)	4108	100.000	81.8	
M	55 Total Alkylbenzenes	100				446299	5.00000	(a)	
	57 cis-1,3-dichloropropene	75	9.380	9.378	(1.255)	25795	5.00000	5.1	
$	58 Toluene-D8	98	9.652	9.650	(1.292)	947951	50.0000	50.1	
	59 Toluene	92	9.730	9.729	(1.302)	47056	5.00000	4.8	
	60 Tetrachloroethene	164	10.267	10.272	(0.865)	13775	5.00000	5.0	
	61 4-methyl-2-pentanone	43	10.352	10.351	(1.386)	91288	25.0000	28.9	
	62 trans-1,3-Dichloropropene	75	10.381	10.379	(1.389)	25066	5.00000	5.4	
	63 1,1,2-Trichloroethane	83	10.603	10.601	(1.419)	14546	5.00000	4.8	
	64 Dibromochloromethane	129	10.831	10.829	(0.912)	15720	5.00000	5.0	
	65 1,3-Dichloropropane	76	10.974	10.972	(0.924)	33385	5.00000	4.9	
	66 1,2-Dibromoethane	107	11.131	11.130	(1.490)	16172	5.00000	5.3(T)	
	67 2-Hexanone	43	11.568	11.559	(0.974)	55715	25.0000	26.6	
*	68 Chlorobenzene-D5	117	11.875	11.873	(1.000)	740178	50.0000		
	69 Chlorobenzene	112	11.896	11.894	(1.002)	55850	5.00000	5.1	
	70 1-Chlorohexane	91	11.925	11.923	(1.004)	24527	5.00000	4.4	
	71 Ethylbenzene	106	11.968	11.973	(1.008)	26913	5.00000	5.2	
	72 1,1,1,2-Tetrachloroethane	131	12.011	12.009	(1.011)	18752	5.00000	5.0	
	73 m+p-Xylenes	106	12.182	12.180	(1.026)	62446	10.0000	10.3	
	74 o-Xylene	106	12.747	12.745	(1.073)	24036	5.00000	4.9	
	75 Styrene	104	12.818	12.824	(1.079)	41654	5.00000	5.2	
	76 Bromoform	173	12.826	12.824	(1.080)	10620	5.00000	5.7	
	77 Isopropylbenzene	105	13.169	13.167	(0.888)	61794	5.00000	4.7	
$	78 P-Bromofluorobenzene	95	13.490	13.496	(1.805)	363255	50.0000	48.5	
	79 cis-1,4-Dichloro-2-Butene	53	13.612	13.610	(0.918)	8202	5.00000	5.4	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4906.D
Report Date: 27-Mar-2018 11:57

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.598	13.603	(0.917)	20543	5.00000	4.8	
	81	N-Propylbenzene	91	13.683	13.681	(0.923)	94165	5.00000	4.5	
	82	1,1,2,2-Tetrachloroethane	83	13.791	13.789	(0.930)	25567	5.00000	4.9	
	83	2-Chlorotoluene	91	13.841	13.846	(0.933)	55167	5.00000	4.9	
	84	1,2,3-Trichloropropane	75	13.926	13.925	(0.939)	22916	5.00000	4.8	
	85	1,3,5-Trimethylbenzene	105	13.941	13.939	(0.940)	57160	5.00000	4.9	
	86	trans-1,4-Dichloro-2-Butene	53	13.998	13.996	(0.944)	6542	5.00000	4.2	
	87	4-Chlorotoluene	91	14.048	14.046	(0.947)	62711	5.00000	5.1	
	88	tert-Butylbenzene	119	14.305	14.303	(0.965)	56285	5.00000	5.1	
	89	Pentachloroethane	165	14.312	14.311	(0.965)	8942	5.00000	4.3	
	90	1,2,4-Trimethylbenzene	105	14.391	14.396	(0.971)	60960	5.00000	4.8	
	91	sec-Butylbenzene	105	14.512	14.518	(0.979)	74395	5.00000	4.7	
	92	P-Isopropyltoluene	119	14.698	14.697	(0.991)	53826	5.00000	4.8	
	93	1,3-Dichlorobenzene	146	14.741	14.739	(0.994)	43567	5.00000	5.2	
*	94	1,4-Dichlorobenzene-D4	152	14.827	14.832	(1.000)	392909	50.0000		
	95	1,4-Dichlorobenzene	146	14.848	14.847	(1.001)	45770	5.00000	5.0	
	96	1,2,3-Trimethylbenzene	105	14.898	14.897	(1.005)	72530	5.00000	4.9	
	97	N-Butylbenzene	91	15.184	15.183	(1.024)	49508	5.00000	4.7	
M	98	1,2-Dichloroethylene (total)	96				37004	5.00000	(a)	
	99	1,2-Dichlorobenzene	146	15.327	15.326	(1.034)	38214	5.00000	4.8	
	100	1,2-Dibromo-3-Chloropropane	75	16.242	16.239	(1.095)	5047	5.00000	6.2	
	101	1,3,5-Trichlorobenzene	180	16.271	16.268	(1.097)	24133	5.00000	4.6	
	102	Hexachlorobutadiene	225	16.964	16.969	(1.144)	8380	5.00000	5.2	
	103	1,2,4-Trichlorobenzene	180	16.986	16.991	(1.146)	19695	5.00000	4.9	
	104	Naphthalene	128	17.350	17.347	(1.170)	41051	5.00000	4.6	
	105	1,2,3-Trichlorobenzene	180	17.550	17.549	(1.184)	20502	5.00000	4.8	
M	106	Xylenes (total)	106				86482	15.0000	(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4906.D
Date : 24-MAR-2018 09:35
Client ID:
Sample Info: WG225349-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-p.i\P032418.b\P4906.D
-Chloromethane (1.697)
-Vinyl Chloride (1.734)
-Bromomethane (2.004)
-Chloroethane (2.041)
-Trichlorofluoromethane (2.211)
-Diethyl Ether (2.454)
-1,1-Dichloroethene (2.669)+
-Iodomethane (2.769)
-Acrolein (2.948)
-Allyl Chloride (3.069)
-Methylene Chloride (3.183)
-trans-1,2-Dichloroethene (3.341)+
-Methyl tert-butyl ether (3.455)
-Tertiary-butyl alcohol (3.562)
-Acetonitrile (3.748)
-Di-isopropyl ether (3.898)
-Chloroprene (4.034)+
-Acrylonitrile (4.134)
-Ethyl tertiary-butyl ethe (4.377)+
-cis-1,2-Dichloroethene (4.799)
-2,2-Dichloropropane (4.962)
-Bromochloromethane (5.085)+
-Chloroform (5.249)
-Carbon Tetrachloride (5.442)
-Tetrahydrofuran (5.564)+
-2-Butanone (5.821)+
-Benzene (6.293)
-Propionitrile (6.429)+
-Pentafluorobenzene (6.550)+
-1,2-Dichloroethane (6.686)
-Isobutyl Alcohol (6.886)
-Methylcyclohexane (7.322)+
-1,4-Difluorobenzene (7.472)
-Dibromomethane (8.073)
-1,2-Dichloropropane (8.237)
-Bromodichloromethane (8.380)
-Methyl Methacrylate (8.716)+
-cis-1,3-dichloropropene (9.381)
-Toluene-D8 (9.652)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.267)
-4-Methyl-2-pentanone (10.360)+
-1,1,2-Trichloroethane (10.603)
-Ethyl Methacrylate (10.662)
-Dibromochloromethane (10.832)
-1,3-Dichloropropane (10.975)
-1,2-Dibromoethane (11.132)
-2-Hexanone (11.568)
-1-Chlorohexane (11.968)+
-m+p-Xylenes (12.183)
Chlorobenzene-D5 (11.875)+
-o-Xylene (12.747)
-Styrene (12.819)+
-Isopropylbenzene (13.162)
-P-Bromofluorobenzene (13.491)
-cis-1,4-Dichloro-2-Butene (13.605)+
-Bromobenzene (13.668)
-1,1,2,2-Tetrachloroethane (13.791)
-1,4-Dichlorobutane (13.934)+
-trans-1,4-Dichloro-2-Butene (13.998)
-4-Chlorotoluene (14.048)
-tert-Butylbenzene (14.206)+
-1,2,4-Trimethylbenzene (14.331)
-sec-Butylbenzene (14.513)
-P-Isopropyltoluene (14.698)
-1,3-Dichlorobenzene (14.736)
-1,2,3-Trimethylbenzene (14.899)
1,4-Dichlorobenzene-D4 (14.828)+
-N-Butylbenzene (15.185)
-1,2-Dichlorobenzene (15.328)
-1,2-Dibromo-3-Chloropropa (16.271)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.986)+
-Naphthalene (17.351)
-1,2,3-Trichlorobenzene (17.544)

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4907.D
Report Date: 27-Mar-2018 11:57

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032418.b\P4907.D
Lab Smp Id: WG225349-1
Inj Date : 24-MAR-2018 10:09
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225349-1
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032418.b\P8A05(63)D.m
Meth Date : 27-Mar-2018 11:56 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:09 Cal File: P4907.D
Als bottle: 4 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

WAS

5:52 am, Apr 04, 2018

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.538	1.537	(0.235)	3135	1.00000	0.90(a)	
2	Chloromethane	50	1.688	1.694	(0.258)	5660	1.00000	1.1	
3	Vinyl chloride	62	1.753	1.751	(0.268)	5496	1.00000	1.0	
4	Bromomethane	94	2.003	2.001	(0.306)	3338	1.00000	1.1	
5	Chloroethane	64	2.103	2.095	(0.322)	3534	1.00000	1.0	
6	Trichlorofluoromethane	101	2.210	2.209	(0.338)	7570	1.00000	0.96(a)	
7	Diethyl Ether	59	2.453	2.459	(0.375)	3548	1.00000	0.92(a)	
8	1,1-Dichloroethene	96	2.639	2.631	(0.403)	3105	1.00000	0.88(a)	
9	Freon-113	151	2.668	2.659	(0.408)	3371	1.00000	1.1	
10	Carbon Disulfide	76	2.668	2.666	(0.408)	9830	1.00000	0.84(a)	
11	Iodomethane	142	2.768	2.766	(0.423)	2460	1.00000	0.89(a)	
12	Acrolein	56	2.946	2.945	(0.450)	3489	5.00000	4.4(a)	
13	Allyl Chloride	41	3.075	3.067	(0.470)	5086	1.00000	0.93(a)	
14	Methylene Chloride	84	3.182	3.174	(0.486)	3961	1.00000	0.99(a)	
15	Acetone	43	3.232	3.238	(0.494)	5825	5.00000	4.5(a)	
16	trans-1,2-Dichloroethene	96	3.347	3.338	(0.512)	2366	1.00000	0.89(a)	
17	Methyl Acetate	43	3.361	3.360	(0.514)	3620	1.00000	0.98(aM)	M6
18	Methyl tert-butyl ether	73	3.461	3.453	(0.529)	6023	1.00000	1.8	
19	Tertiary-butyl alcohol	59	3.568	3.567	(0.545)	1043	5.00000	14.4	
20	Acetonitrile	41	3.754	3.753	(0.574)	6042	10.0000	9.4(a)	
21	Di-isopropyl ether	45	3.897	3.889	(0.596)	7786	1.00000	1.8	
22	Chloroprene	53	4.011	4.017	(0.613)	3137	1.00000	1.9	
23	1,1-Dichloroethane	63	4.047	4.053	(0.619)	5144	1.00000	0.79(a)	
24	Acrylonitrile	52	4.133	4.131	(0.632)	5755	5.00000	4.0(a)	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4907.D
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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 Ethyl tertiary-butyl ether	59	4.369	4.368	(0.668)	6102	1.00000	2.1	
	26 Vinyl Acetate	43	4.390	4.396	(0.588)	4598	1.00000	1.4(M)	M6
	27 cis-1,2-Dichloroethene	96	4.812	4.797	(0.736)	2419	1.00000	1.5	
	28 2,2-Dichloropropane	77	4.948	4.961	(0.756)	3416	1.00000	1.4(M)	M9
	29 Bromochloromethane	128	5.112	5.104	(0.781)	1019	1.00000	(a)	
	30 Cyclohexane	56	5.091	5.082	(0.778)	2765	1.00000	1.9	
	31 Chloroform	83	5.255	5.247	(0.803)	5347	1.00000	0.84(a)	
	32 Carbon Tetrachloride	117	5.455	5.440	(0.730)	3662	1.00000	0.81(a)	
	33 Tetrahydrofuran	42	5.541	5.504	(0.847)	3521	5.00000	12.2	
$	34 Dibromofluoromethane	113	5.563	5.561	(0.850)	218053	50.0000	49.9	
	35 1,1,1-Trichloroethane	97	5.570	5.576	(0.851)	4197	1.00000	0.77(a)	
	36 2-Butanone	43	5.834	5.826	(0.892)	6529	5.00000	8.1	
	37 1,1-Dichloropropene	75	5.806	5.812	(0.777)	2887	1.00000	1.9(M)	M6
	38 Benzene	78	6.292	6.290	(0.842)	10657	1.00000	0.74(a)	
	39 Propionitrile	54	6.413	6.398	(0.980)	5836	10.0000	8.4(a)	
	40 Methacrylonitrile	41	6.442	6.426	(0.985)	19626	10.0000	22.3	
*	41 Pentafluorobenzene	168	6.542	6.541	(1.000)	449659	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.570	6.569	(1.004)	307053	50.0000	49.8	
	43 Tertiary-amyl methyl ether	73	6.556	6.569	(1.002)	7421	1.00000	0.81(aM)	M6
	44 1,2-Dichloroethane	62	6.692	6.691	(0.896)	5758	1.00000	1.0	
	45 Isobutyl Alcohol	43	6.885	6.877	(1.052)	765	20.0000	31.2	
	46 Methylcyclohexane	83	7.314	7.313	(1.118)	2855	1.00000	2.0	
	47 Trichloroethene	95	7.371	7.363	(0.987)	2520	1.00000	0.72(a)	
*	48 1,4-Difluorobenzene	114	7.471	7.470	(1.000)	737762	50.0000		
	49 Dibromomethane	93	8.079	8.070	(1.081)	1728	1.00000	0.78(a)	
	50 1,2-Dichloropropane	63	8.257	8.242	(1.105)	2105	1.00000	1.6(T)	
	51 Bromodichloromethane	83	8.379	8.385	(1.122)	3453	1.00000	0.73(Ta)	
	52 Methyl Methacrylate	41	8.722	8.714	(1.167)	1459	1.00000	3.7(M)	M6
	53 Ethyl Methacrylate	69	10.680	10.686	(1.430)	1797	1.00000	3.6	
M	55 Total Alkylbenzenes	100				47117	1.00000	(a)	
	57 cis-1,3-dichloropropene	75	9.380	9.378	(1.255)	2938	1.00000	2.2	
$	58 Toluene-D8	98	9.651	9.650	(1.292)	888057	50.0000	48.8	
	59 Toluene	92	9.730	9.729	(1.302)	7403	1.00000	0.78(a)	
	60 Tetrachloroethene	164	10.266	10.272	(0.865)	1978	1.00000	0.76(a)	
	61 4-methyl-2-pentanone	43	10.352	10.351	(1.386)	9937	5.00000	14.0	
	62 trans-1,3-Dichloropropene	75	10.380	10.379	(1.389)	3031	1.00000	2.4	
	63 1,1,2-Trichloroethane	83	10.609	10.601	(1.420)	2280	1.00000	0.78(a)	WAS
	64 Dibromochloromethane	129	10.823	10.829	(0.912)	2418	1.00000	1.7	5:52 am, Apr 04, 2018
	65 1,3-Dichloropropane	76	10.974	10.972	(0.924)	4393	1.00000	0.99(a)	
	66 1,2-Dibromoethane	107	11.124	11.130	(1.489)	2329	1.00000	1.9(T)	
	67 2-Hexanone	43	11.560	11.559	(0.974)	5173	5.00000	12.5	
*	68 Chlorobenzene-D5	117	11.874	11.873	(1.000)	704551	50.0000		
	69 Chlorobenzene	112	11.896	11.894	(1.002)	8362	1.00000	0.80(a)	
	70 1-Chlorohexane	91	11.924	11.923	(1.004)	3192	1.00000	0.83(a)	
	71 Ethylbenzene	106	11.967	11.973	(1.008)	3819	1.00000	1.6	
	72 1,1,1,2-Tetrachloroethane	131	12.003	12.009	(1.011)	2482	1.00000	0.70(a)	
	73 m+p-Xylenes	106	12.182	12.180	(1.026)	6859	2.00000	3.8	
	74 o-Xylene	106	12.753	12.745	(1.074)	2766	1.00000	2.2	
	75 Styrene	104	12.825	12.824	(1.080)	3916	1.00000	2.5	
	76 Bromoform	173	12.825	12.824	(1.080)	1108	1.00000	2.6(M)	M6
	77 Isopropylbenzene	105	13.161	13.167	(0.887)	5534	1.00000	1.7	
$	78 P-Bromofluorobenzene	95	13.490	13.496	(1.806)	337840	50.0000	46.9	
	79 cis-1,4-Dichloro-2-Butene	53	13.618	13.610	(0.918)	1185	1.00000	2.2	
	80 Bromobenzene	156	13.597	13.603	(0.917)	3041	1.00000	0.76(a)	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4907.D
Report Date: 27-Mar-2018 11:57

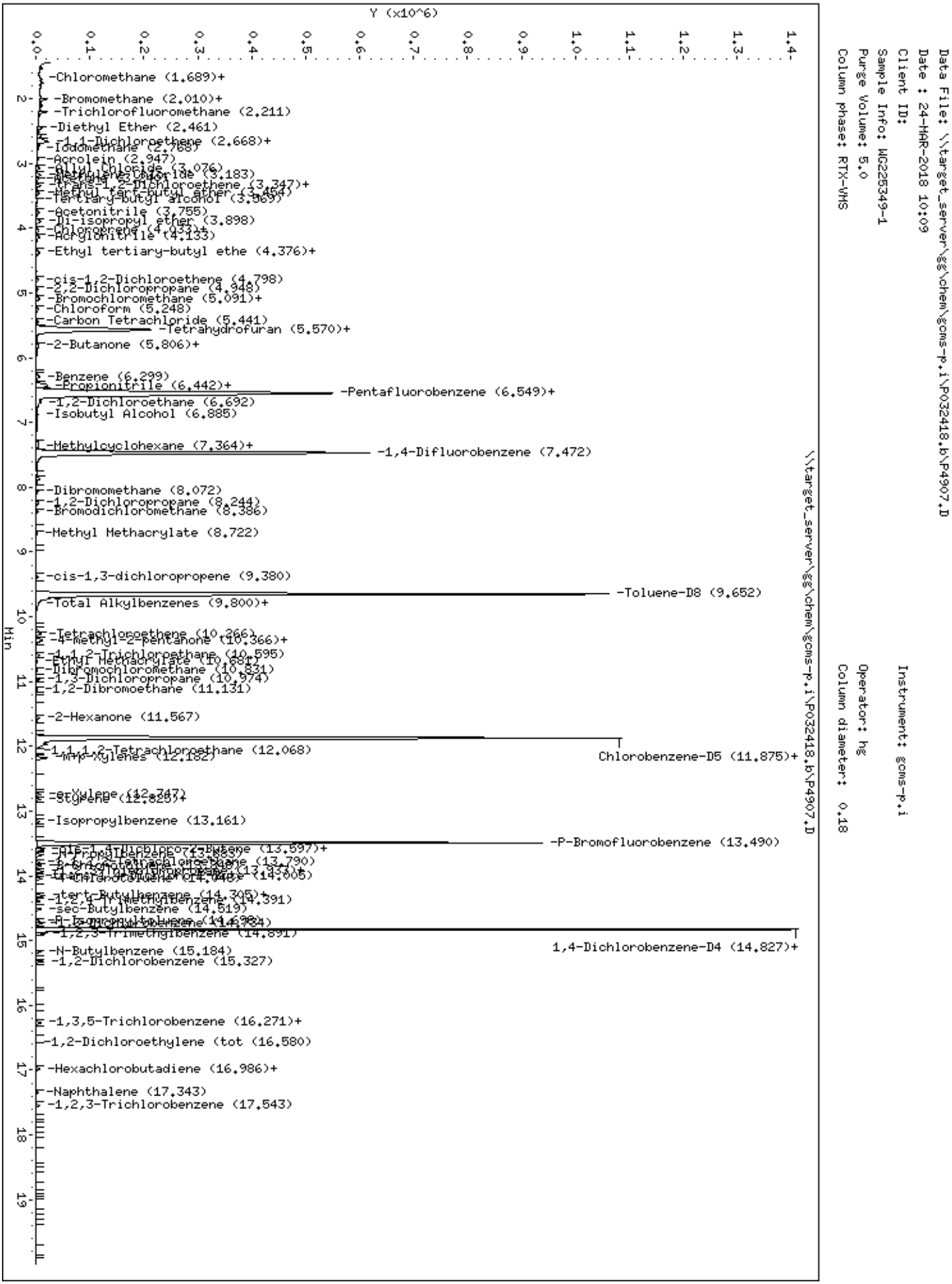
			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	13.683	13.681	(0.922)	11879	1.00000	1.1	
	82	1,1,2,2-Tetrachloroethane	83	13.790	13.789	(0.930)	4148	1.00000	0.86(a)	
	83	2-Chlorotoluene	91	13.840	13.846	(0.933)	6860	1.00000	1.5	
	84	1,2,3-Trichloropropane	75	13.933	13.925	(0.939)	3410	1.00000	0.78(a)	
	85	1,3,5-Trimethylbenzene	105	13.940	13.939	(0.940)	6251	1.00000	1.8	
	86	trans-1,4-Dichloro-2-Butene	53	13.990	13.996	(0.943)	975	1.00000	0.81(a)	
	87	4-Chlorotoluene	91	14.047	14.046	(0.947)	7072	1.00000	1.4	
	88	tert-Butylbenzene	119	14.312	14.303	(0.965)	6068	1.00000	2.1	
	89	Pentachloroethane	165	14.312	14.311	(0.965)	1484	1.00000	0.78(a)	
	90	1,2,4-Trimethylbenzene	105	14.397	14.396	(0.971)	5676	1.00000	1.6	
	91	sec-Butylbenzene	105	14.512	14.518	(0.978)	7096	1.00000	1.4	
	92	P-Isopropyltoluene	119	14.698	14.697	(0.991)	4568	1.00000	2.0	
	93	1,3-Dichlorobenzene	146	14.741	14.739	(0.994)	5509	1.00000	0.71(a)	
*	94	1,4-Dichlorobenzene-D4	152	14.833	14.832	(1.000)	365003	50.0000		
	95	1,4-Dichlorobenzene	146	14.841	14.847	(1.000)	7441	1.00000	0.87(a)	
	96	1,2,3-Trimethylbenzene	105	14.891	14.897	(1.004)	9876	1.00000	1.5	
	97	N-Butylbenzene	91	15.184	15.183	(1.024)	5579	1.00000	1.9	
M	98	1,2-Dichloroethylene (total)	96				4785	1.00000	(a)	
	99	1,2-Dichlorobenzene	146	15.327	15.326	(1.033)	5634	1.00000	0.76(a)	
	100	1,2-Dibromo-3-Chloropropane	75	16.234	16.239	(1.094)	241	1.00000	1.4(M)	M6
	101	1,3,5-Trichlorobenzene	180	16.270	16.268	(1.097)	3756	1.00000	1.3	
	102	Hexachlorobutadiene	225	16.964	16.969	(1.144)	1082	1.00000	0.72(a)	
	103	1,2,4-Trichlorobenzene	180	16.985	16.991	(1.145)	2713	1.00000	2.0	
	104	Naphthalene	128	17.350	17.347	(1.170)	4793	1.00000	2.2	
	105	1,2,3-Trichlorobenzene	180	17.550	17.549	(1.183)	2672	1.00000	1.1	
M	106	Xylenes (total)	106				9625	5.00000	(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

WAS

5:52 am, Apr 04, 2018


Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4907.D
Date : 24-MAR-2018 10:09
Client ID:
Sample Info: WG225349-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032418.b\P4907.D
Y (x10^6)
Min
-Chloromethane (1.689)+
-Bromomethane (2.010)+
-Trichlorofluoromethane (2.211)
-Diethyl Ether (2.461)
-1,1-Dichloroethene (2.668)+
-Iodomethane (2.768)
-Acrolein (2.947)
-Allyl Chloride (3.076)
-Methylene Chloride (3.183)
-trans-1,2-Dichloroethene (3.347)+
-Methyl tert-butyl ether (3.454)
-Tertiary-butyl alcohol (3.569)
-Acetonitrile (3.755)
-Di-isopropyl ether (3.898)
-Chloroprene (4.033)+
-Acrylonitrile (4.133)
-Ethyl tertiary-butyl ethe (4.376)+
-cis-1,2-Dichloroethene (4.798)
-2,2-Dichloropropane (4.948)
-Bromochloromethane (5.091)+
-Chloroform (5.248)
-Carbon Tetrachloride (5.441)
-Tetrahydrofuran (5.570)+
-2-Butanone (5.806)+
-Benzene (6.299)
-Propionitrile (6.442)+
-Pentafluorobenzene (6.549)+
-1,2-Dichloroethane (6.692)
-Isobutyl Alcohol (6.885)
-Methylcyclohexane (7.364)+
-1,4-Difluorobenzene (7.472)
-Dibromomethane (8.072)
-1,2-Dichloropropane (8.244)
-Bromodichloromethane (8.386)
-Methyl Methacrylate (8.722)
-cis-1,3-dichloropropene (9.380)
-Toluene-D8 (9.652)
-Total Alkylbenzenes (9.800)+
-Tetrachloroethene (10.266)
-4-methyl-2-pentanone (10.366)+
-1,1,2-Trichloroethane (10.595)
-Ethyl Methacrylate (10.681)
-Dibromochloromethane (10.831)
-1,3-Dichloropropane (10.974)
-1,2-Dibromoethane (11.131)
-2-Hexanone (11.567)
-1,1,1,2-Tetrachloroethane (12.068)
-m+p-Xylenes (12.182)
Chlorobenzene-D5 (11.875)+
-e-Xylene (12.747)
-Styrene (12.825)+
-Isopropylbenzene (13.161)
-P-Bromofluorobenzene (13.490)
-cis-1,4-Dichloro-2-Butene (13.597)+
-N-Propylbenzene (13.883)
-1,1,2-Tetrachloroethane (13.790)
-2-Chlorotoluene (13.933)+
-1,2,3-Trichloropropane (14.005)
-4-Chlorotoluene (14.048)
-tert-Butylbenzene (14.305)+
-1,2,4-Trimethylbenzene (14.391)
-sec-Butylbenzene (14.519)
-P-Isopropyltoluene (14.698)
-1,2-Dichlorobenzene (14.734)
-1,2,3-Trimethylbenzene (14.891)
1,4-Dichlorobenzene-D4 (14.827)+
-N-Butylbenzene (15.184)
-1,2-Dichlorobenzene (15.327)
-1,3,5-Trichlorobenzene (16.271)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.986)+
-Naphthalene (17.343)
-1,2,3-Trichlorobenzene (17.543)

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4908.D
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Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032418.b\P4908.D
Lab Smp Id: WG225349-6
Inj Date : 24-MAR-2018 10:44
Operator : hg   Inst ID: gcms-p.i
Smp Info : WG225349-6
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-p.i\P032418.b\P8A05(63)D.m
Meth Date : 27-Mar-2018 11:56 gcms-p.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44   Cal File: P4908.D
Als bottle: 5   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.532	1.537	(0.234)	575675	150.000	146	
2	Chloromethane	50	1.689	1.694	(0.258)	835294	150.000	144	
3	Vinyl chloride	62	1.746	1.751	(0.267)	861056	150.000	144	
4	Bromomethane	94	1.996	2.001	(0.305)	446249	150.000	135	
5	Chloroethane	64	2.082	2.095	(0.318)	313891	150.000	80.4	
6	Trichlorofluoromethane	101	2.197	2.209	(0.336)	1382868	150.000	156(A)	
7	Diethyl Ether	59	2.454	2.459	(0.375)	651663	150.000	150	
8	1,1-Dichloroethene	96	2.625	2.631	(0.401)	632831	150.000	159(A)	
9	Freon-113	151	2.654	2.659	(0.406)	478179	150.000	142	
10	Carbon Disulfide	76	2.661	2.666	(0.407)	2127841	150.000	161(A)	
11	Iodomethane	142	2.761	2.766	(0.422)	510466	150.000	164(A)	
12	Acrolein	56	2.947	2.945	(0.450)	704010	750.000	793(A)	
13	Allyl Chloride	41	3.069	3.067	(0.469)	891032	150.000	145	
14	Methylene Chloride	84	3.176	3.174	(0.485)	671260	150.000	149	
15	Acetone	43	3.233	3.238	(0.494)	1088333	750.000	749	
16	trans-1,2-Dichloroethene	96	3.333	3.338	(0.509)	631535	150.000	150(A)	
17	Methyl Acetate	43	3.354	3.360	(0.513)	642457	150.000	155(A)	
18	Methyl tert-butyl ether	73	3.447	3.453	(0.527)	1868977	150.000	150(A)	
19	Tertiary-butyl alcohol	59	3.576	3.567	(0.547)	307525	750.000	761(A)	
20	Acetonitrile	41	3.755	3.753	(0.574)	1097152	1500.00	1520(A)	
21	Di-isopropyl ether	45	3.891	3.889	(0.595)	2157315	150.000	150(A)	
22	Chloroprene	53	4.012	4.017	(0.613)	1046535	150.000	151(A)	
23	1,1-Dichloroethane	63	4.048	4.053	(0.619)	1202269	150.000	163(A)	
24	Acrylonitrile	52	4.134	4.131	(0.632)	1352487	750.000	828(A)	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4908.D
Report Date: 27-Mar-2018 11:57

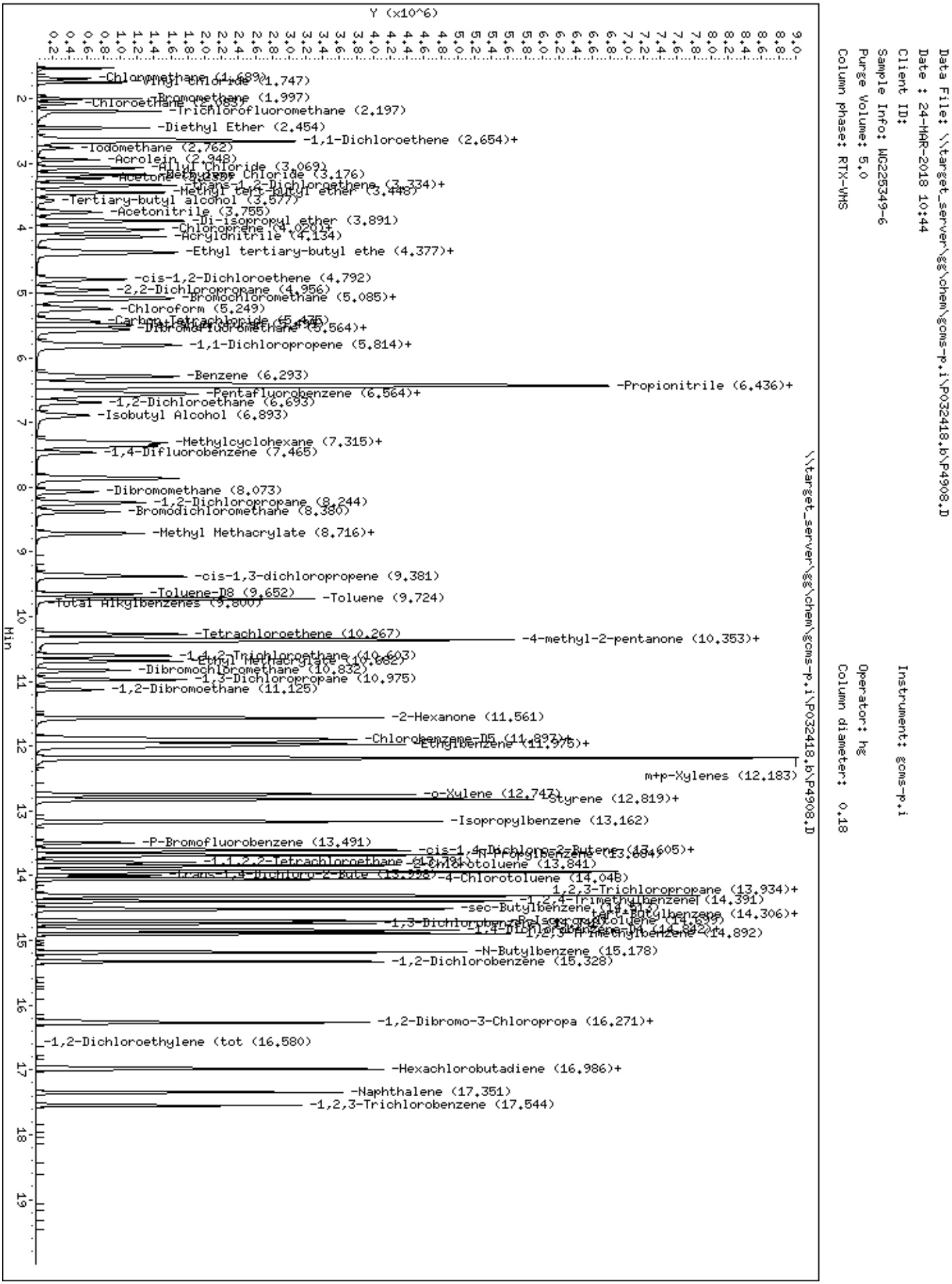
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25 Ethyl tertiary-butyl ether	59	4.369	4.368	(0.668)	1900745	150.000	150(A)	
	26 Vinyl Acetate	43	4.398	4.396	(0.589)	1584414	150.000	150	
	27 cis-1,2-Dichloroethene	96	4.791	4.797	(0.732)	688651	150.000	151(A)	
	28 2,2-Dichloropropane	77	4.956	4.961	(0.757)	910275	150.000	150(A)	
	29 Bromochloromethane	128	5.106	5.104	(0.780)	271017	150.000	149	
	30 Cyclohexane	56	5.077	5.082	(0.776)	1141825	150.000	153(A)	
	31 Chloroform	83	5.249	5.247	(0.802)	1134201	150.000	158(A)	
	32 Carbon Tetrachloride	117	5.442	5.440	(0.729)	836613	150.000	162(A)	
	33 Tetrahydrofuran	42	5.499	5.504	(0.840)	1260141	750.000	765(A)	
$	34 Dibromofluoromethane	113	5.563	5.561	(0.850)	250770	50.0000	50.9	
	35 1,1,1-Trichloroethane	97	5.570	5.576	(0.851)	1020997	150.000	166(A)	
	36 2-Butanone	43	5.821	5.826	(0.890)	1881047	750.000	760(AM)	M6
	37 1,1-Dichloropropene	75	5.806	5.812	(0.778)	954568	150.000	152(A)	
	38 Benzene	78	6.292	6.290	(0.843)	2762482	150.000	167(A)	
	39 Propionitrile	54	6.414	6.398	(0.980)	1383072	1500.00	1760(A)	
	40 Methacrylonitrile	41	6.435	6.426	(0.984)	5535246	1500.00	1540(A)	
*	41 Pentafluorobenzene	168	6.542	6.541	(1.000)	507626	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.564	6.569	(1.003)	366668	50.0000	52.6	
	43 Tertiary-amyl methyl ether	73	6.571	6.569	(1.004)	1845884	150.000	178(A)	
	44 1,2-Dichloroethane	62	6.693	6.691	(0.897)	993689	150.000	152(A)	
	45 Isobutyl Alcohol	43	6.893	6.877	(1.054)	716712	3000.00	2990	
	46 Methylcyclohexane	83	7.314	7.313	(1.118)	1077402	150.000	153(A)	
	47 Trichloroethene	95	7.365	7.363	(0.987)	664688	150.000	167(A)	
*	48 1,4-Difluorobenzene	114	7.465	7.470	(1.000)	842210	50.0000		
	49 Dibromomethane	93	8.065	8.070	(1.080)	420094	150.000	167(A)	
	50 1,2-Dichloropropane	63	8.244	8.242	(1.104)	711573	150.000	151(A)	
	51 Bromodichloromethane	83	8.380	8.385	(1.123)	928567	150.000	172(A)	
	52 Methyl Methacrylate	41	8.715	8.714	(1.168)	745736	150.000	154(A)	WAS
	53 Ethyl Methacrylate	69	10.681	10.686	(1.431)	1097482	150.000	154(A)	
	54 1,4-Dioxane	88	8.730	8.721	(1.169)	176651	3000.00	3210(A)	5:52 am, Apr 04, 2018
M	55 Total Alkylbenzenes	100				23268281	150.000	(a)	
	57 cis-1,3-dichloropropene	75	9.380	9.378	(1.257)	1292534	150.000	152(A)	
$	58 Toluene-D8	98	9.652	9.650	(1.293)	1054015	50.0000	50.7	
	59 Toluene	92	9.723	9.729	(1.303)	1834991	150.000	170(A)	
	60 Tetrachloroethene	164	10.267	10.272	(0.865)	522605	150.000	160(A)	
	61 4-methyl-2-pentanone	43	10.352	10.351	(1.387)	4527941	750.000	771(A)	
	62 trans-1,3-Dichloropropene	75	10.381	10.379	(1.391)	1222990	150.000	153(A)	
	63 1,1,2-Trichloroethane	83	10.603	10.601	(1.420)	563819	150.000	169(A)	
	64 Dibromochloromethane	129	10.831	10.829	(0.912)	726038	150.000	152(A)	
	65 1,3-Dichloropropane	76	10.974	10.972	(0.924)	1320662	150.000	151(A)	
	66 1,2-Dibromoethane	107	11.124	11.130	(1.490)	677654	150.000	153(A)	
	67 2-Hexanone	43	11.560	11.559	(0.974)	3222823	750.000	766(A)	
*	68 Chlorobenzene-D5	117	11.875	11.873	(1.000)	880572	50.0000		
	69 Chlorobenzene	112	11.896	11.894	(1.002)	2083353	150.000	160(A)	
	70 1-Chlorohexane	91	11.925	11.923	(1.004)	1039512	150.000	146	
	71 Ethylbenzene	106	11.975	11.973	(1.008)	1167219	150.000	152(A)	
	72 1,1,1,2-Tetrachloroethane	131	12.011	12.009	(1.011)	742914	150.000	168(A)	
	73 m+p-Xylenes	106	12.182	12.180	(1.026)	3009920	300.000	304(A)	
	74 o-Xylene	106	12.747	12.745	(1.073)	1397987	150.000	153(A)	
	75 Styrene	104	12.818	12.824	(1.079)	2524988	150.000	153(A)	
	76 Bromoform	173	12.826	12.824	(1.080)	533991	150.000	154(A)	
	77 Isopropylbenzene	105	13.162	13.167	(0.887)	3429981	150.000	151(A)	
$	78 P-Bromofluorobenzene	95	13.490	13.496	(1.807)	432928	50.0000	52.6	
	79 cis-1,4-Dichloro-2-Butene	53	13.612	13.610	(0.918)	407818	150.000	153(A)	

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4908.D
Report Date: 27-Mar-2018 11:57

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	80 Bromobenzene	156	13.598	13.603	(0.917)	852153	150.000	163(A)	
	81 N-Propylbenzene	91	13.683	13.681	(0.922)	4260358	150.000	150(A)	
	82 1,1,2,2-Tetrachloroethane	83	13.791	13.789	(0.930)	1000224	150.000	159(A)	
	83 2-Chlorotoluene	91	13.841	13.846	(0.933)	2565629	150.000	151(A)	
	84 1,2,3-Trichloropropane	75	13.926	13.925	(0.939)	971271	150.000	169(A)	
	85 1,3,5-Trimethylbenzene	105	13.941	13.939	(0.940)	3063657	150.000	152(A)	
	86 trans-1,4-Dichloro-2-Butene	53	13.998	13.996	(0.944)	295049	150.000	150(A)	
	87 4-Chlorotoluene	91	14.048	14.046	(0.947)	2773087	150.000	151(A)	
	88 tert-Butylbenzene	119	14.305	14.303	(0.964)	3061812	150.000	152(A)	
	89 Pentachloroethane	165	14.312	14.311	(0.965)	427562	150.000	171(A)	
	90 1,2,4-Trimethylbenzene	105	14.391	14.396	(0.970)	3151400	150.000	151(A)	
	91 sec-Butylbenzene	105	14.512	14.518	(0.978)	3686209	150.000	151(A)	
	92 P-Isopropyltoluene	119	14.698	14.697	(0.991)	3158775	150.000	152(A)	
	93 1,3-Dichlorobenzene	146	14.741	14.739	(0.994)	1668509	150.000	163(A)	
*	94 1,4-Dichlorobenzene-D4	152	14.834	14.832	(1.000)	477998	50.0000		
	95 1,4-Dichlorobenzene	146	14.848	14.847	(1.001)	1752007	150.000	157(A)	
	96 1,2,3-Trimethylbenzene	105	14.891	14.897	(1.004)	3312361	150.000	151(A)	
	97 N-Butylbenzene	91	15.177	15.183	(1.023)	2886070	150.000	152(A)	
M	98 1,2-Dichloroethylene (total)	96				1320186	150.000	(a)	
	99 1,2-Dichlorobenzene	146	15.327	15.326	(1.033)	1609689	150.000	165(A)	
	100 1,2-Dibromo-3-Chloropropane	75	16.242	16.239	(1.095)	183276	150.000	147	
	101 1,3,5-Trichlorobenzene	180	16.271	16.268	(1.097)	1117500	150.000	151(A)	
	102 Hexachlorobutadiene	225	16.964	16.969	(1.144)	323510	150.000	164(A)	
	103 1,2,4-Trichlorobenzene	180	16.986	16.991	(1.145)	1027846	150.000	152(A)	
	104 Naphthalene	128	17.350	17.347	(1.170)	2702126	150.000	151(A)	
	105 1,2,3-Trichlorobenzene	180	17.543	17.549	(1.183)	867180	150.000	151(A)	
M	106 Xylenes (total)	106				4407907	150.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.


Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4908.D
Date : 24-MAR-2018 10:44
Client ID:
Sample Info: WG225349-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-p.i\P032418.b\P4908.D
-Chloromethane (1.689)
-Vinyl Chloride (1.747)
-Bromomethane (1.997)
-Chloroethane (2.083)
-Trichlorofluoromethane (2.197)
-Diethyl Ether (2.454)
-1,1-Dichloroethene (2.654)+
-Iodomethane (2.762)
-Acrolein (2.948)
-Allyl Chloride (3.069)
-Methylene Chloride (3.176)
-Acetone (3.235)
-trans-1,2-Dichloroethene (3.334)+
-Methyl tert-butyl ether (3.448)
-Tertiary-butyl alcohol (3.577)
-Acetonitrile (3.755)
-Di-isopropyl ether (3.891)
-Chloroprene (4.020)+
-Acrylonitrile (4.134)
-Ethyl tertiary-butyl ethe (4.377)+
-cis-1,2-Dichloroethene (4.792)
-2,2-Dichloropropane (4.956)
-Bromochloromethane (5.085)+
-Chloroform (5.249)
-Carbon Tetrachloride (5.475)
-Dibromofluoromethane (5.564)+
-1,1-Dichloropropene (5.814)+
-Benzene (6.293)
-Propionitrile (6.436)+
-Pentafluorobenzene (6.564)+
-1,2-Dichloroethane (6.693)
-Isobutyl Alcohol (6.893)
-Methylcyclohexane (7.315)+
-1,4-Difluorobenzene (7.465)
-Dibromomethane (8.073)
-1,2-Dichloropropane (8.244)
-Bromodichloromethane (8.380)
-Methyl Methacrylate (8.716)+
-cis-1,3-dichloropropene (9.381)
-Toluene-D8 (9.652)
-Toluene (9.724)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.267)
-4-methyl-2-pentanone (10.353)+
-1,1,2-Trichloroethane (10.603)
-Ethyl Methacrylate (10.682)
-Dibromochloromethane (10.832)
-1,3-Dichloropropane (10.975)
-1,2-Dibromoethane (11.125)
-2-Hexanone (11.561)
-Chlorobenzene-D5 (11.897)+
-Ethylbenzene (11.975)+
m+p-Xylenes (12.183)
-o-Xylene (12.747)
-Styrene (12.819)+
-Isopropylbenzene (13.162)
-P-Bromofluorobenzene (13.491)
-cis-1,4-Dichloro-2-Butene (13.605)+
-N-Propylbenzene (13.684)
-1,1,2,2-Tetrachloroethane (13.791)
-2-Chlorotoluene (13.841)
-trans-1,4-Dichloro-2-Bute (13.998)
-4-Chlorotoluene (14.048)
1,2,3-Trichloropropane (13.934)+
-1,2,4-Trimethylbenzene (14.391)
-sec-Butylbenzene (14.513)
-tert-Butylbenzene (14.306)+
-1,3-Dichlorobenzene (14.699)
-1,4-Dichlorobenzene-D4 (14.842)+
-1,2,3-Trimethylbenzene (14.892)
-N-Butylbenzene (15.178)
-1,2-Dichlorobenzene (15.328)
-1,2-Dibromo-3-Chloropropa (16.271)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.986)+
-Naphthalene (17.351)
-1,2,3-Trichlorobenzene (17.544)

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\P4909.D
Report Date: 27-Mar-2018 11:57

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032418.b\P4909.D
Lab Smp Id: WG225349-5
Inj Date : 24-MAR-2018 11:18 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225349-5
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032418.b\P8A05(63)D.m
Meth Date : 27-Mar-2018 11:56 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 11:18 Cal File: P4909.D
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	409801	100.000	94.8	
2	Chloromethane	50	1.686	1.694	(0.258)	610844	100.000	95.9	
3	Vinyl chloride	62	1.751	1.751	(0.268)	622907	100.000	94.7	
4	Bromomethane	94	2.001	2.001	(0.306)	317179	100.000	87.6	
5	Chloroethane	64	2.086	2.095	(0.319)	373197	100.000	87.1	
6	Trichlorofluoromethane	101	2.201	2.209	(0.337)	904431	100.000	93.1	
7	Diethyl Ether	59	2.451	2.459	(0.375)	470166	100.000	98.5	
19	Tertiary-butyl alcohol	59	3.566	3.567	(0.545)	218398	500.000	496	
8	1,1-Dichloroethene	96	2.630	2.631	(0.402)	427441	100.000	98.0	
10	Carbon Disulfide	76	2.665	2.666	(0.408)	1474595	100.000	102	
9	Freon-113	151	2.658	2.659	(0.407)	319429	100.000	86.2	
11	Iodomethane	142	2.766	2.766	(0.423)	351363	100.000	103	
12	Acrolein	56	2.944	2.945	(0.450)	499348	500.000	512	
14	Methylene Chloride	84	3.173	3.174	(0.485)	489202	100.000	98.7	
15	Acetone	43	3.237	3.238	(0.495)	751436	500.000	471	
45	Isobutyl Alcohol	43	6.883	6.877	(1.052)	467117	2000.00	2030	
16	trans-1,2-Dichloroethene	96	3.337	3.338	(0.510)	454359	100.000	98.7	
13	Allyl Chloride	41	3.066	3.067	(0.469)	712625	100.000	105	
18	Methyl tert-butyl ether	73	3.452	3.453	(0.528)	1362787	100.000	100	
20	Acetonitrile	41	3.752	3.753	(0.574)	763824	1000.00	961	
21	Di-isopropyl ether	45	3.888	3.889	(0.595)	1582221	100.000	101	
22	Chloroprene	53	4.016	4.017	(0.614)	743289	100.000	98.4	
39	Propionitrile	54	6.404	6.398	(0.979)	901864	1000.00	1040	
40	Methacrylonitrile	41	6.432	6.426	(0.984)	3746918	1000.00	953	

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Report Date: 27-Mar-2018 11:57

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	4.052	4.053	(0.620)	865341	100.000	107	
	24 Acrylonitrile	52	4.131	4.131	(0.632)	924626	500.000	516	
	25 Ethyl tertiary-butyl ether	59	4.367	4.368	(0.668)	1386220	100.000	100	
	26 Vinyl Acetate	43	4.395	4.396	(0.589)	1168505	100.000	101	
	27 cis-1,2-Dichloroethene	96	4.796	4.797	(0.733)	485834	100.000	97.6	
	52 Methyl Methacrylate	41	8.713	8.714	(1.167)	494134	100.000	95.1	
	28 2,2-Dichloropropane	77	4.953	4.961	(0.757)	656428	100.000	99.0	
	29 Bromochloromethane	128	5.110	5.104	(0.781)	195111	100.000	97.5	
	31 Chloroform	83	5.246	5.247	(0.802)	817885	100.000	104	
	32 Carbon Tetrachloride	117	5.439	5.440	(0.728)	580954	100.000	103	
	33 Tetrahydrofuran	42	5.503	5.504	(0.842)	863787	500.000	482	
$	34 Dibromofluoromethane	113	5.568	5.561	(0.851)	271251	50.0000	50.1	
	35 1,1,1-Trichloroethane	97	5.575	5.576	(0.852)	717912	100.000	107	
	37 1,1-Dichloropropene	75	5.803	5.812	(0.777)	662686	100.000	97.1	
	36 2-Butanone	43	5.825	5.826	(0.891)	1312458	500.000	485	
	38 Benzene	78	6.290	6.290	(0.842)	1955286	100.000	108	
*	41 Pentafluorobenzene	168	6.540	6.541	(1.000)	557258	50.0000		
	30 Cyclohexane	56	5.082	5.082	(0.777)	777628	100.000	95.3	
	53 Ethyl Methacrylate	69	10.678	10.686	(1.430)	735092	100.000	95.7	
$	42 1,2-Dichloroethane-D4	65	6.568	6.569	(1.004)	391087	50.0000	51.1	
	43 Tertiary-amyl methyl ether	73	6.568	6.569	(1.004)	1304100	100.000	115	
	44 1,2-Dichloroethane	62	6.690	6.691	(0.896)	699239	100.000	98.0	
	47 Trichloroethene	95	7.362	7.363	(0.986)	459400	100.000	106	
*	48 1,4-Difluorobenzene	114	7.469	7.470	(1.000)	919290	50.0000		
	49 Dibromomethane	93	8.069	8.070	(1.080)	286638	100.000	104	
	50 1,2-Dichloropropane	63	8.241	8.242	(1.103)	509291	100.000	99.2	
	51 Bromodichloromethane	83	8.384	8.385	(1.122)	639091	100.000	108	
	57 cis-1,3-dichloropropene	75	9.377	9.378	(1.256)	900419	100.000	97.6	
	54 1,4-Dioxane	88	8.720	8.721	(1.167)	130986	2000.00	2180	
$	58 Toluene-D8	98	9.649	9.650	(1.292)	1148945	50.0000	50.7	
	59 Toluene	92	9.728	9.729	(1.302)	1267573	100.000	107	
	61 4-methyl-2-pentanone	43	10.350	10.351	(1.386)	3007266	500.000	474	
	60 Tetrachloroethene	164	10.264	10.272	(0.865)	363098	100.000	105	
	62 trans-1,3-Dichloropropene	75	10.378	10.379	(1.389)	835966	100.000	96.5	
	63 1,1,2-Trichloroethane	83	10.600	10.601	(1.419)	382355	100.000	105	
	64 Dibromochloromethane	129	10.828	10.829	(0.912)	492537	100.000	97.5	
	65 1,3-Dichloropropane	76	10.971	10.972	(0.924)	915143	100.000	98.6	
	66 1,2-Dibromoethane	107	11.129	11.130	(1.490)	462330	100.000	95.9	
	67 2-Hexanone	43	11.558	11.559	(0.974)	2121868	500.000	480	
*	68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	933596	50.0000		
	69 Chlorobenzene	112	11.894	11.894	(1.002)	1420173	100.000	103	
	70 1-Chlorohexane	91	11.922	11.923	(1.004)	783298	100.000	104	
	71 Ethylbenzene	106	11.972	11.973	(1.008)	787651	100.000	97.0	
	72 1,1,1,2-Tetrachloroethane	131	12.008	12.009	(1.011)	498622	100.000	107	
	73 m+p-Xylenes	106	12.179	12.180	(1.026)	2026669	200.000	194	
	74 o-Xylene	106	12.744	12.745	(1.073)	922355	100.000	95.8	
	75 Styrene	104	12.823	12.824	(1.080)	1678283	100.000	96.6	
	76 Bromoform	173	12.823	12.824	(1.080)	347832	100.000	95.2	
	77 Isopropylbenzene	105	13.166	13.167	(0.888)	2294574	100.000	97.6	
$	78 P-Bromofluorobenzene	95	13.495	13.496	(1.807)	465384	50.0000	51.8	
	79 cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	261404	100.000	94.9	
	86 trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	201142	100.000	98.1	
	80 Bromobenzene	156	13.602	13.603	(0.917)	575008	100.000	106	
	81 N-Propylbenzene	91	13.681	13.681	(0.922)	2930499	100.000	99.1	

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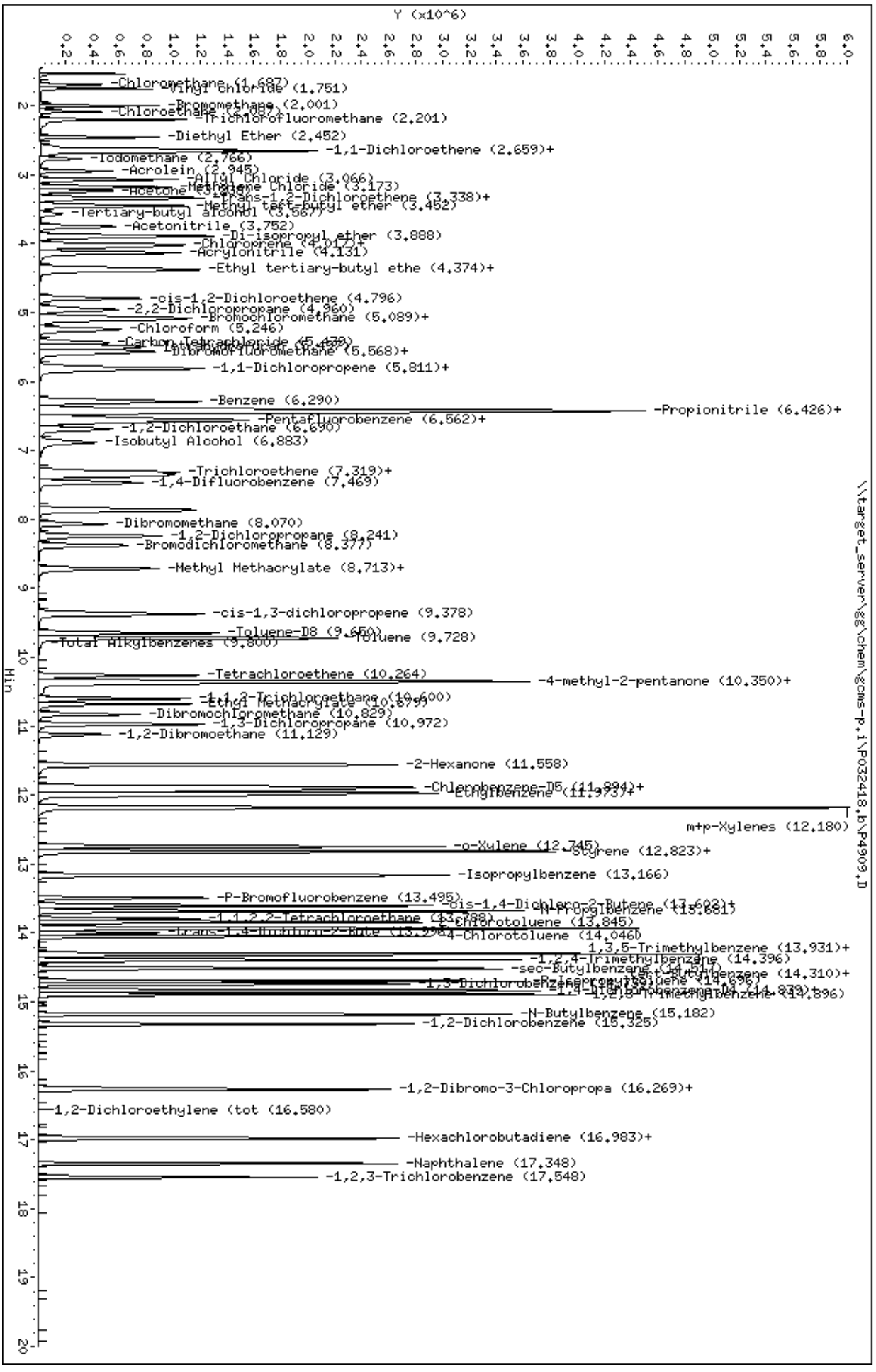
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.788	13.789	(0.930)	666976	100.000	102	
85	1,3,5-Trimethylbenzene	105	13.938	13.939	(0.940)	2041850	100.000	97.4	
83	2-Chlorotoluene	91	13.845	13.846	(0.933)	1726372	100.000	97.9	
84	1,2,3-Trichloropropane	75	13.924	13.925	(0.939)	630780	100.000	105	
87	4-Chlorotoluene	91	14.052	14.046	(0.947)	1860279	100.000	97.7	
88	tert-Butylbenzene	119	14.302	14.303	(0.964)	2021121	100.000	96.9	
89	Pentachloroethane	165	14.310	14.311	(0.965)	283570	100.000	109	
90	1,2,4-Trimethylbenzene	105	14.395	14.396	(0.971)	2123296	100.000	98.1	
92	P-Isopropyltoluene	119	14.696	14.697	(0.991)	2078119	100.000	96.5	
93	1,3-Dichlorobenzene	146	14.738	14.739	(0.994)	1117963	100.000	105	
* 94	1,4-Dichlorobenzene-D4	152	14.831	14.832	(1.000)	498781	50.0000		
95	1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	1189002	100.000	102	
97	N-Butylbenzene	91	15.182	15.183	(1.024)	1901969	100.000	96.6	
91	sec-Butylbenzene	105	14.517	14.518	(0.979)	2479238	100.000	97.7	
99	1,2-Dichlorobenzene	146	15.325	15.326	(1.033)	1070125	100.000	105	
100	1,2-Dibromo-3-Chloropropane	75	16.240	16.239	(1.095)	137887	100.000	107	
101	1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	751595	100.000	97.6	
102	Hexachlorobutadiene	225	16.969	16.969	(1.144)	217849	100.000	106	
103	1,2,4-Trichlorobenzene	180	16.990	16.991	(1.146)	689287	100.000	97.9	
96	1,2,3-Trimethylbenzene	105	14.896	14.897	(1.004)	2226978	100.000	97.8	
104	Naphthalene	128	17.347	17.347	(1.170)	1845268	100.000	99.4	
105	1,2,3-Trichlorobenzene	180	17.548	17.549	(1.183)	585678	100.000	97.9	
17	Methyl Acetate	43	3.352	3.360	(0.513)	448487	100.000	98.5	
46	Methylcyclohexane	83	7.312	7.313	(1.118)	731537	100.000	95.2	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Client ID:
Sample Info: WG225349-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
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Y (x10^6)
Min
-Chloromethane (1.687)
-Vinyl Chloride (1.751)
-Bromomethane (2.001)
-Chloroethane (2.087)
-Trichlorofluoromethane (2.201)
-Diethyl Ether (2.452)
-1,1-Dichloroethene (2.659)+
-Iodomethane (2.766)
-Acrolein (2.945)
-Allyl Chloride (3.066)
-Methylene Chloride (3.173)
-Acetone (3.259)
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.452)
-Tertiary-butyl alcohol (3.567)
-Acetonitrile (3.752)
-Di-isopropyl ether (3.888)
-Chloroprene (4.017)+
-Acrylonitrile (4.131)
-Ethyl tertiary-butyl ethe (4.374)+
-cis-1,2-Dichloroethene (4.796)
-2,2-Dichloropropane (4.960)
-Bromochloromethane (5.089)+
-Chloroform (5.246)
-Carbon Tetrachloride (5.439)
-Dibromofluoromethane (5.568)+
-1,1-Dichloropropene (5.811)+
-Benzene (6.290)
-Propionitrile (6.426)+
-Pentafluorobenzene (6.562)+
-1,2-Dichloroethane (6.690)
-Isobutyl Alcohol (6.883)
-Trichloroethene (7.319)+
-1,4-Difluorobenzene (7.469)
-Dibromomethane (8.070)
-1,2-Dichloropropane (8.241)
-Bromodichloromethane (8.377)
-Methyl Methacrylate (8.713)+
-cis-1,3-dichloropropene (9.378)
-Toluene-D8 (9.650)
-Toluene (9.728)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.264)
-4-methyl-2-pentanone (10.350)+
-1,1,2-Trichloroethane (10.600)
-Ethyl Methacrylate (10.679)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.129)
-2-Hexanone (11.558)
-Chlorobenzene-D5 (11.894)+
-Ethylbenzene (11.973)+
m+p-Xylenes (12.180)
-o-Xylene (12.745)
-Styrene (12.823)+
-Isopropylbenzene (13.166)
-P-Bromofluorobenzene (13.495)
-cis-1,4-Dichloro-2-Butene (13.603)+
-N-Propylbenzene (13.681)
-1,1,2,2-Tetrachloroethane (13.788)
-Chlorotoluene (13.845)
-trans-1,4-Dichloro-2-Bute (13.996)+
-4-Chlorotoluene (14.046)
-1,3,5-Trimethylbenzene (13.931)+
-1,2,4-Trimethylbenzene (14.396)
-sec-Butylbenzene (14.524)
-4-Isopropyltoluene (14.696)
-1,3-Dichlorobenzene (14.733)
-1,4-Dichlorobenzene-D4 (14.833)
-1,2,3-Trimethylbenzene (14.896)
-N-Butylbenzene (15.182)
-1,2-Dichlorobenzene (15.325)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.983)+
-Naphthalene (17.348)
-1,2,3-Trichlorobenzene (17.548)

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Report Date: 27-Mar-2018 12:01

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032618.b\P4915A.D
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Inj Date : 26-MAR-2018 09:09 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225398-6
Misc Info : WG225398,WG225398-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032618.b\P8A05(63)D.m
Meth Date : 27-Mar-2018 11:58 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.537	1.537	(0.235)	224099	52.6053	52.6	
2	Chloromethane	50	1.687	1.694	(0.258)	314137	50.0689	50.1	
3	Vinyl chloride	62	1.752	1.751	(0.268)	319061	49.2550	49.2	
4	Bromomethane	94	2.002	2.001	(0.306)	151217	42.4125	42.4	
5	Chloroethane	64	2.102	2.095	(0.322)	211334	50.0848	50.1	
6	Trichlorofluoromethane	101	2.209	2.209	(0.338)	434670	45.4187	45.4	
7	Diethyl Ether	59	2.452	2.459	(0.375)	237236	50.4631	50.5	
19	Tertiary-butyl alcohol	59	3.560	3.567	(0.545)	93091	221.389	221	
8	1,1-Dichloroethene	96	2.631	2.631	(0.403)	205532	47.8611	47.9	
10	Carbon Disulfide	76	2.667	2.666	(0.408)	788003	55.1408	55.1	
9	Freon-113	151	2.659	2.659	(0.407)	170862	46.8346	46.8	
11	Iodomethane	142	2.767	2.766	(0.423)	203455	60.4083	60.4(R)	
12	Acrolein	56	2.945	2.945	(0.451)	239423	249.497	249	
14	Methylene Chloride	84	3.174	3.174	(0.486)	236728	48.4779	48.5	
15	Acetone	43	3.231	3.238	(0.495)	70474	44.8360	44.8	
45	Isobutyl Alcohol	43	6.870	6.877	(1.051)	186121	920.819	921	
16	trans-1,2-Dichloroethene	96	3.338	3.338	(0.511)	221732	49.0258	49.0	
13	Allyl Chloride	41	3.067	3.067	(0.469)	355681	53.4436	53.4	
18	Methyl tert-butyl ether	73	3.453	3.453	(0.529)	637731	48.3246	48.3	
20	Acetonitrile	41	3.746	3.753	(0.573)	362326	463.011	463	
21	Di-isopropyl ether	45	3.889	3.889	(0.595)	764801	50.0464	50.0	
22	Chloroprene	53	4.010	4.017	(0.614)	366673	49.9821	50.0	
39	Propionitrile	54	6.391	6.398	(0.978)	401121	470.974	471	
40	Methacrylonitrile	41	6.419	6.426	(0.982)	1760945	463.283	463	

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Report Date: 27-Mar-2018 12:01

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	4.046	4.053	(0.619)	437716	54.9331	54.9	
	24	Acrylonitrile	52	4.125	4.131	(0.631)	445999	252.643	253	
	25	Ethyl tertiary-butyl ether	59	4.368	4.368	(0.669)	663226	49.6275	49.6	
	26	Vinyl Acetate	43	4.396	4.396	(0.589)	629978	55.9182	55.9	
	27	cis-1,2-Dichloroethene	96	4.789	4.797	(0.733)	241019	49.6407	49.6	
M	98	1,2-Dichloroethylene (total)	96				462751	98.6665	98.7	
	52	Methyl Methacrylate	41	8.707	8.714	(1.167)	227018	46.1530	46.2	
	28	2,2-Dichloropropane	77	4.954	4.961	(0.758)	336180	51.8449	51.8	
	29	Bromochloromethane	128	5.104	5.104	(0.781)	105818	53.1865	53.2	
	31	Chloroform	83	5.240	5.247	(0.802)	399912	51.6465	51.6	
	32	Carbon Tetrachloride	117	5.440	5.440	(0.729)	292541	52.8587	52.8	
	33	Tetrahydrofuran	42	5.504	5.504	(0.842)	74952	51.3589	51.4	
$	34	Dibromofluoromethane	113	5.561	5.561	(0.851)	268768	50.4116	50.4	
	35	1,1,1-Trichloroethane	97	5.569	5.576	(0.852)	343379	51.8095	51.8	
	37	1,1-Dichloropropene	75	5.797	5.812	(0.777)	315093	47.6044	47.6	
	36	2-Butanone	43	5.826	5.826	(0.892)	111720	46.6589	46.6	
	38	Benzene	78	6.283	6.290	(0.842)	946132	53.1798	53.2	
*	41	Pentafluorobenzene	168	6.534	6.541	(1.000)	548900	50.0000		
	30	Cyclohexane	56	5.075	5.082	(0.777)	364870	46.1775	46.2	
	53	Ethyl Methacrylate	69	10.679	10.686	(1.431)	323737	44.5993	44.6	
$	42	1,2-Dichloroethane-D4	65	6.562	6.569	(1.004)	369128	48.9946	49.0	
	43	Tertiary-amyl methyl ether	73	6.562	6.569	(1.004)	616840	55.0493	55.0	
	44	1,2-Dichloroethane	62	6.684	6.691	(0.896)	346013	49.2380	49.2	
	47	Trichloroethene	95	7.356	7.363	(0.986)	226698	52.9659	53.0	
*	48	1,4-Difluorobenzene	114	7.463	7.470	(1.000)	905314	50.0000		
	49	Dibromomethane	93	8.063	8.070	(1.080)	142693	52.7278	52.7	
	50	1,2-Dichloropropane	63	8.235	8.242	(1.103)	238511	47.7758	47.8	
	51	Bromodichloromethane	83	8.378	8.385	(1.123)	323655	55.7430	55.7	
	57	cis-1,3-dichloropropene	75	9.378	9.378	(1.257)	414973	46.6510	46.6	
	54	1,4-Dioxane	88	8.714	8.721	(1.168)	52796	891.963	892	
$	58	Toluene-D8	98	9.643	9.650	(1.292)	1130076	50.6047	50.6	
	59	Toluene	92	9.722	9.729	(1.303)	606546	52.1472	52.1	
	61	4-methyl-2-pentanone	43	10.351	10.351	(1.387)	227426	47.5705	47.6	
	60	Tetrachloroethene	164	10.265	10.272	(0.865)	177522	53.8241	53.8	
	62	trans-1,3-Dichloropropene	75	10.372	10.379	(1.390)	391019	46.8637	46.9	
	63	1,1,2-Trichloroethane	83	10.594	10.601	(1.419)	184191	51.3145	51.3	
	64	Dibromochloromethane	129	10.822	10.829	(0.912)	236242	49.4658	49.5	
	65	1,3-Dichloropropane	76	10.965	10.972	(0.924)	418906	47.4261	47.4	
	66	1,2-Dibromoethane	107	11.123	11.130	(1.490)	217535	46.5177	46.5	
	67	2-Hexanone	43	11.559	11.559	(0.974)	150981	45.9500	46.0	
*	68	Chlorobenzene-D5	117	11.866	11.873	(1.000)	891916	50.0000		
	69	Chlorobenzene	112	11.887	11.894	(1.002)	675531	51.2770	51.3	
	70	1-Chlorohexane	91	11.923	11.923	(1.005)	353445	49.2423	49.2	
	71	Ethylbenzene	106	11.966	11.973	(1.008)	364615	47.5450	47.5	
	72	1,1,1,2-Tetrachloroethane	131	12.002	12.009	(1.011)	238586	53.4027	53.4	
M	106	Xylenes (total)	106				1350861	141.560	142	
	73	m+p-Xylenes	106	12.181	12.180	(1.027)	926992	94.4902	94.5	
	74	o-Xylene	106	12.738	12.745	(1.073)	423869	47.0698	47.1	
	75	Styrene	104	12.817	12.824	(1.080)	760441	47.0069	47.0	
	76	Bromoform	173	12.817	12.824	(1.080)	163878	48.0452	48.0	
	77	Isopropylbenzene	105	13.160	13.167	(0.888)	1109479	50.0533	50.0	
$	78	P-Bromofluorobenzene	95	13.489	13.496	(1.807)	452295	51.1680	51.2	
	79	cis-1,4-Dichloro-2-Butene	53	13.603	13.610	(0.918)	121883	47.1157	47.1	
	86	trans-1,4-Dichloro-2-Butene	53	13.996	13.996	(0.944)	96839	49.4739	49.5	

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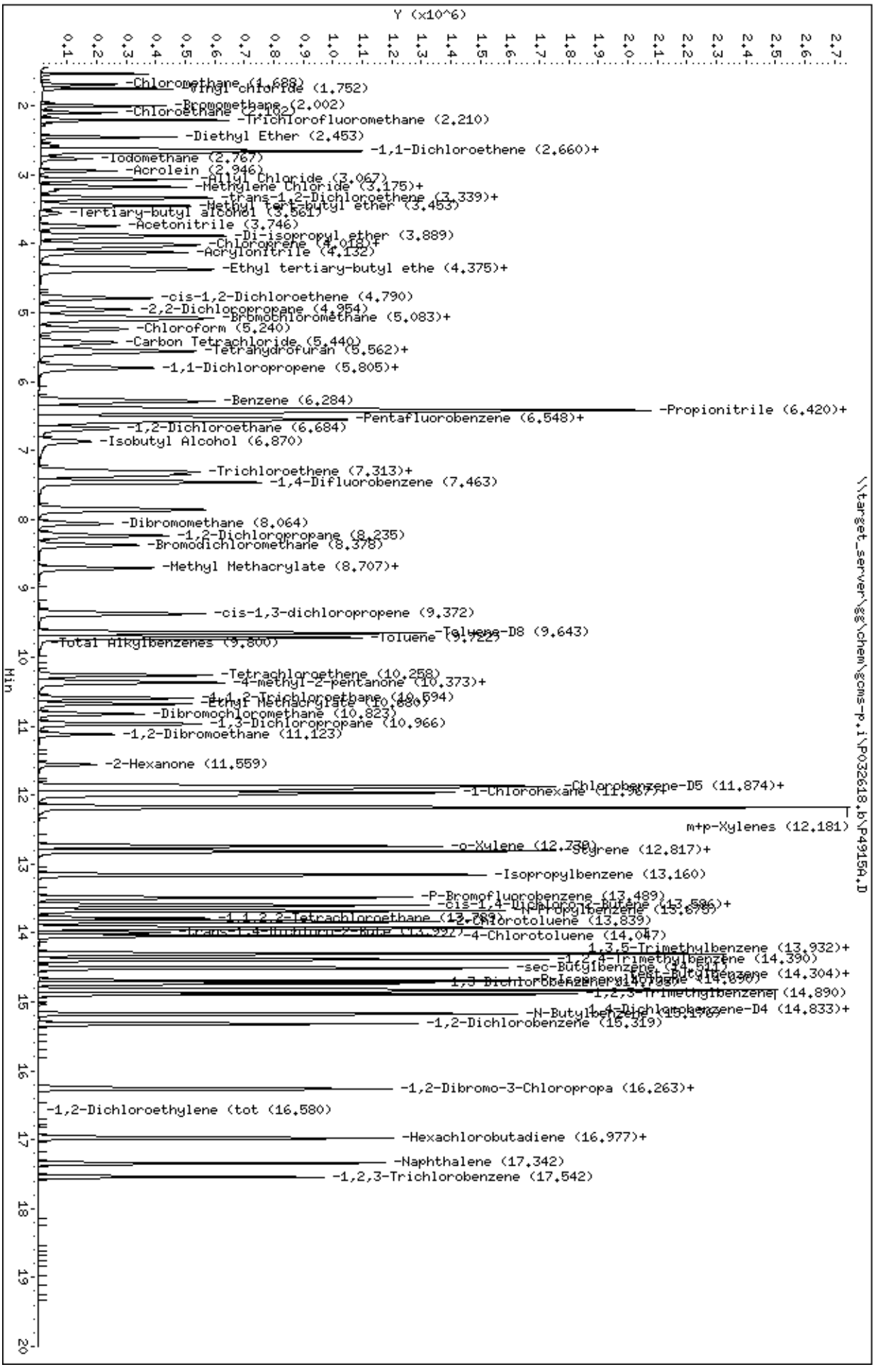
Report Date: 27-Mar-2018 12:01

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.596	13.603	(0.917)	271629	52.1135	52.1	
	81	N-Propylbenzene	91	13.674	13.681	(0.922)	1367053	48.5881	48.6	
	82	1,1,2,2-Tetrachloroethane	83	13.789	13.789	(0.930)	317709	50.6389	50.6	
	85	1,3,5-Trimethylbenzene	105	13.932	13.939	(0.940)	933588	47.3303	47.3	
	83	2-Chlorotoluene	91	13.839	13.846	(0.933)	797894	47.8358	47.8	
	84	1,2,3-Trichloropropane	75	13.925	13.925	(0.939)	276933	48.3573	48.4	
	87	4-Chlorotoluene	91	14.046	14.046	(0.947)	858738	47.6332	47.6	
	88	tert-Butylbenzene	119	14.303	14.303	(0.965)	922841	47.1501	47.2	
	89	Pentachloroethane	165	14.311	14.311	(0.965)	132652	53.1396	53.1	
	90	1,2,4-Trimethylbenzene	105	14.389	14.396	(0.971)	977739	47.8829	47.9	
	92	P-Isopropyltoluene	119	14.689	14.697	(0.991)	974992	48.2104	48.2	
	93	1,3-Dichlorobenzene	146	14.732	14.739	(0.994)	531640	52.1769	52.2	
*	94	1,4-Dichlorobenzene-D4	152	14.825	14.832	(1.000)	477056	50.0000		
	95	1,4-Dichlorobenzene	146	14.847	14.847	(1.001)	554232	49.6606	49.7	
	97	N-Butylbenzene	91	15.176	15.183	(1.024)	897629	48.4476	48.4	
	91	sec-Butylbenzene	105	14.511	14.518	(0.979)	1159195	48.3183	48.3	
	99	1,2-Dichlorobenzene	146	15.318	15.326	(1.033)	505944	51.9379	51.9	
	100	1,2-Dibromo-3-Chloropropane	75	16.233	16.239	(1.095)	58565	48.9473	48.9	
	101	1,3,5-Trichlorobenzene	180	16.262	16.268	(1.097)	357370	48.8605	48.9	
	102	Hexachlorobutadiene	225	16.963	16.969	(1.144)	102594	51.9781	52.0	
	103	1,2,4-Trichlorobenzene	180	16.984	16.991	(1.146)	313680	47.3457	47.3	
	96	1,2,3-Trimethylbenzene	105	14.890	14.897	(1.004)	1047480	48.5615	48.6	
	104	Naphthalene	128	17.341	17.347	(1.170)	818071	47.0607	47.1	
	105	1,2,3-Trichlorobenzene	180	17.542	17.549	(1.183)	269501	47.3632	47.4	
	17	Methyl Acetate	43	3.353	3.360	(0.513)	198256	44.1948	44.2	
	46	Methylcyclohexane	83	7.306	7.313	(1.118)	371783	49.8638	49.9	
M	55	Total Alkylbenzenes	100				7233037	335.928	336	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.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Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
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Y (x10^6)
Min
-Chloromethane (1.688)
-Vinyl chloride (1.752)
-Bromomethane (2.002)
-Chloroethane (2.102)
-Trichlorofluoromethane (2.210)
-Diethyl Ether (2.453)
-1,1-Dichloroethene (2.660)+
-Iodomethane (2.767)
-Acrolein (2.946)
-Allyl Chloride (3.067)
-Methylene Chloride (3.175)+
-trans-1,2-Dichloroethene (3.339)+
-Methyl tert-butyl ether (3.453)
-Tertiary-butyl alcohol (3.561)
-Acetonitrile (3.746)
-Di-isopropyl ether (3.889)
-Chloroprene (4.018)+
-Acrylonitrile (4.132)
-Ethyl tertiary-butyl ethe (4.375)+
-cis-1,2-Dichloroethene (4.790)
-2,2-Dichloropropane (4.954)
-Bromochloromethane (5.083)+
-Chloroform (5.240)
-Carbon Tetrachloride (5.440)
-Tetrahydrofuran (5.562)+
-1,1-Dichloropropene (5.805)+
-Benzene (6.284)
-Propionitrile (6.420)+
-Pentafluorobenzene (6.548)+
-1,2-Dichloroethane (6.684)
-Isobutyl Alcohol (6.870)
-Trichloroethene (7.313)+
-1,4-Difluorobenzene (7.463)
-Dibromomethane (8.064)
-1,2-Dichloropropane (8.235)
-Bromodichloromethane (8.378)
-Methyl Methacrylate (8.707)+
-cis-1,3-dichloropropene (9.372)
-Toluene-D8 (9.643)
-Toluene (9.722)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.258)
-4-methyl-2-pentanone (10.373)+
-1,1,2-Trichloroethane (10.594)
-Ethyl Methacrylate (10.680)
-Dibromochloromethane (10.823)
-1,3-Dichloropropane (10.966)
-1,2-Dibromoethane (11.123)
-2-Hexanone (11.559)
-Chlorobenzene-D5 (11.874)+
-1-Chlorohexane (11.907)+
m+p-Xylenes (12.181)
-o-Xylene (12.738)
-Styrene (12.817)+
-Isopropylbenzene (13.160)
-P-Bromofluorobenzene (13.489)
-cis-1,4-Dichloro-2-Butene (13.586)+
-n-Propylbenzene (13.678)
-1,1,2,2-Tetrachloroethane (13.783)
-2-Chlorotoluene (13.839)
-trans-1,4-Dichloro-2-Bute (13.992)
-4-Chlorotoluene (14.047)
-1,3,5-Trimethylbenzene (13.932)+
-1,2,4-Trimethylbenzene (14.390)
-sec-Butylbenzene (14.511)
-tert-Butylbenzene (14.304)+
-1,3-Dichlorobenzene (14.796)+
-1,2,3-Trimethylbenzene (14.890)
-N-Butylbenzene (15.170)
-1,4-Dichlorobenzene-D4 (14.833)+
-1,2-Dichlorobenzene (15.319)
-1,2-Dibromo-3-Chloropropa (16.263)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.977)+
-Naphthalene (17.342)
-1,2,3-Trichlorobenzene (17.542)

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2295
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-T
Lab File IDs : T4707.D T4706.D T4705.D T4704.D T4709.D T4708.D
Column ID:
Calibration Date(s): 24-MAR-18 12:36 24-MAR-18 15:39

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	1.0000	5.0000	20.0000	50.0000	100.0000	150.0000	New	b	m1	m2	%RSD	%RSD	
Dichlorodifluoromethane	0.40149	0.49313	0.47933	0.46297	0.44557	0.43048	AVG		0.45216		7.41106	15.00000	O
Chloromethane	12276	40981	150224	340714	643007	840971	LNR	-0.06514	0.57136		0.99578	0.99000	O
Vinyl chloride	0.33033	0.35350	0.39179	0.38780	0.39081	0.37569	AVG		0.37165		6.68526	15.00000	O
Bromomethane	2363	8312	30568	65349	132863	190748	LNR	-0.02498	0.12641		0.99948	0.99000	O
Chloroethane	0.17613	0.17912	0.18971	0.17145	0.16863	0.15587	AVG		0.17348		6.52146	15.00000	O
Trichlorofluoromethane	0.65340	0.59654	0.59536	0.55987	0.51420	0.48293	AVG		0.56705		10.8846	15.00000	O
1,1-Dichloroethene	0.30202	0.28600	0.28464	0.28872	0.27323	0.25730	AVG		0.28199		5.39262	15.00000	O
Freon-113	0.23913	0.27894	0.25011	0.24065	0.22207	0.21146	AVG		0.24040		9.76453	15.00000	O
Carbon Disulfide	0.94914	0.79584	0.87341	0.83093	0.82664	0.77719	AVG		0.84219		7.34918	15.00000	O
Methylene Chloride	6841	24004	109449	269774	561441	768285	LNR	-0.00758	0.52026		0.99953	0.99000	O
Acetone	8493	35098	137692	360415	658223	882176	LNR	-0.21204	0.12003		0.99651	0.99000	O
trans-1,2-Dichloroethene	0.58246	0.46857	0.51479	0.52434	0.51921	0.50367	AVG		0.51884		7.13469	15.00000	O
Methyl tert-butyl ether	1.41683	1.23610	1.44123	1.51715	1.53861	1.48369	AVG		1.43894		7.59329	15.00000	O
1,1-Dichloroethane	0.91290	0.84342	0.92038	0.90147	0.92047	0.87469	AVG		0.89556		3.43304	15.00000	O
cis-1,2-Dichloroethene	0.46835	0.45048	0.52244	0.53402	0.56376	0.53563	AVG		0.51245		8.51522	15.00000	O
2,2-Dichloropropane	0.68501	0.59991	0.69345	0.72367	0.72237	0.69356	AVG		0.68633		6.60211	15.00000	O
Bromochloromethane	0.26678	0.21242	0.24417	0.24714	0.23609	0.21779	AVG		0.23740		8.45363	15.00000	O
Chloroform	0.98164	0.78560	0.90271	0.89561	0.92905	0.90183	AVG		0.89941		7.14059	15.00000	O
Carbon Tetrachloride	3533	21544	108193	284490	649992	907224	LNR	0.02352	0.38777		0.99885	0.99000	O
1,1,1-Trichloroethane	0.74967	0.66651	0.76442	0.78186	0.80362	0.78070	AVG		0.75780		6.36877	15.00000	O
2-Butanone	0.17183	0.16995	0.20162	0.21908	0.21104	0.20577	AVG		0.19655		10.5430	15.00000	O
1,1-Dichloropropene	0.42036	0.37951	0.44995	0.47075	0.48069	0.44905	AVG		0.44172		8.35405	15.00000	O
Benzene	1.23910	1.10157	1.32019	1.30051	1.33761	1.23714	AVG		1.25602		6.87210	15.00000	O
1,2-Dichloroethane	0.52474	0.43589	0.46297	0.46584	0.46892	0.45235	AVG		0.46845		6.42160	15.00000	O
Trichloroethene	0.35040	0.31770	0.35696	0.36572	0.35353	0.32860	AVG		0.34548		5.31697	15.00000	O
Dibromomethane	0.21737	0.17938	0.19331	0.20608	0.21224	0.20844	AVG		0.20280		6.91276	15.00000	O
1,2-Dichloropropane	0.29139	0.25822	0.30790	0.31667	0.33521	0.31923	AVG		0.30477		8.84495	15.00000	O
Bromodichloromethane	0.37243	0.34364	0.39692	0.41618	0.44120	0.42488	AVG		0.39921		9.04612	15.00000	O
cis-1,3-dichloropropene	5116	28043	162997	445088	959950	1346708	LNR	0.01765	0.57511		0.99937	0.99000	O
Toluene	0.77585	0.67018	0.76509	0.78712	0.79938	0.73896	AVG		0.75610		6.19824	15.00000	O
Tetrachloroethene	0.28538	0.24044	0.26966	0.27330	0.28622	0.27123	AVG		0.27104		6.12913	15.00000	O
4-methyl-2-pentanone	12249	70857	388010	1062670	2144787	2868531	LNR	-0.04780	0.24807		0.99686	0.99000	O
trans-1,3-Dichloropropene	5159	25957	141618	382649	828051	1152437	LNR	0.01396	0.49275		0.99919	0.99000	O
1,1,2-Trichloroethane	0.19376	0.20967	0.23564	0.24119	0.24390	0.23738	AVG		0.22692		8.97733	15.00000	O
Dibromochloromethane	0.26763	0.24851	0.30705	0.33923	0.35944	0.35566	AVG		0.31292		14.9330	15.00000	O
1,3-Dichloropropane	0.57969	0.56247	0.64771	0.67737	0.69563	0.67980	AVG		0.64044		8.77257	15.00000	O
1,2-Dibromoethane	0.23183	0.21030	0.25084	0.27518	0.28309	0.27667	AVG		0.25465		11.4047	15.00000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SL2295
Project : Cornhusker Army Ammunition Plant
Instrument ID: GCMS-T
Lab File IDs : T4707.D T4706.D T4705.D T4704.D T4709.D T4708.D
Column ID:
Calibration Date(s): 24-MAR-18 12:36
24-MAR-18 15:39

2-Hexanone	6157	41083	252046	715706	1462412	1974863	LNR	0.04225	0.21710		0.99838	0.99000	O
Chlorobenzene	0.96998	0.86139	0.94741	0.94670	0.96898	0.90765	AVG		0.93369		4.49947	15.00000	O
Ethylbenzene	0.44275	0.41602	0.51524	0.52797	0.54191	0.51522	AVG		0.49318		10.36021	15.00000	O
1,1,1,2-Tetrachloroethane	0.28610	0.23429	0.29948	0.30776	0.33035	0.32272	AVG		0.29678		11.62008	15.00000	O
m+p-Xylenes	0.43583	0.46059	0.59898	0.61152	0.61051	0.56901	AVG		0.54774		14.42259	15.00000	O
o-Xylene	3964	21595	129931	363297	784689	1075260	LNR	0.02202	0.58878		0.99892	0.99000	O
Styrene	5876	33569	217751	597015	1261574	1720157	LNR	0.01556	0.94264		0.99890	0.99000	O
Bromoform	1734	8987	44978	132059	284018	410926	LNR	0.03559	0.22194		0.99925	0.99000	O
Isopropylbenzene	9063	53377	332496	892597	1861535	2497828	LNR	-0.00012	3.11110		0.99651	0.99000	O
Bromobenzene	0.85575	0.64243	0.77657	0.77729	0.80965	0.76604	AVG		0.77129		9.22312	15.00000	O
N-Propylbenzene	3.52209	3.07745	4.12295	4.06082	4.11527	3.69441	AVG		3.76550		11.10978	15.00000	O
1,1,2,2-Tetrachloroethane	1.06731	0.77136	0.84754	0.88053	0.91673	0.87710	AVG		0.89343		10.99149	15.00000	O
2-Chlorotoluene	2.10468	1.84649	2.39439	2.38048	2.45101	2.29022	AVG		2.24454		10.23078	15.00000	O
1,2,3-Trichloropropane	0.79025	0.72678	0.81031	0.82271	0.82660	0.79552	AVG		0.79536		4.59473	15.00000	O
1,3,5-Trimethylbenzene	7641	43696	274662	734623	1522087	2066242	LNR	0.00057	2.56331		0.99727	0.99000	O
4-Chlorotoluene	2.07279	2.02192	2.51066	2.54441	2.59804	2.40452	AVG		2.35872		10.59255	15.00000	O
tert-Butylbenzene	6764	41052	239055	639344	1348821	1837446	LNR	0.00424	2.27659		0.99755	0.99000	O
1,2,4-Trimethylbenzene	6898	45405	281781	750665	1564193	2134334	LNR	0.00281	2.64369		0.99760	0.99000	O
sec-Butylbenzene	8949	59018	341036	907603	1885318	2513019	LNR	-0.00449	3.13403		0.99605	0.99000	O
P-Isopropyltoluene	6764	41052	239055	639344	1348821	1837446	LNR	0.00424	2.27659		0.99755	0.99000	O
1,3-Dichlorobenzene	1.31572	1.10834	1.34993	1.34059	1.37057	1.29924	AVG		1.29740		7.39779	15.00000	O
1,4-Dichlorobenzene	1.57339	1.23728	1.37652	1.37413	1.41361	1.30618	AVG		1.38019		8.22254	15.00000	O
N-Butylbenzene	7549	39180	247662	705944	1465585	2001992	LNR	0.00839	2.48410		0.99752	0.99000	O
1,2-Dichlorobenzene	1.10178	1.07792	1.25022	1.28197	1.33353	1.25045	AVG		1.21598		8.43779	15.00000	O
1,2-Dibromo-3-Chloropropane	0.15598	0.12913	0.13428	0.15286	0.16338	0.18775	AVG		0.15390		13.75230	15.00000	O
Hexachlorobutadiene	0.33631	0.31563	0.38021	0.38954	0.41113	0.39162	AVG		0.37074		9.89859	15.00000	O
1,2,4-Trichlorobenzene	2777	13795	81124	233234	499851	709306	LNR	0.02367	0.87080		0.99897	0.99000	O
Naphthalene	3151	19520	148790	504443	1119834	1632220	LNR	0.05460	2.00560		0.99823	0.99000	O
1,2,3-Trichlorobenzene	2148	12681	70383	202429	442587	639589	LNR	0.03211	0.78181		0.99907	0.99000	O
Dibromofluoromethane	0.52284	0.50900	0.49163	0.49276	0.49495	0.50738	AVG		0.50309		2.43078	15.00000	
1,2-Dichloroethane-D4	0.72101	0.68488	0.68041	0.67998	0.65958	0.68506	AVG		0.68515		2.91108	15.00000	
Toluene-D8	1.15525	1.15441	1.16952	1.18435	1.19144	1.18460	AVG		1.17326		1.36134	15.00000	
P-Bromofluorobenzene	0.36001	0.37037	0.37984	0.39187	0.38112	0.39229	AVG		0.37925		3.29782	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Report Date: 04-Apr-2018 05:53

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG225352-7
Level: LOW Operator: JSS
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all50.sub
Method File: \\target_server\gg\chem\gcms-t.i\T032418.b\T8A05(23)D.m
Misc Info: WG225352,WG225352-4,SL2295-1

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	42.3	84.54	80-120
	2	Chloromethane	50.0	50.3	100.53	80-120
	3	Vinyl chloride	50.0	47.3	94.58	80-120
	4	Bromomethane	50.0	51.4	102.72	80-120
	5	Chloroethane	50.0	52.5	104.93	80-120
	6	Trichlorofluoromet	50.0	45.9	91.74	80-120
	7	Diethyl Ether	50.0	50.9	101.81	80-120
	19	Tertiary-butyl alc	250	285	113.91	80-120
	8	1,1-Dichloroethene	50.0	46.8	93.71	80-120
	10	Carbon Disulfide	50.0	53.5	107.03	80-120
	9	Freon-113	50.0	51.0	101.94	80-120
	11	Iodomethane	50.0	58.5	117.00	80-120
	12	Acrolein	250	253	101.34	80-120
	14	Methylene Chloride	50.0	49.6	99.13	80-120
	15	Acetone	50.0	46.6	93.13	80-120
	45	Isobutyl Alcohol	1000	1060	106.25	80-120
	16	trans-1,2-Dichloro	50.0	51.3	102.65	80-120
	13	Allyl Chloride	50.0	52.8	105.69	80-120
	18	Methyl tert-butyl	50.0	53.2	106.33	80-120
	20	Acetonitrile	500	504	100.70	80-120
	21	Di-isopropyl ether	50.0	55.6	111.30	80-120
	22	Chloroprene	50.0	55.5	111.04	80-120
	39	Propionitrile	500	523	104.67	80-120
	40	Methacrylonitrile	500	549	109.80	80-120
	23	1,1-Dichloroethane	50.0	53.6	107.19	80-120
	24	Acrylonitrile	250	266	106.57	80-120
	25	Ethyl tertiary-but	50.0	51.4	102.88	80-120
	26	Vinyl Acetate	50.0	58.6	117.30	80-120
	27	cis-1,2-Dichloroet	50.0	54.0	107.99	80-120
M	98	1,2-Dichloroethyle	100	105	105.32	80-120
	52	Methyl Methacrylat	50.0	49.1	98.29	80-120
	28	2,2-Dichloropropan	50.0	51.9	103.77	80-120
	29	Bromochloromethane	50.0	51.2	102.43	80-120
	31	Chloroform	50.0	51.3	102.62	80-120
	32	Carbon Tetrachlori	50.0	48.8	97.63	80-120
	33	Tetrahydrofuran	50.0	53.4	106.73	80-120
	35	1,1,1-Trichloroeth	50.0	50.8	101.70	80-120
	37	1,1-Dichloropropen	50.0	52.5	105.09	80-120
	36	2-Butanone	50.0	53.9	107.81	80-120
	38	Benzene	50.0	52.1	104.14	80-120

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Report Date: 04-Apr-2018 05:53

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	30 Cyclohexane	50.0	50.9	101.89	80-120
	53 Ethyl Methacrylate	50.0	48.1	96.24	80-120
	43 Tertiary-amyl meth	50.0	54.0	108.12	80-120
	44 1,2-Dichloroethane	50.0	49.4	98.73	80-120
	47 Trichloroethene	50.0	50.4	100.87	80-120
	49 Dibromomethane	50.0	50.9	101.78	80-120
	50 1,2-Dichloropropan	50.0	52.3	104.65	80-120
	51 Bromodichlorometha	50.0	54.4	108.79	80-120
	57 cis-1,3-dichloropr	50.0	47.8	95.54	80-120
	54 1,4-Dioxane	1000	1190	118.74	80-120
	56 2-Chloroethylvinyl	50.0	0.00	0.00*	80-120
	59 Toluene	50.0	50.8	101.68	80-120
	61 4-methyl-2-pentano	50.0	47.7	95.35	80-120
	60 Tetrachloroethene	50.0	52.5	105.05	80-120
	62 trans-1,3-Dichloro	50.0	48.8	97.64	80-120
	63 1,1,2-Trichloroeth	50.0	51.6	103.23	80-120
	64 Dibromochlorometha	50.0	55.2	110.50	80-120
	65 1,3-Dichloropropan	50.0	51.4	102.74	80-120
	66 1,2-Dibromoethane	50.0	53.0	106.06	80-120
	67 2-Hexanone	50.0	46.1	92.20	80-120
	69 Chlorobenzene	50.0	50.9	101.78	80-120
	70 1-Chlorohexane	50.0	48.0	95.94	80-120
	71 Ethylbenzene	50.0	53.6	107.13	80-120
	72 1,1,1,2-Tetrachlor	50.0	52.9	105.86	80-120
M	106 Xylenes (total)	150	161	107.49	80-120
	73 m+p-Xylenes	100	111	111.42	80-120
	74 o-Xylene	50.0	49.8	99.61	80-120
	75 Styrene	50.0	50.5	101.04	80-120
	76 Bromoform	50.0	49.2	98.35	80-120
	77 Isopropylbenzene	50.0	52.6	105.14	80-120
	79 cis-1,4-Dichloro-2	50.0	49.0	97.90	80-120
	86 trans-1,4-Dichloro	50.0	53.7	107.40	80-120
	80 Bromobenzene	50.0	50.4	100.78	80-120
	81 N-Propylbenzene	50.0	53.5	107.04	80-120
	82 1,1,2,2-Tetrachlor	50.0	50.2	100.49	80-120
	85 1,3,5-Trimethylben	50.0	50.3	100.65	80-120
	83 2-Chlorotoluene	50.0	53.2	106.33	80-120
	84 1,2,3-Trichloropro	50.0	49.0	98.08	80-120
	87 4-Chlorotoluene	50.0	53.4	106.89	80-120
	88 tert-Butylbenzene	50.0	50.2	100.33	80-120
	89 Pentachloroethane	50.0	53.8	107.57	80-120
	90 1,2,4-Trimethylben	50.0	50.2	100.42	80-120
	92 P-Isopropyltoluene	50.0	50.2	100.33	80-120
	93 1,3-Dichlorobenzen	50.0	51.7	103.36	80-120
	95 1,4-Dichlorobenzen	50.0	48.3	96.68	80-120
	97 N-Butylbenzene	50.0	50.7	101.47	80-120
	91 sec-Butylbenzene	50.0	51.1	102.19	80-120
	99 1,2-Dichlorobenzen	50.0	51.4	102.79	80-120
	100 1,2-Dibromo-3-Chlo	50.0	49.8	99.63	80-120
	101 1,3,5-Trichloroben	50.0	49.8	99.70	80-120
	102 Hexachlorobutadien	50.0	51.1	102.27	80-120
	103 1,2,4-Trichloroben	50.0	49.4	98.77	80-120
	96 1,2,3-Trimethylben	50.0	54.1	108.22	80-120
	104 Naphthalene	50.0	49.0	97.93	80-120

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Report Date: 04-Apr-2018 05:53

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	105 1,2,3-Trichloroben	50.0	48.6	97.26	80-120
	17 Methyl Acetate	50.0	49.0	97.97	80-120
	46 Methylcyclohexane	50.0	58.0	116.07	80-120
M	55 Total Alkylbenzene	350	356	101.78	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	34 Dibromofluorometha	50.0	49.7	99.49	80-119
$	42 1,2-Dichloroethane	50.0	49.6	99.12	81-118
$	58 Toluene-D8	50.0	49.8	99.56	89-112
$	78 P-Bromofluorobenze	50.0	51.4	102.74	85-114

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4704.D
Report Date: 04-Apr-2018 05:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032418.b\T4704.D
Lab Smp Id: WG225352-4
Inj Date : 24-MAR-2018 12:36
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225352-4
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032418.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 12:36   Cal File: T4704.D
Als bottle: 2   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

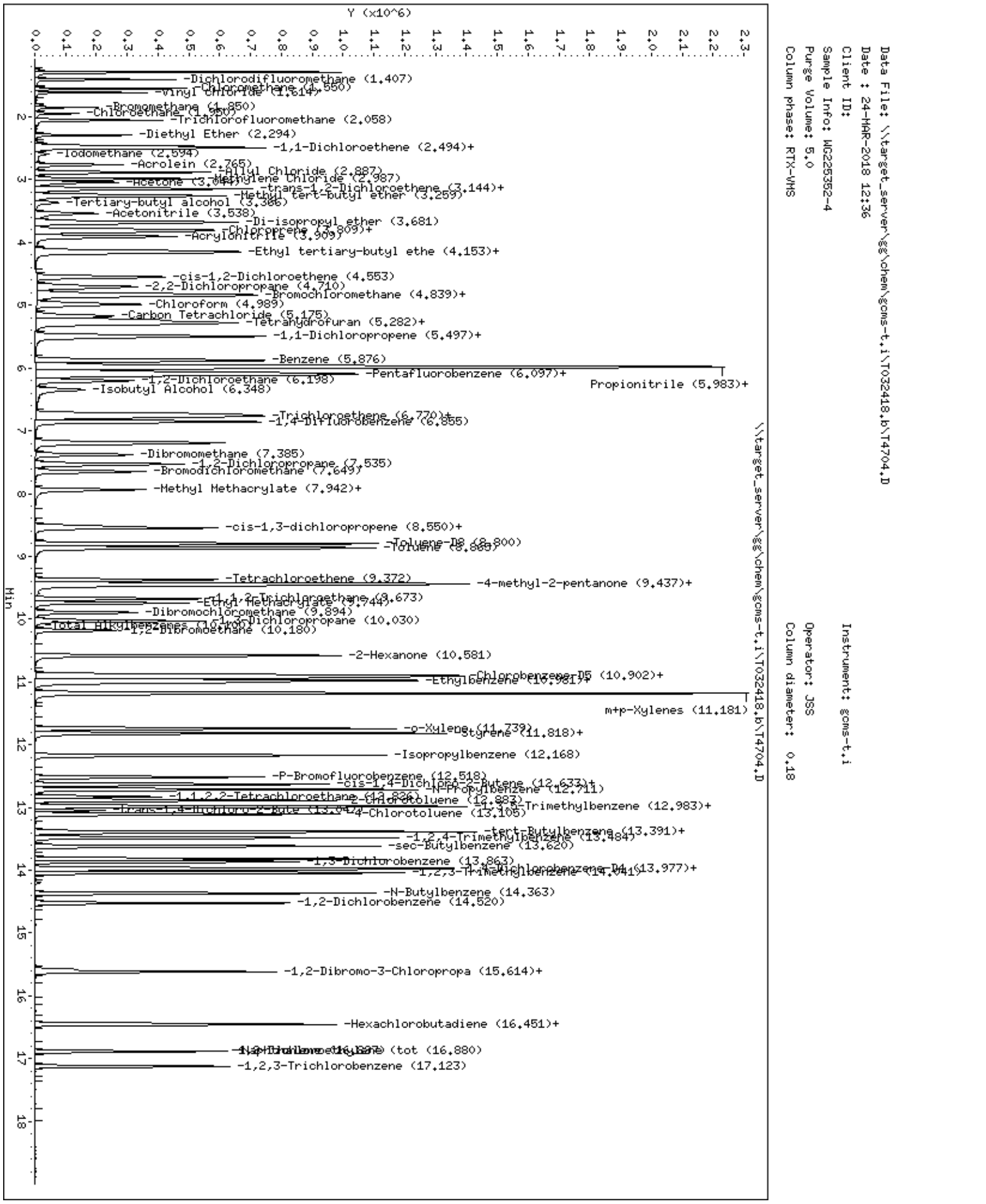
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	253386	50.0000	(a)	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	514221	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	349658	50.0000	(a)	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	793305	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	939551	50.0000	(a)	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	642935	50.0000		
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	310870	50.0000	(a)	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	281146	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Client ID:
Sample Info: WG225352-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-t.i\T032418.b\T4704.D
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.950)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.386)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.809)+
-Acrylonitrile (3.909)
-Ethyl tertiary-butyl ethe (4.153)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.710)
-Bromochloromethane (4.839)+
-Chloroform (4.989)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Pentafluorobenzene (6.097)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.198)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.770)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.385)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.942)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.889)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Alkylbenzenes (10.100)
1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.981)+
m+p-Xylenes (11.181)
-o-Xylene (11.739)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.518)
-cis-1,4-Dichloro-2-Butene (12.633)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.887)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.042)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.451)+
(tot (16.880)
-1,2,3-Trichlorobenzene (17.123)

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4705.D
Report Date: 04-Apr-2018 05:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032418.b\T4705.D
Lab Smp Id: WG225352-3
Inj Date : 24-MAR-2018 13:13
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225352-3
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032418.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 13:13   Cal File: T4705.D
Als bottle: 3   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

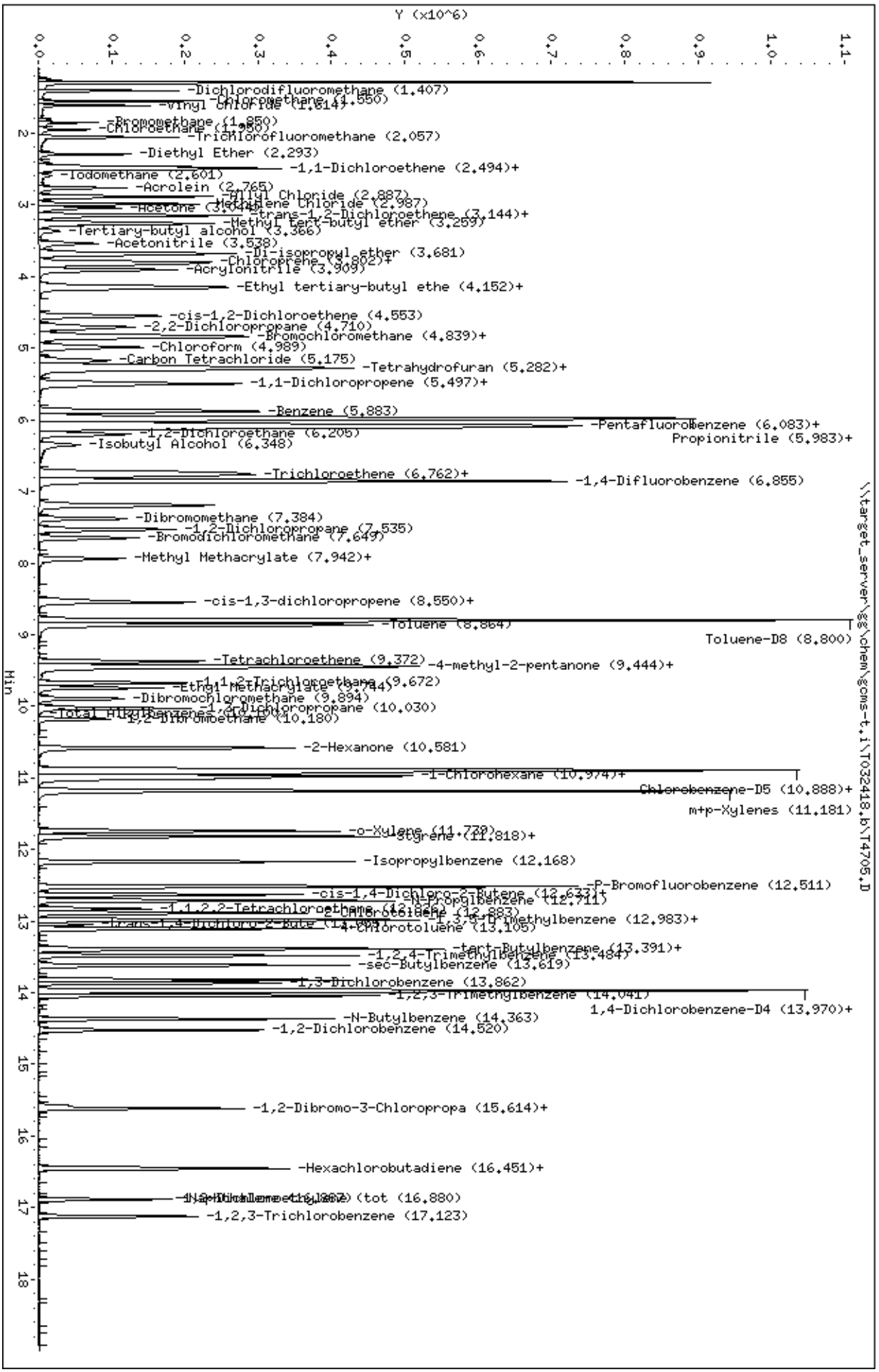
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	97795	20.0000	20.7	
2	Chloromethane	50	1.549	1.549	(0.255)	150224	20.0000	22.2	
3	Vinyl chloride	62	1.614	1.614	(0.266)	79935	20.0000	20.2	
4	Bromomethane	94	1.850	1.850	(0.305)	30568	20.0000	23.6	
5	Chloroethane	64	1.950	1.943	(0.321)	38705	20.0000	22.1	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	121469	20.0000	21.3	
7	Diethyl Ether	59	2.293	2.293	(0.378)	54446	20.0000	19.8	
19	Tertiary-butyl alcohol	59	3.365	3.373	(0.555)	36628	100.000	91.8	
8	1,1-Dichloroethene	96	2.464	2.465	(0.406)	58074	20.0000	19.7	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	178198	20.0000	21.0	
9	Freon-113	151	2.493	2.486	(0.411)	51030	20.0000	20.8	
11	Iodomethane	142	2.593	2.593	(0.427)	16281	20.0000	17.3	
12	Acrolein	56	2.765	2.765	(0.456)	94400	100.000	97.4	
14	Methylene Chloride	84	2.986	2.987	(0.492)	109449	20.0000	20.4	
15	Acetone	43	3.044	3.044	(0.502)	137692	100.000	96.3	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	52213	400.000	332	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	105031	20.0000	19.6	
13	Allyl Chloride	41	2.886	2.887	(0.476)	144543	20.0000	20.6	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	294048	20.0000	19.0	
20	Acetonitrile	41	3.537	3.537	(0.583)	117112	200.000	203	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	287391	20.0000	19.6	
22	Chloroprene	53	3.802	3.802	(0.627)	148059	20.0000	20.3	
39	Propionitrile	54	5.954	5.954	(0.981)	138827	200.000	203	
40	Methacrylonitrile	41	5.982	5.983	(0.986)	586458	200.000	199	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4705.D
Report Date: 04-Apr-2018 05:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	187782	20.0000	20.4	
	24 Acrylonitrile	52	3.909	3.909	(0.644)	157379	100.000	99.5	
	25 Ethyl tertiary-butyl ether	59	4.145	4.138	(0.683)	279179	20.0000	19.2	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	191706	20.0000	18.9	
	27 cis-1,2-Dichloroethene	96	4.552	4.553	(0.750)	106591	20.0000	19.6	
	52 Methyl Methacrylate	41	7.942	7.935	(1.159)	65660	20.0000	16.9	
	28 2,2-Dichloropropane	77	4.710	4.703	(0.776)	141482	20.0000	19.2	
	29 Bromochloromethane	128	4.853	4.853	(0.800)	49818	20.0000	19.8	
	31 Chloroform	83	4.989	4.982	(0.822)	184176	20.0000	20.2	
	32 Carbon Tetrachloride	117	5.174	5.168	(0.755)	108193	20.0000	19.1	
	33 Tetrahydrofuran	42	5.239	5.232	(0.863)	125969	100.000	92.0	
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	250765	50.0000	49.9	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	155961	20.0000	19.6	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	142384	20.0000	19.1	
	36 2-Butanone	43	5.503	5.496	(0.907)	205683	100.000	92.0	
	38 Benzene	78	5.875	5.875	(0.857)	417764	20.0000	20.3	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	510066	50.0000		
	30 Cyclohexane	56	4.831	4.824	(0.796)	147843	20.0000	18.8	
	53 Ethyl Methacrylate	69	9.743	9.744	(1.421)	108169	20.0000	16.5	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	347052	50.0000	50.0	
	43 Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	264350	20.0000	19.2	
	44 1,2-Dichloroethane	62	6.204	6.204	(0.905)	146503	20.0000	19.9	
	47 Trichloroethene	95	6.776	6.776	(0.989)	112957	20.0000	19.5	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	791108	50.0000		
	49 Dibromomethane	93	7.384	7.384	(1.077)	61173	20.0000	18.8	
	50 1,2-Dichloropropane	63	7.534	7.534	(1.099)	97432	20.0000	19.4	
	51 Bromodichloromethane	83	7.648	7.649	(1.116)	125603	20.0000	19.1	
	57 cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	162997	20.0000	18.4	
	54 1,4-Dioxane	88	7.963	7.956	(1.162)	16115	400.000	304	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	925213	50.0000	49.4	
	59 Toluene	92	8.864	8.864	(1.293)	242107	20.0000	19.4	
	61 4-methyl-2-pentanone	43	9.436	9.436	(1.377)	388010	100.000	91.5	
	60 Tetrachloroethene	164	9.372	9.372	(0.861)	68802	20.0000	19.7	
	62 trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	141618	20.0000	18.6	
	63 1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	74567	20.0000	19.5	
	64 Dibromochloromethane	129	9.901	9.894	(0.909)	78340	20.0000	18.1	
	65 1,3-Dichloropropane	76	10.029	10.030	(0.921)	165257	20.0000	19.1	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	79377	20.0000	18.2	
	67 2-Hexanone	43	10.580	10.580	(0.972)	252046	100.000	88.7	
*	68 Chlorobenzene-D5	117	10.887	10.888	(1.000)	637853	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	241724	20.0000	20.0	
	70 1-Chlorohexane	91	10.930	10.931	(1.004)	118982	20.0000	19.2	
	71 Ethylbenzene	106	10.973	10.974	(1.008)	131458	20.0000	19.5	
	72 1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	76410	20.0000	19.5	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	305647	40.0000	39.2	
	74 o-Xylene	106	11.746	11.739	(1.079)	129931	20.0000	18.0	
	75 Styrene	104	11.817	11.817	(1.085)	217751	20.0000	18.4	
	76 Bromoform	173	11.817	11.817	(1.085)	44978	20.0000	17.2	
	77 Isopropylbenzene	105	12.167	12.168	(0.871)	332496	20.0000	19.2	
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	300496	50.0000	48.5	
	79 cis-1,4-Dichloro-2-Butene	53	12.639	12.632	(0.905)	24718	20.0000	18.3	
	86 trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	17720	20.0000	18.2	
	80 Bromobenzene	156	12.625	12.625	(0.904)	84461	20.0000	20.0	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	448417	20.0000	20.3	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4705.D
Report Date: 04-Apr-2018 05:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	92180	20.0000	19.2	
85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.929)	274662	20.0000	19.3	
83	2-Chlorotoluene	91	12.882	12.883	(0.922)	260417	20.0000	20.1	
84	1,2,3-Trichloropropane	75	12.968	12.976	(0.928)	88130	20.0000	19.7	
87	4-Chlorotoluene	91	13.104	13.104	(0.938)	273062	20.0000	19.7	
88	tert-Butylbenzene	119	13.390	13.383	(0.959)	239055	20.0000	19.3	
89	Pentachloroethane	165	13.397	13.397	(0.959)	30902	20.0000	19.2	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	281781	20.0000	19.4	
92	P-Isopropyltoluene	119	13.390	13.383	(0.959)	239055	20.0000	19.3	
93	1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	146820	20.0000	20.1	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	271903	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	149712	20.0000	20.0	
97	N-Butylbenzene	91	14.363	14.363	(1.028)	247662	20.0000	18.1	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	341036	20.0000	19.4	
99	1,2-Dichlorobenzene	146	14.527	14.527	(1.040)	135975	20.0000	19.5	
100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.115)	14604	20.0000	17.6	
101	1,3,5-Trichlorobenzene	180	15.621	15.621	(1.118)	100316	20.0000	19.1	
102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	41352	20.0000	19.5	
103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	81124	20.0000	18.0	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	305043	20.0000	20.1	
104	Naphthalene	128	16.887	16.887	(1.209)	148790	20.0000	15.2	
105	1,2,3-Trichlorobenzene	180	17.122	17.123	(1.226)	70383	20.0000	18.0	
17	Methyl Acetate	43	3.165	3.158	(0.522)	84988	20.0000	19.0	
46	Methylcyclohexane	83	6.740	6.733	(1.111)	158763	20.0000	19.2	



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Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4706.D
Report Date: 04-Apr-2018 05:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032418.b\T4706.D
Lab Smp Id: WG225352-2
Inj Date : 24-MAR-2018 13:49
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225352-2
Misc Info :
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Meth Date : 26-Mar-2018 21:31 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 13:49   Cal File: T4706.D
Als bottle: 4   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	24315	5.00000	5.2	
2	Chloromethane	50	1.549	1.549	(0.255)	40981	5.00000	5.5	
3	Vinyl chloride	62	1.614	1.614	(0.266)	17430	5.00000	4.5	
4	Bromomethane	94	1.850	1.850	(0.305)	8312	5.00000	5.4	
5	Chloroethane	64	1.950	1.943	(0.321)	8832	5.00000	5.0	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	29414	5.00000	5.2	
7	Diethyl Ether	59	2.293	2.293	(0.378)	13076	5.00000	4.9	
19	Tertiary-butyl alcohol	59	3.373	3.373	(0.556)	8717	25.0000	23.6	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	14102	5.00000	5.0	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	39241	5.00000	4.7	
9	Freon-113	151	2.493	2.486	(0.411)	13754	5.00000	5.7	
11	Iodomethane	142	2.600	2.593	(0.429)	5159	5.00000	6.9	
12	Acrolein	56	2.765	2.765	(0.456)	23866	25.0000	25.8	
14	Methylene Chloride	84	2.986	2.987	(0.492)	24004	5.00000	4.5(a)	
15	Acetone	43	3.044	3.044	(0.502)	35098	25.0000	26.8	
45	Isobutyl Alcohol	43	6.361	6.347	(1.048)	12337	100.000	109	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	23104	5.00000	4.5	
13	Allyl Chloride	41	2.886	2.887	(0.476)	33999	5.00000	4.9	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	60949	5.00000	4.2	
20	Acetonitrile	41	3.537	3.537	(0.583)	30944	50.0000	55.1	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	62089	5.00000	4.4	
22	Chloroprene	53	3.802	3.802	(0.627)	30072	5.00000	4.2	
39	Propionitrile	54	5.961	5.954	(0.982)	34714	50.0000	52.1	
40	Methacrylonitrile	41	5.982	5.983	(0.986)	142431	50.0000	50.1	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4706.D
Report Date: 04-Apr-2018 05:28

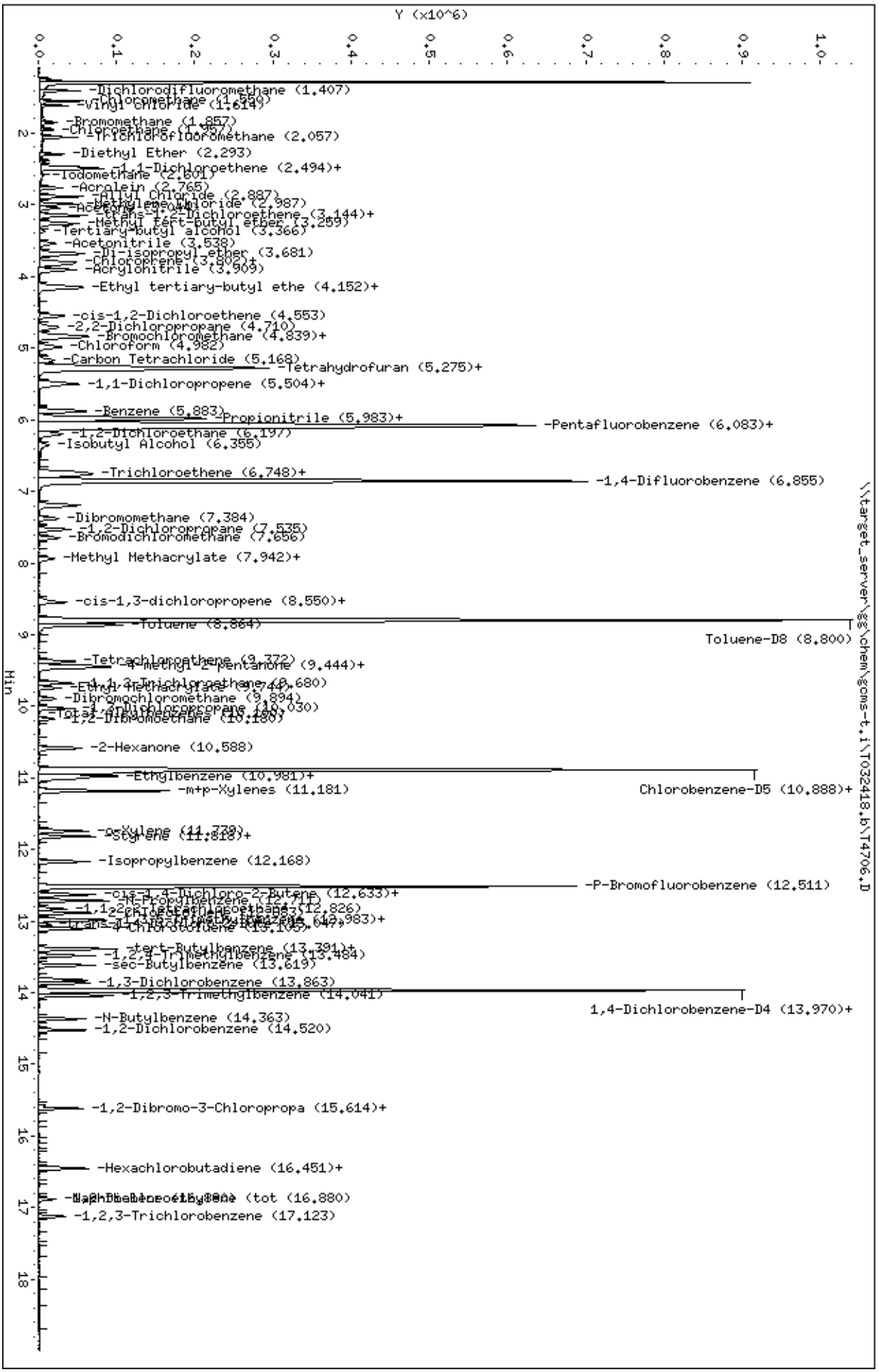
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	41587	5.00000	4.6	
	24 Acrylonitrile	52	3.909	3.909	(0.644)	37153	25.0000	24.4	
	25 Ethyl tertiary-butyl ether	59	4.145	4.138	(0.683)	60214	5.00000	4.6	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	37545	5.00000	4.2	
	27 cis-1,2-Dichloroethene	96	4.552	4.553	(0.750)	22212	5.00000	4.3	
	52 Methyl Methacrylate	41	7.934	7.935	(1.157)	13044	5.00000	4.8	
	28 2,2-Dichloropropane	77	4.703	4.703	(0.775)	29580	5.00000	4.2	
	29 Bromochloromethane	128	4.853	4.853	(0.800)	10474	5.00000	4.3	
	31 Chloroform	83	4.989	4.982	(0.822)	38736	5.00000	4.4	
	32 Carbon Tetrachloride	117	5.174	5.168	(0.755)	21544	5.00000	4.3	
	33 Tetrahydrofuran	42	5.246	5.232	(0.865)	23401	25.0000	20.9	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	250976	50.0000	51.7	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	32864	5.00000	4.3	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	29026	5.00000	4.1	
	36 2-Butanone	43	5.511	5.496	(0.908)	41898	25.0000	20.2	
	38 Benzene	78	5.875	5.875	(0.857)	84250	5.00000	4.2	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	493074	50.0000		
	30 Cyclohexane	56	4.831	4.824	(0.796)	30157	5.00000	4.4	
	53 Ethyl Methacrylate	69	9.743	9.744	(1.421)	18162	5.00000	4.3	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	337697	50.0000	50.3	
	43 Tertiary-amyl methyl ether	73	6.111	6.104	(1.007)	60200	5.00000	4.6	
	44 1,2-Dichloroethane	62	6.211	6.204	(0.906)	33338	5.00000	4.7	
	47 Trichloroethene	95	6.769	6.776	(0.987)	24298	5.00000	4.4	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	764820	50.0000		
	49 Dibromomethane	93	7.377	7.384	(1.076)	13719	5.00000	4.5	
	50 1,2-Dichloropropane	63	7.541	7.534	(1.100)	19749	5.00000	4.1	
	51 Bromodichloromethane	83	7.648	7.649	(1.116)	26282	5.00000	4.2	
	57 cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	28043	5.00000	3.9	
	54 1,4-Dioxane	88	7.977	7.956	(1.164)	4050	100.000	89.8	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	882918	50.0000	49.0	
	59 Toluene	92	8.864	8.864	(1.293)	51257	5.00000	4.3	
	61 4-methyl-2-pentanone	43	9.443	9.436	(1.378)	70857	25.0000	20.7	
	60 Tetrachloroethene	164	9.372	9.372	(0.861)	14478	5.00000	4.4	
	62 trans-1,3-Dichloropropene	75	9.472	9.472	(1.382)	25957	5.00000	4.1	
	63 1,1,2-Trichloroethane	83	9.679	9.672	(1.412)	16036	5.00000	4.4	
	64 Dibromochloromethane	129	9.894	9.894	(0.909)	14964	5.00000	3.8	
	65 1,3-Dichloropropane	76	10.029	10.030	(0.921)	33869	5.00000	4.2	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	16084	5.00000	4.0(T)	
	67 2-Hexanone	43	10.587	10.580	(0.972)	41083	25.0000	19.9	
*	68 Chlorobenzene-D5	117	10.887	10.888	(1.000)	602153	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	51869	5.00000	4.5	
	70 1-Chlorohexane	91	10.930	10.931	(1.004)	23475	5.00000	4.3	
	71 Ethylbenzene	106	10.973	10.974	(1.008)	25051	5.00000	4.0	
	72 1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	14108	5.00000	3.8	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	55469	10.0000	7.6	
	74 o-Xylene	106	11.738	11.739	(1.078)	21595	5.00000	4.0	
	75 Styrene	104	11.817	11.817	(1.085)	33569	5.00000	3.6	
	76 Bromoform	173	11.824	11.817	(1.086)	8987	5.00000	4.8	
	77 Isopropylbenzene	105	12.167	12.168	(0.871)	53377	5.00000	3.5	
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	283264	50.0000	48.0	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	5698	5.00000	5.1	
	86 trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	3658	5.00000	4.1	
	80 Bromobenzene	156	12.625	12.625	(0.904)	16786	5.00000	4.1	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	80411	5.00000	3.8	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4706.D
Report Date: 04-Apr-2018 05:28

		QUANT SIG					AMOUNTS		
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	82 1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	20155	5.00000	4.5	
	85 1,3,5-Trimethylbenzene	105	12.990	12.990	(0.930)	43696	5.00000	3.5	
	83 2-Chlorotoluene	91	12.882	12.883	(0.922)	48247	5.00000	3.9	
	84 1,2,3-Trichloropropane	75	12.975	12.976	(0.929)	18990	5.00000	4.4	
	87 4-Chlorotoluene	91	13.104	13.104	(0.938)	52831	5.00000	4.0	
	88 tert-Butylbenzene	119	13.390	13.383	(0.959)	41052	5.00000	3.7	
	89 Pentachloroethane	165	13.397	13.397	(0.959)	6644	5.00000	4.4	
	90 1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	45405	5.00000	3.5	
	92 P-Isopropyltoluene	119	13.390	13.383	(0.959)	41052	5.00000	3.7	
	93 1,3-Dichlorobenzene	146	13.869	13.862	(0.993)	28960	5.00000	4.1	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	261291	50.0000		
	95 1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	32329	5.00000	4.5	
	97 N-Butylbenzene	91	14.363	14.363	(1.028)	39180	5.00000	3.7	
	91 sec-Butylbenzene	105	13.619	13.619	(0.975)	59018	5.00000	3.7	
	99 1,2-Dichlorobenzene	146	14.520	14.527	(1.039)	28165	5.00000	4.2	
	100 1,2-Dibromo-3-Chloropropane	75	15.571	15.578	(1.115)	3374	5.00000	4.5	
	101 1,3,5-Trichlorobenzene	180	15.621	15.621	(1.118)	19170	5.00000	4.2	
	102 Hexachlorobutadiene	225	16.443	16.443	(1.177)	8247	5.00000	4.1	
	103 1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	13795	5.00000	4.0	
	96 1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	61295	5.00000	4.2	
	104 Naphthalene	128	16.879	16.887	(1.208)	19520	5.00000	4.1	
	105 1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	12681	5.00000	4.2	
	17 Methyl Acetate	43	3.165	3.158	(0.522)	22361	5.00000	5.3	
	46 Methylcyclohexane	83	6.733	6.733	(1.110)	35939	5.00000	4.6	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4706.D
Date : 24-MAR-2018 13:49
Client ID:
Sample Info: WG225352-2
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.560)
-Vinyl Chloride (1.614)
-Bromomethane (1.857)
-Chloroethane (1.967)
-Trichlorofluoromethane (2.057)
-Diethyl Ether (2.293)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.601)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)+
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.800)+
-Acrylonitrile (3.909)
-Ethyl tertiary-butyl ethe (4.152)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.710)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.168)
-Tetrahydrofuran (5.275)+
-1,1-Dichloropropene (5.504)+
-Benzene (5.883)
-Propionitrile (5.983)+
-Pentafluorobenzene (6.083)+
-1,2-Dichloroethane (6.197)
-Isobutyl Alcohol (6.355)
-Trichloroethene (6.748)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.384)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.656)
-Methyl Methacrylate (7.942)+
-cis-1,3-dichloropropene (8.550)+
-Toluene (8.864)
Toluene-D8 (8.800)
-Tetrachloroethene (9.372)
-4-Methyl-2-pentanone (9.444)+
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,2-Dichloropropene (10.030)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.588)
-Ethylbenzene (10.981)+
-m+p-Xylenes (11.181)
Chlorobenzene-D5 (10.888)+
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.633)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-trans-1,4-Dichloro-2-Butene (12.983)+
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.291)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.619)
-1,3-Dichlorobenzene (13.863)
-1,2,3-Trimethylbenzene (14.041)
1,4-Dichlorobenzene-D4 (13.970)+
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.451)+
-1,2,3-Trichlorobenzene (17.123)
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Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4707.D
Report Date: 04-Apr-2018 05:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032418.b\T4707.D
Lab Smp Id: WG225352-1
Inj Date : 24-MAR-2018 14:26
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225352-1
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032418.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 14:26   Cal File: T4707.D
Als bottle: 5   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	3645	1.00000	0.84(a)	
2	Chloromethane	50	1.549	1.549	(0.255)	12276	1.00000	1.0	
3	Vinyl chloride	62	1.614	1.614	(0.266)	2999	1.00000	0.87(a)	
4	Bromomethane	94	1.857	1.850	(0.306)	2363	1.00000	0.63(a)	
5	Chloroethane	64	1.957	1.943	(0.323)	1599	1.00000	0.98(a)	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	5932	1.00000	1.1	
7	Diethyl Ether	59	2.293	2.293	(0.378)	2130	1.00000	0.88(a)	
19	Tertiary-butyl alcohol	59	3.380	3.373	(0.557)	1464	5.00000	4.4(a)	
8	1,1-Dichloroethene	96	2.458	2.465	(0.405)	2742	1.00000	1.0	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	8617	1.00000	1.1	
9	Freon-113	151	2.493	2.486	(0.411)	2171	1.00000	0.93(a)	
11	Iodomethane	142	2.593	2.593	(0.427)	993	1.00000	0.75(a)	
12	Acrolein	56	2.765	2.765	(0.456)	4453	5.00000	5.2	
14	Methylene Chloride	84	2.987	2.987	(0.492)	6841	1.00000	1.5(a)	
15	Acetone	43	3.044	3.044	(0.502)	8493	5.00000	7.4	
45	Isobutyl Alcohol	43	6.362	6.347	(1.048)	1084	20.0000	33.2	
16	trans-1,2-Dichloroethene	96	3.151	3.144	(0.519)	5288	1.00000	1.2	
13	Allyl Chloride	41	2.887	2.887	(0.476)	5451	1.00000	0.86(a)	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	12863	1.00000	1.0	
20	Acetonitrile	41	3.544	3.537	(0.584)	5184	10.0000	9.7(a)	
21	Di-isopropyl ether	45	3.687	3.680	(0.608)	10470	1.00000	0.84(a)	
22	Chloroprene	53	3.802	3.802	(0.627)	4954	1.00000	0.80(a)	
39	Propionitrile	54	5.954	5.954	(0.981)	5314	10.0000	8.5(a)	
40	Methacrylonitrile	41	5.983	5.983	(0.986)	19565	10.0000	7.5(a)	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4707.D
Report Date: 04-Apr-2018 05:28

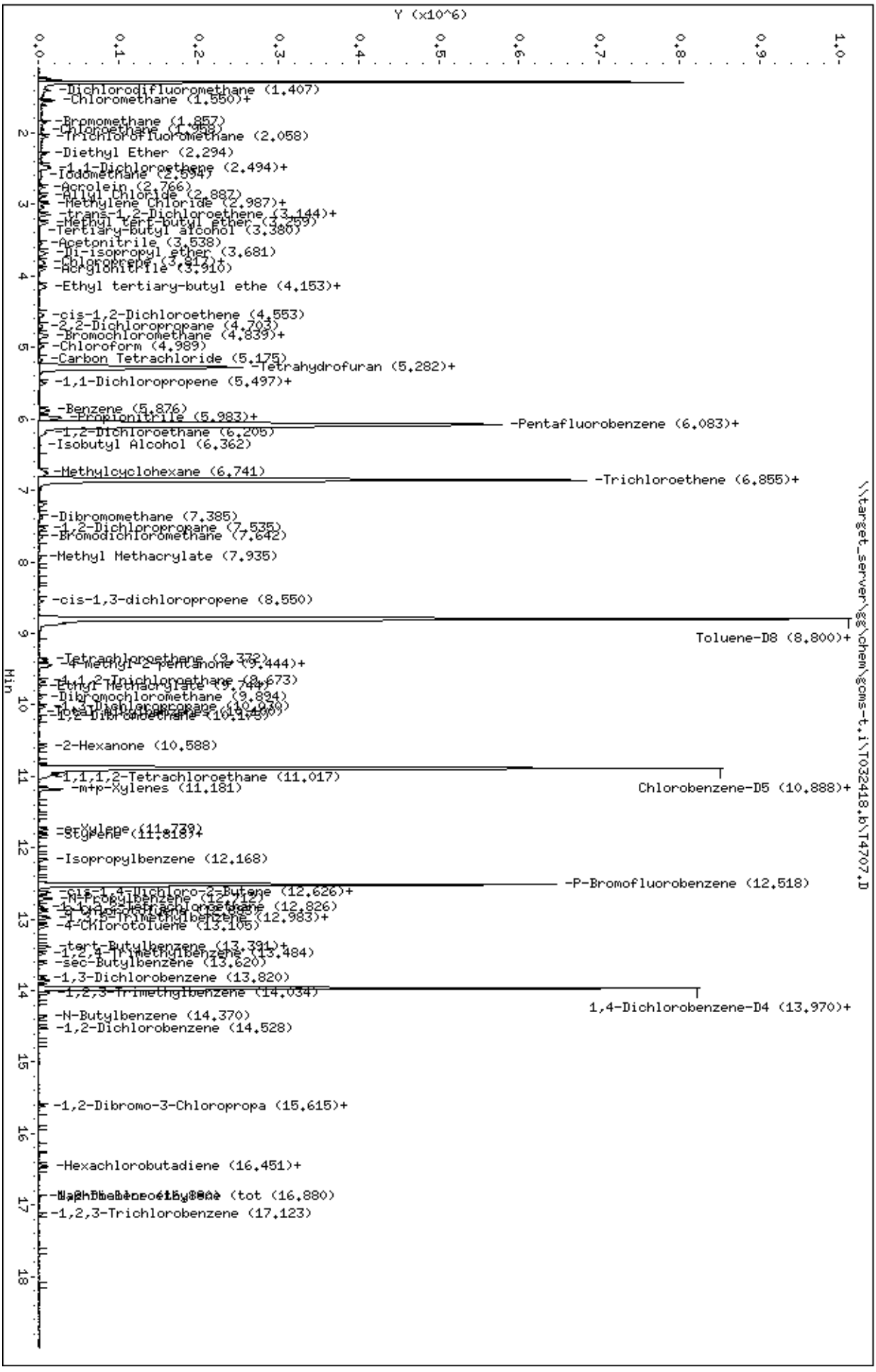
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	8288	1.00000	1.0	
	24 Acrylonitrile	52	3.909	3.909	(0.644)	5870	5.00000	4.2(a)	
	25 Ethyl tertiary-butyl ether	59	4.145	4.138	(0.683)	8319	1.00000	1.1	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	6237	1.00000	1.4	
	27 cis-1,2-Dichloroethene	96	4.553	4.553	(0.750)	4252	1.00000	0.93(a)	
	52 Methyl Methacrylate	41	7.949	7.935	(1.160)	1703	1.00000	1.9(T)	
	28 2,2-Dichloropropane	77	4.703	4.703	(0.775)	6219	1.00000	1.0	
	29 Bromochloromethane	128	4.846	4.853	(0.799)	2422	1.00000	1.1	
	31 Chloroform	83	4.989	4.982	(0.822)	8912	1.00000	1.1	
	32 Carbon Tetrachloride	117	5.175	5.168	(0.755)	3533	1.00000	1.3	
	33 Tetrahydrofuran	42	5.260	5.232	(0.867)	3993	5.00000	8.2	
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	237336	50.0000	52.5	
	35 1,1,1-Trichloroethane	97	5.296	5.289	(0.873)	6806	1.00000	1.0	
	37 1,1-Dichloropropene	75	5.496	5.489	(0.802)	6105	1.00000	0.97(a)	
	36 2-Butanone	43	5.511	5.496	(0.908)	7800	5.00000	4.4(a)	
	38 Benzene	78	5.883	5.875	(0.858)	17996	1.00000	1.00	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	453936	50.0000		
	30 Cyclohexane	56	4.839	4.824	(0.797)	4516	1.00000	1.4	
	53 Ethyl Methacrylate	69	9.744	9.744	(1.421)	2234	1.00000	2.1	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	327293	50.0000	52.9	
	43 Tertiary-amyl methyl ether	73	6.111	6.104	(1.007)	9960	1.00000	0.85(a)	
	44 1,2-Dichloroethane	62	6.204	6.204	(0.905)	7621	1.00000	1.2	
	47 Trichloroethene	95	6.769	6.776	(0.987)	5089	1.00000	1.0	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	726170	50.0000		
	49 Dibromomethane	93	7.384	7.384	(1.077)	3157	1.00000	1.1	
	50 1,2-Dichloropropane	63	7.527	7.534	(1.098)	4232	1.00000	0.99(Ta)	
	51 Bromodichloromethane	83	7.656	7.649	(1.117)	5409	1.00000	0.96(Ta)	
	57 cis-1,3-dichloropropene	75	8.542	8.550	(1.246)	5116	1.00000	1.7	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	838910	50.0000	49.4	
	59 Toluene	92	8.864	8.864	(1.293)	11268	1.00000	1.0	
	61 4-methyl-2-pentanone	43	9.443	9.436	(1.378)	12249	5.00000	8.4	
	60 Tetrachloroethene	164	9.379	9.372	(0.861)	3199	1.00000	1.1	
	62 trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	5159	1.00000	1.7	
	63 1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	2814	1.00000	0.85(a)	
	64 Dibromochloromethane	129	9.901	9.894	(0.909)	3000	1.00000	0.90(a)	
	65 1,3-Dichloropropane	76	10.023	10.030	(0.921)	6498	1.00000	0.92(a)	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	3367	1.00000	0.94(Ta)	
	67 2-Hexanone	43	10.587	10.580	(0.972)	6157	5.00000	9.2	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	560476	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	10873	1.00000	1.0	
	70 1-Chlorohexane	91	10.931	10.931	(1.004)	3487	1.00000	1.2	
	71 Ethylbenzene	106	10.974	10.974	(1.008)	4963	1.00000	0.91(a)	
	72 1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	3207	1.00000	1.0	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	9771	2.00000	1.6(a)	
	74 o-Xylene	106	11.739	11.739	(1.078)	3964	1.00000	1.9	
	75 Styrene	104	11.817	11.817	(1.085)	5876	1.00000	1.8	
	76 Bromoform	173	11.824	11.817	(1.086)	1734	1.00000	2.0	
	77 Isopropylbenzene	105	12.168	12.168	(0.871)	9063	1.00000	1.5	
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	261427	50.0000	47.3	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	749	1.00000	1.3	
	86 trans-1,4-Dichloro-2-Butene	53	12.632	13.047	(0.904)	749	1.00000	1.0	
	80 Bromobenzene	156	12.632	12.625	(0.904)	3972	1.00000	1.2	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	16348	1.00000	0.94(a)	
	82 1,1,2,2-Tetrachloroethane	83	12.833	12.825	(0.919)	4954	1.00000	1.3(T)	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4707.D
Report Date: 04-Apr-2018 05:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
85	1,3,5-Trimethylbenzene	105	12.990	12.990	(0.930)	7641	1.00000	1.5	
83	2-Chlorotoluene	91	12.883	12.883	(0.922)	9769	1.00000	0.95(a)	
84	1,2,3-Trichloropropane	75	12.976	12.976	(0.929)	3668	1.00000	1.0	
87	4-Chlorotoluene	91	13.104	13.104	(0.938)	9621	1.00000	0.88(a)	
88	tert-Butylbenzene	119	13.383	13.383	(0.958)	6764	1.00000	1.4	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	6898	1.00000	1.4	
92	P-Isopropyltoluene	119	13.383	13.383	(0.958)	6764	1.00000	1.4	
93	1,3-Dichlorobenzene	146	13.869	13.862	(0.993)	6107	1.00000	1.0	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	232078	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	7303	1.00000	1.2	
97	N-Butylbenzene	91	14.370	14.363	(1.029)	7549	1.00000	1.9	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	8949	1.00000	1.4	
99	1,2-Dichlorobenzene	146	14.527	14.527	(1.040)	5114	1.00000	0.92(a)	
100	1,2-Dibromo-3-Chloropropane	75	15.571	15.578	(1.115)	724	1.00000	1.1	
101	1,3,5-Trichlorobenzene	180	15.607	15.621	(1.117)	3039	1.00000	1.4	
102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	1561	1.00000	0.93(a)	
103	1,2,4-Trichlorobenzene	180	16.465	16.458	(1.179)	2777	1.00000	2.0	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	9291	1.00000	0.76(a)	
104	Naphthalene	128	16.880	16.887	(1.208)	3151	1.00000	2.8	
105	1,2,3-Trichlorobenzene	180	17.130	17.123	(1.226)	2148	1.00000	1.8	
17	Methyl Acetate	43	3.165	3.158	(0.522)	3557	1.00000	0.90(a)	
46	Methylcyclohexane	83	6.741	6.733	(1.111)	5093	1.00000	0.72(a)	

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)+
-Bromomethane (1.857)
-Chloroethane (1.988)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.766)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)+
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.380)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.814)+
-Acrylonitrile (3.910)
-Ethyl tertiary-butyl ethe (4.153)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.989)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Propionitrile (5.983)+
-Pentafluorobenzene (6.083)+
-1,2-Dichloroethane (6.205)
-Isobutyl Alcohol (6.362)
-Methylcyclohexane (6.741)
-Trichloroethene (6.855)+
-Dibromomethane (7.385)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.642)
-Methyl Methacrylate (7.935)
-cis-1,3-dichloropropene (8.550)
Toluene-D8 (8.800)+
-Tetrachloroethene (9.372)
-4-Methyl-2-pentanone (9.444)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.020)
-1,2-Dibromoethane (10.170)
-2-Hexanone (10.588)
-1,1,1,2-Tetrachloroethane (11.017)
-m+p-Xylenes (11.181)
Chlorobenzene-D5 (10.888)+
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-cis-1,4-Dichloro-2-Butene (12.626)+
-P-Bromofluorobenzene (12.518)
-N-Propylbenzene (12.712)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.983)+
-1,3,5-Trimethylbenzene (13.105)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.820)
-1,2,3-Trimethylbenzene (14.034)
1,4-Dichlorobenzene-D4 (13.970)+
-N-Butylbenzene (14.370)
-1,2-Dichlorobenzene (14.528)
-1,2-Dibromo-3-Chloropropa (15.615)+
-Hexachlorobutadiene (16.451)+
-Naphthalene (tot (16.880)
-1,2,3-Trichlorobenzene (17.123)
Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4707.D
Date : 24-MAR-2018 14:26
Client ID:
Sample Info: WG225352-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
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Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4708.D
Report Date: 04-Apr-2018 05:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032418.b\T4708.D
Lab Smp Id: WG225352-6
Inj Date : 24-MAR-2018 15:02
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225352-6
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032418.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:02   Cal File: T4708.D
Als bottle: 6   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	641414	150.000	141	
2	Chloromethane	50	1.549	1.549	(0.255)	840971	150.000	128	
3	Vinyl chloride	62	1.614	1.614	(0.266)	559775	150.000	154	
4	Bromomethane	94	1.850	1.850	(0.305)	190748	150.000	150	
5	Chloroethane	64	1.943	1.943	(0.320)	232240	150.000	130	
6	Trichlorofluoromethane	101	2.050	2.050	(0.338)	719568	150.000	120	
7	Diethyl Ether	59	2.293	2.293	(0.378)	371695	150.000	144	
19	Tertiary-butyl alcohol	59	3.365	3.373	(0.555)	258869	750.000	731	
8	1,1-Dichloroethene	96	2.464	2.465	(0.406)	383375	150.000	133	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	1158019	150.000	135	
9	Freon-113	151	2.486	2.486	(0.410)	315082	150.000	126	
11	Iodomethane	142	2.600	2.593	(0.429)	233131	150.000	23.3	
12	Acrolein	56	2.765	2.765	(0.456)	642751	750.000	677	
14	Methylene Chloride	84	2.986	2.987	(0.492)	768285	150.000	147	
15	Acetone	43	3.044	3.044	(0.502)	882176	750.000	636	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	453116	3000.00	2960	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	750469	150.000	144	
13	Allyl Chloride	41	2.886	2.887	(0.476)	978581	150.000	147	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	2210699	150.000	159	
20	Acetonitrile	41	3.537	3.537	(0.583)	770083	1500.00	1330	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	2079095	150.000	159	
22	Chloroprene	53	3.794	3.802	(0.625)	1060561	150.000	164	
39	Propionitrile	54	5.961	5.954	(0.982)	898502	1500.00	1370	
40	Methacrylonitrile	41	5.990	5.983	(0.987)	3741782	1500.00	1390	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4708.D
Report Date: 04-Apr-2018 05:28

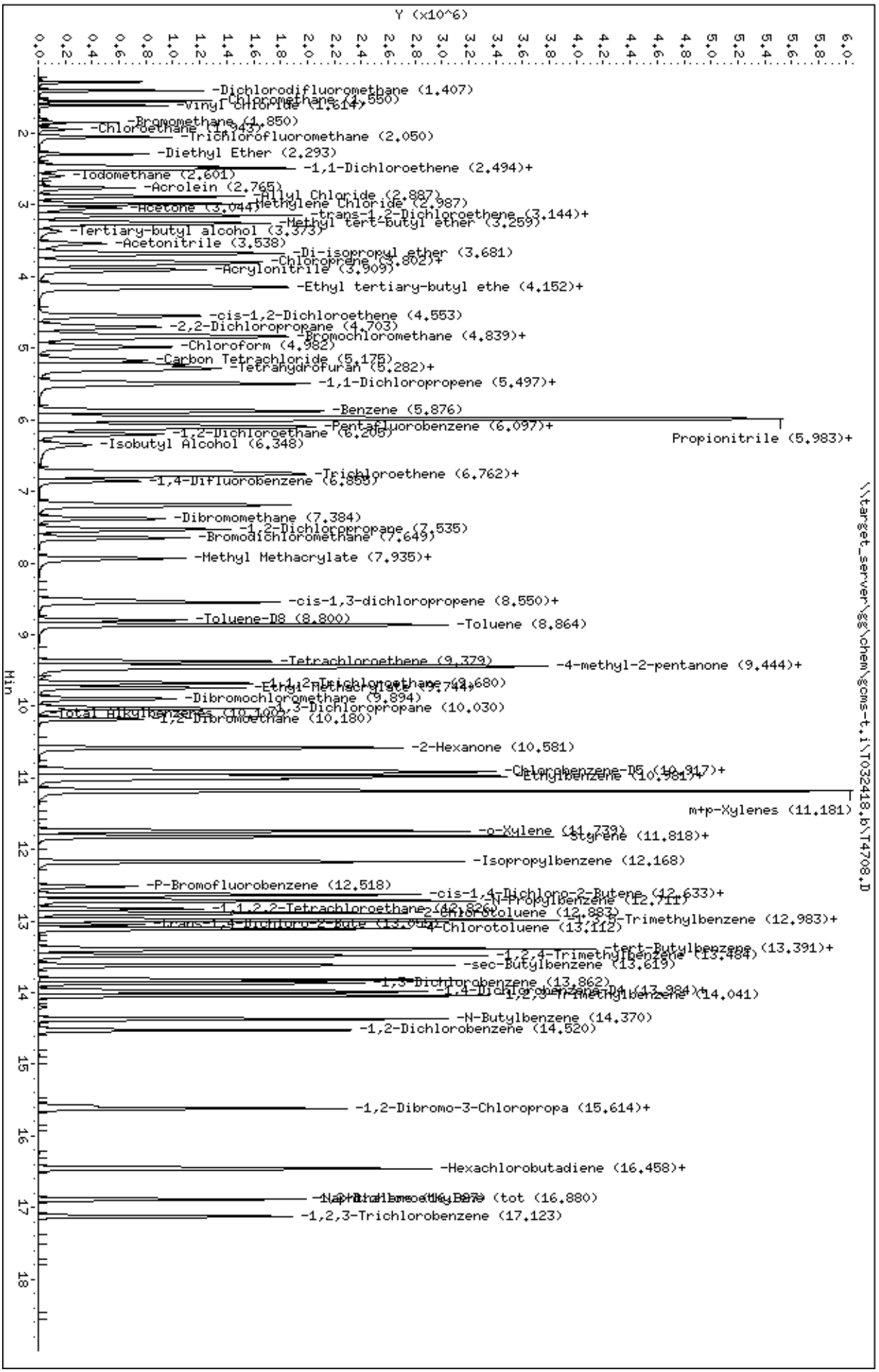
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	1303286	150.000	147	
	24 Acrylonitrile	52	3.909	3.909	(0.644)	1097732	750.000	750	
	25 Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	2118721	150.000	149	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	1470287	150.000	144	
	27 cis-1,2-Dichloroethene	96	4.552	4.553	(0.750)	798088	150.000	163	
	52 Methyl Methacrylate	41	7.934	7.935	(1.158)	617320	150.000	158(T)	
	28 2,2-Dichloropropane	77	4.703	4.703	(0.775)	1033398	150.000	154	
	29 Bromochloromethane	128	4.853	4.853	(0.800)	324511	150.000	135	
	31 Chloroform	83	4.981	4.982	(0.821)	1343731	150.000	152	
	32 Carbon Tetrachloride	117	5.174	5.168	(0.755)	907224	150.000	159	
	33 Tetrahydrofuran	42	5.232	5.232	(0.862)	989088	750.000	740	
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	251999	50.0000	50.3	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	1163240	150.000	158	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	1068808	150.000	156	
	36 2-Butanone	43	5.503	5.496	(0.907)	1532978	750.000	810	
	38 Benzene	78	5.875	5.875	(0.857)	2944553	150.000	150	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	496667	50.0000		
	30 Cyclohexane	56	4.824	4.824	(0.795)	1134353	150.000	148	
	53 Ethyl Methacrylate	69	9.743	9.744	(1.421)	1018201	150.000	154	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	340249	50.0000	49.5	
	43 Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	2022337	150.000	164	
	44 1,2-Dichloroethane	62	6.204	6.204	(0.905)	1076656	150.000	144	
	47 Trichloroethene	95	6.776	6.776	(0.989)	782112	150.000	142	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	793376	50.0000		
	49 Dibromomethane	93	7.384	7.384	(1.077)	496124	150.000	157	
	50 1,2-Dichloropropane	63	7.534	7.534	(1.099)	759809	150.000	163(T)	
	51 Bromodichloromethane	83	7.648	7.649	(1.116)	1011262	150.000	167(T)	
	57 cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	1346708	150.000	151	
	54 1,4-Dioxane	88	7.956	7.956	(1.161)	127255	3000.00	2820	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	939832	50.0000	50.8	
	59 Toluene	92	8.864	8.864	(1.293)	1758810	150.000	148	
	61 4-methyl-2-pentanone	43	9.436	9.436	(1.377)	2868531	750.000	673	
	60 Tetrachloroethene	164	9.379	9.372	(0.861)	505595	150.000	152	
	62 trans-1,3-Dichloropropene	75	9.472	9.472	(1.382)	1152437	150.000	150	
	63 1,1,2-Trichloroethane	83	9.679	9.672	(1.412)	565004	150.000	162	
	64 Dibromochloromethane	129	9.894	9.894	(0.909)	662977	150.000	184	
	65 1,3-Dichloropropane	76	10.029	10.030	(0.921)	1267210	150.000	165	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	658518	150.000	171(T)	
	67 2-Hexanone	43	10.580	10.580	(0.972)	1974863	750.000	711	
*	68 Chlorobenzene-D5	117	10.887	10.888	(1.000)	621366	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	1691951	150.000	146	
	70 1-Chlorohexane	91	10.930	10.931	(1.004)	1020979	150.000	168	
	71 Ethylbenzene	106	10.980	10.974	(1.009)	960420	150.000	162	
	72 1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	601590	150.000	172	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	2121380	300.000	324	
	74 o-Xylene	106	11.738	11.739	(1.078)	1075260	150.000	152	
	75 Styrene	104	11.817	11.817	(1.085)	1720157	150.000	148	
	76 Bromoform	173	11.824	11.817	(1.086)	410926	150.000	161	
	77 Isopropylbenzene	105	12.167	12.168	(0.871)	2497828	150.000	141	
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	311230	50.0000	52.2	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	219872	150.000	160	
	86 trans-1,4-Dichloro-2-Butene	53	13.054	13.047	(0.934)	170273	150.000	191	
	80 Bromobenzene	156	12.625	12.625	(0.904)	636187	150.000	150	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	3068178	150.000	150	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4708.D
Report Date: 04-Apr-2018 05:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	728425	150.000	148(T)	
85	1,3,5-Trimethylbenzene	105	12.990	12.990	(0.930)	2066242	150.000	142	
83	2-Chlorotoluene	91	12.882	12.883	(0.922)	1902013	150.000	157	
84	1,2,3-Trichloropropane	75	12.975	12.976	(0.929)	660674	150.000	152	
87	4-Chlorotoluene	91	13.104	13.104	(0.938)	1996935	150.000	158	
88	tert-Butylbenzene	119	13.390	13.383	(0.959)	1837446	150.000	145	
89	Pentachloroethane	165	13.397	13.397	(0.959)	271874	150.000	185	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	2134334	150.000	143	
92	P-Isopropyltoluene	119	13.390	13.383	(0.959)	1837446	150.000	145	
93	1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	1079007	150.000	152	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	276831	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	1084773	150.000	141	
97	N-Butylbenzene	91	14.363	14.363	(1.028)	2001992	150.000	143	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	2513019	150.000	140	
99	1,2-Dichlorobenzene	146	14.527	14.527	(1.040)	1038494	150.000	159	
100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.115)	155922	150.000	197	
101	1,3,5-Trichlorobenzene	180	15.621	15.621	(1.118)	809194	150.000	151	
102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	325236	150.000	165	
103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	709306	150.000	154	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	2201999	150.000	160	
104	Naphthalene	128	16.887	16.887	(1.209)	1632220	150.000	163	
105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	639589	150.000	160	
17	Methyl Acetate	43	3.165	3.158	(0.522)	633808	150.000	150	
46	Methylcyclohexane	83	6.733	6.733	(1.110)	1193544	150.000	167	

QC Flag Legend

T - Target compound detected outside RT window.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Client ID:
Sample Info: WG225352-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-t.i\T032418.b\T4708.D
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl Chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.943)
-Trichlorofluoromethane (2.050)
-Diethyl Ether (2.293)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.601)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.373)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.909)
-Ethyl tertiary-butyl ethe (4.152)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Pentafluorobenzene (6.097)+
-1,2-Dichloroethane (6.206)
Propionitrile (5.983)+
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.384)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.864)
-Tetrachloroethene (9.379)
-4-methyl-2-pentanone (9.444)+
-1,1,2-Trichloroethane (9.680)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Alkylbenzenes (10.100)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.917)+
-Ethylbenzene (10.961)+
m+p-Xylenes (11.181)
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.518)
-cis-1,4-Dichloro-2-Butene (12.633)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.062)
-4-Chlorotoluene (13.112)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.619)
-1,3-Dichlorobenzene (13.862)
-1,4-Dichlorobenzene-D4 (13.904)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.370)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.458)+
-1,2,3-Trichlorobenzene (17.123)

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4709.D
Report Date: 04-Apr-2018 05:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032418.b\T4709.D
Lab Smp Id: WG225352-5
Inj Date : 24-MAR-2018 15:39
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225352-5
Misc Info :
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032418.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 7   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

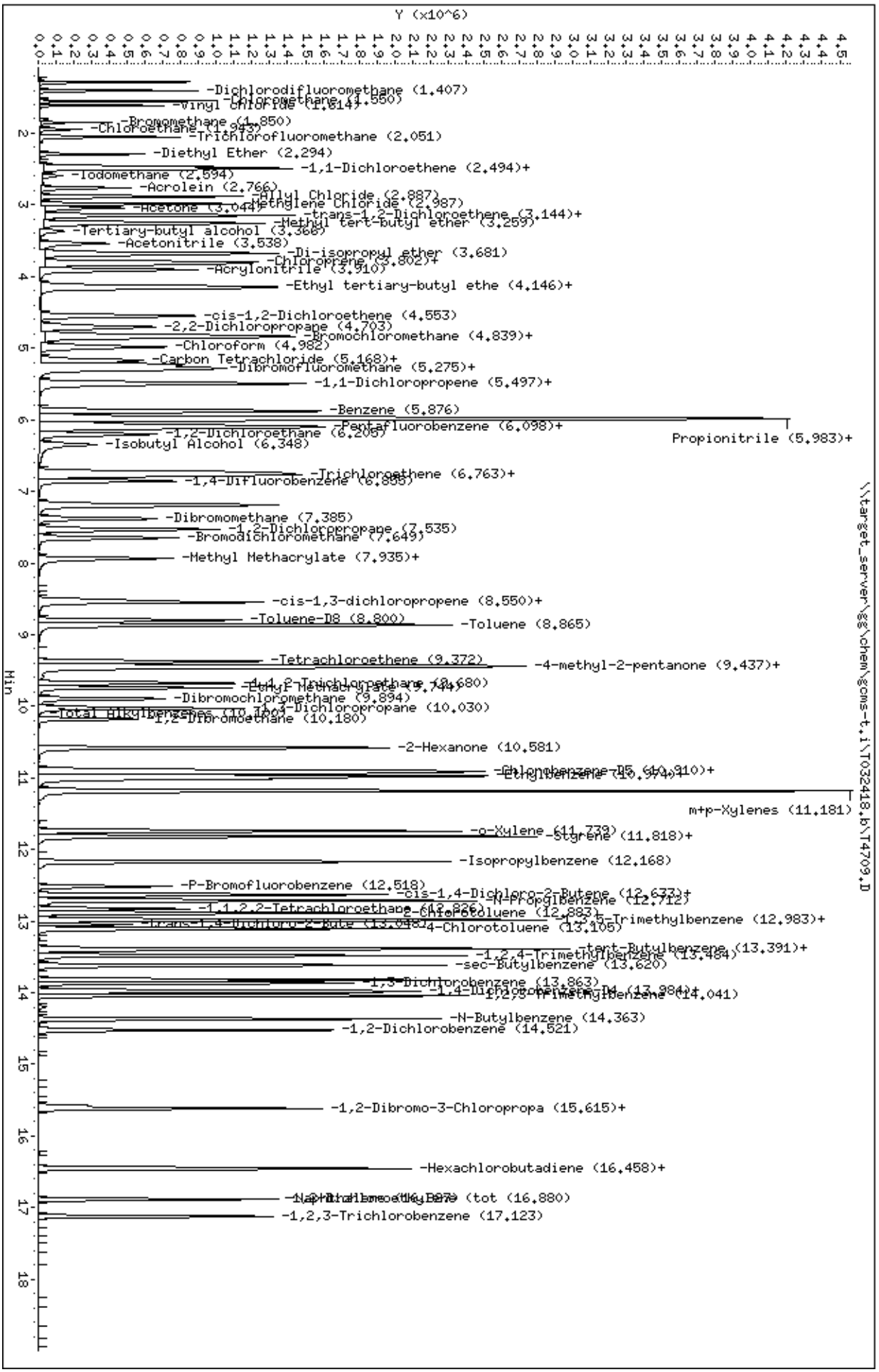
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	467653	100.000	98.2	
2	Chloromethane	50	1.549	1.549	(0.255)	643007	100.000	106	
3	Vinyl chloride	62	1.614	1.614	(0.266)	410185	100.000	106	
4	Bromomethane	94	1.850	1.850	(0.305)	132863	100.000	98.5	
5	Chloroethane	64	1.943	1.943	(0.320)	176992	100.000	96.7	
6	Trichlorofluoromethane	101	2.050	2.050	(0.338)	539689	100.000	89.0	
7	Diethyl Ether	59	2.293	2.293	(0.378)	267101	100.000	99.0	
19	Tertiary-butyl alcohol	59	3.373	3.373	(0.556)	209863	500.000	564	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	286779	100.000	96.3	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	867613	100.000	97.8	
9	Freon-113	151	2.486	2.486	(0.410)	233076	100.000	91.0	
11	Iodomethane	142	2.593	2.593	(0.427)	156362	100.000	126	
12	Acrolein	56	2.765	2.765	(0.456)	461254	500.000	469	
14	Methylene Chloride	84	2.987	2.987	(0.492)	561441	100.000	103	
15	Acetone	43	3.044	3.044	(0.502)	658223	500.000	517	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	346846	2000.00	2180	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	544944	100.000	100	
13	Allyl Chloride	41	2.887	2.887	(0.476)	729606	100.000	104	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	1614881	100.000	108	
20	Acetonitrile	41	3.537	3.537	(0.583)	570844	1000.00	953	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	1553157	100.000	111	
22	Chloroprene	53	3.802	3.802	(0.627)	782138	100.000	112	
39	Propionitrile	54	5.954	5.954	(0.981)	671352	1000.00	986	
40	Methacrylonitrile	41	5.983	5.983	(0.986)	2787689	1000.00	997	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4709.D
Report Date: 04-Apr-2018 05:28

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	3.830	3.830	(0.631)	966098	100.000	103	
	24	Acrylonitrile	52	3.909	3.909	(0.644)	766476	500.000	496	
	25	Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	1524530	100.000	102	
	26	Vinyl Acetate	43	4.166	4.166	(0.608)	1058185	100.000	104	
	27	cis-1,2-Dichloroethene	96	4.553	4.553	(0.750)	591707	100.000	112	
	52	Methyl Methacrylate	41	7.935	7.935	(1.157)	437131	100.000	104	
	28	2,2-Dichloropropane	77	4.703	4.703	(0.775)	758178	100.000	106	
	29	Bromochloromethane	128	4.853	4.853	(0.800)	247794	100.000	99.3	
	31	Chloroform	83	4.982	4.982	(0.821)	975101	100.000	104	
	32	Carbon Tetrachloride	117	5.168	5.168	(0.754)	649992	100.000	105	
	33	Tetrahydrofuran	42	5.232	5.232	(0.862)	715140	500.000	514	
$	34	Dibromofluoromethane	113	5.275	5.275	(0.869)	259742	50.0000	49.0	
	35	1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	843457	100.000	107	
	37	1,1-Dichloropropene	75	5.489	5.489	(0.801)	788498	100.000	111	
	36	2-Butanone	43	5.496	5.496	(0.906)	1107486	500.000	545	
	38	Benzene	78	5.875	5.875	(0.857)	2194159	100.000	108	
*	41	Pentafluorobenzene	168	6.068	6.068	(1.000)	524785	50.0000		
	30	Cyclohexane	56	4.824	4.824	(0.795)	834599	100.000	104	
	53	Ethyl Methacrylate	69	9.744	9.744	(1.421)	713237	100.000	102	
$	42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	346139	50.0000	47.8	
	43	Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	1463860	100.000	110	
	44	1,2-Dichloroethane	62	6.204	6.204	(0.905)	769198	100.000	100	
	47	Trichloroethene	95	6.776	6.776	(0.989)	579915	100.000	103	
*	48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	820181	50.0000		
	49	Dibromomethane	93	7.384	7.384	(1.077)	348145	100.000	106	
	50	1,2-Dichloropropane	63	7.534	7.534	(1.099)	549869	100.000	112	
	51	Bromodichloromethane	83	7.649	7.649	(1.116)	723728	100.000	113	
	57	cis-1,3-dichloropropene	75	8.550	8.550	(1.247)	959950	100.000	104	
	54	1,4-Dioxane	88	7.956	7.956	(1.161)	107209	2000.00	2330	
$	58	Toluene-D8	98	8.800	8.800	(1.284)	977196	50.0000	50.9	
	59	Toluene	92	8.864	8.864	(1.293)	1311271	100.000	107	
	61	4-methyl-2-pentanone	43	9.436	9.436	(1.377)	2144787	500.000	536	
	60	Tetrachloroethene	164	9.372	9.372	(0.861)	372492	100.000	107	
	62	trans-1,3-Dichloropropene	75	9.472	9.472	(1.382)	828051	100.000	104	
	63	1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	400092	100.000	109	
	64	Dibromochloromethane	129	9.894	9.894	(0.909)	467778	100.000	118	
	65	1,3-Dichloropropane	76	10.030	10.030	(0.921)	905293	100.000	110	
	66	1,2-Dibromoethane	107	10.180	10.180	(1.485)	464365	100.000	114	
	67	2-Hexanone	43	10.580	10.580	(0.972)	1462412	500.000	528	
*	68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	650699	50.0000		
	69	Chlorobenzene	112	10.909	10.909	(1.002)	1261023	100.000	104	
	70	1-Chlorohexane	91	10.931	10.931	(1.004)	641373	100.000	91.5	
	71	Ethylbenzene	106	10.974	10.974	(1.008)	705241	100.000	112	
	72	1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	429915	100.000	114	
	73	m+p-Xylenes	106	11.181	11.181	(1.027)	1589037	200.000	228	
	74	o-Xylene	106	11.739	11.739	(1.078)	784689	100.000	105	
	75	Styrene	104	11.817	11.817	(1.085)	1261574	100.000	105	
	76	Bromoform	173	11.817	11.817	(1.085)	284018	100.000	100	
	77	Isopropylbenzene	105	12.168	12.168	(0.871)	1861535	100.000	109	
$	78	P-Bromofluorobenzene	95	12.511	12.511	(1.825)	312584	50.0000	50.3	
	79	cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	153303	100.000	104	
	86	trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	115408	100.000	121	
	80	Bromobenzene	156	12.625	12.625	(0.904)	455138	100.000	106	
	81	N-Propylbenzene	91	12.711	12.711	(0.910)	2313358	100.000	111	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4709.D
Report Date: 04-Apr-2018 05:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	515328	100.000	103	
85	1,3,5-Trimethylbenzene	105	12.990	12.990	(0.930)	1522087	100.000	108	
83	2-Chlorotoluene	91	12.883	12.883	(0.922)	1377809	100.000	111	
84	1,2,3-Trichloropropane	75	12.976	12.976	(0.929)	464667	100.000	105	
87	4-Chlorotoluene	91	13.104	13.104	(0.938)	1460461	100.000	112	
88	tert-Butylbenzene	119	13.383	13.383	(0.958)	1348821	100.000	108	
89	Pentachloroethane	165	13.397	13.397	(0.959)	188001	100.000	120	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	1564193	100.000	108	
92	P-Isopropyltoluene	119	13.383	13.383	(0.958)	1348821	100.000	108	
93	1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	770450	100.000	107	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	281070	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	794648	100.000	103	
97	N-Butylbenzene	91	14.363	14.363	(1.028)	1465585	100.000	108	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	1885318	100.000	110	
99	1,2-Dichlorobenzene	146	14.527	14.527	(1.040)	749631	100.000	112	
100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.115)	91843	100.000	107	
101	1,3,5-Trichlorobenzene	180	15.621	15.621	(1.118)	565258	100.000	103	
102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	231113	100.000	113	
103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	499851	100.000	105	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	1587479	100.000	112	
104	Naphthalene	128	16.887	16.887	(1.209)	1119834	100.000	103	
105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	442587	100.000	103	
17	Methyl Acetate	43	3.158	3.158	(0.520)	437634	100.000	98.0	
46	Methylcyclohexane	83	6.733	6.733	(1.110)	861088	100.000	111	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Date : 24-MAR-2018 15:39
Client ID:
Sample Info: WG225352-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032418.b\T4709.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl Chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.943)
-Trichlorofluoromethane (2.051)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.766)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.910)
-Ethyl tertiary-butyl ethe (4.146)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.168)+
-Dibromofluoromethane (5.275)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Pentafluorobenzene (6.098)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.206)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.763)+
-1,4-Difluorobenzene (6.895)
-Dibromomethane (7.385)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.865)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
Total Alkylbenzenes (10.180)
1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.910)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.518)
-cis-1,4-Dichloro-2-Butene (12.673)+
-N-Propylbenzene (12.712)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.048)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.984)+
1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.521)
-1,2-Dibromo-3-Chloropropa (15.615)+
-Hexachlorobutadiene (16.458)+
-Naphthalene (16.879) (tot (16.880)
-1,2,3-Trichlorobenzene (17.123)

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Report Date: 04-Apr-2018 05:53

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Lab Smp Id: WG225352-7
Inj Date : 24-MAR-2018 16:15
Operator : JSS Inst ID: gcms-t.i
Smp Info : WG225352-7,SL2295
Misc Info : WG225352,WG225352-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032418.b\T8A05(23)D.m
Meth Date : 26-Mar-2018 21:31 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 8 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

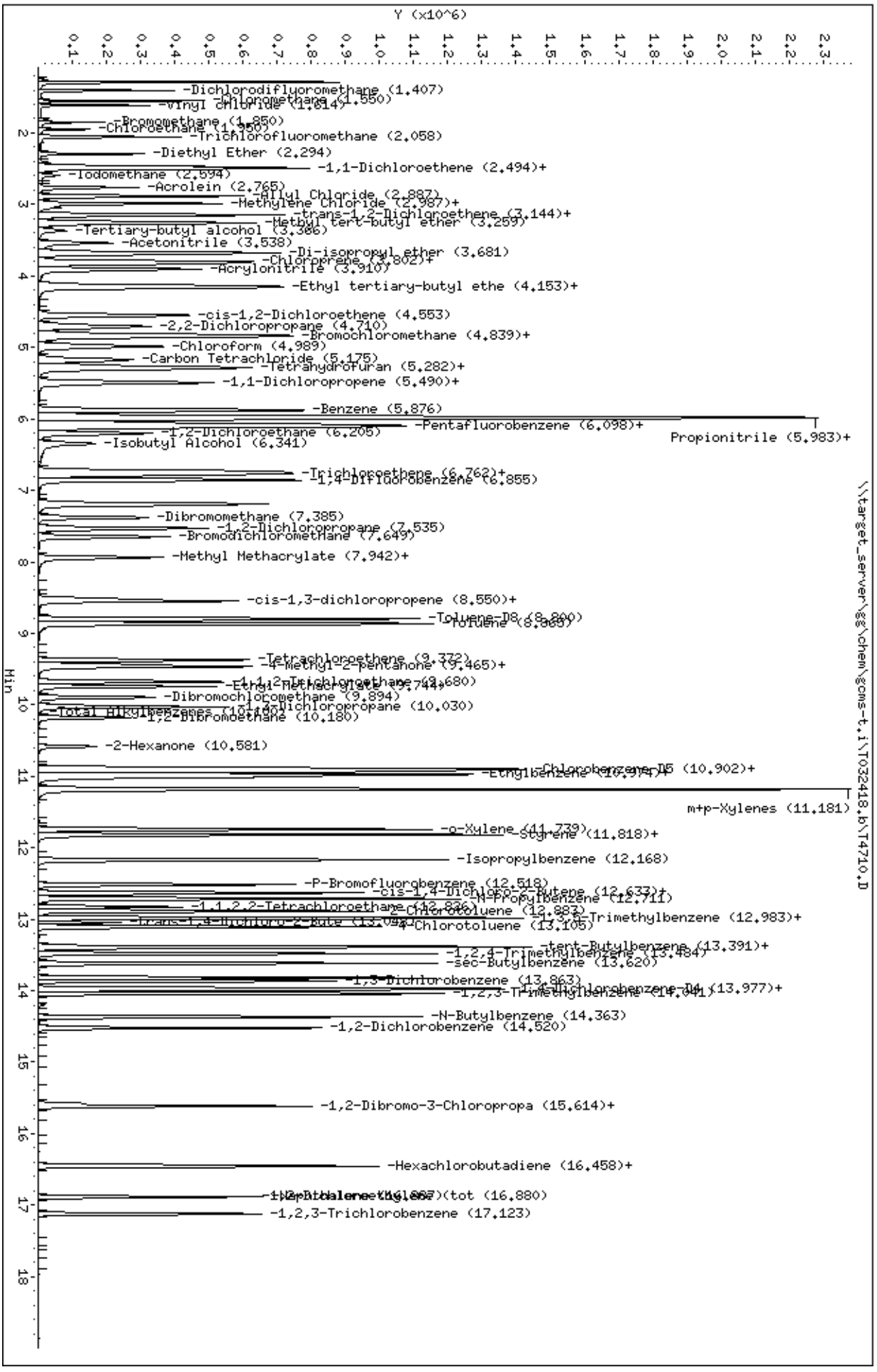
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	199957	42.2683	42.3	
2	Chloromethane	50	1.549	1.549	(0.255)	319944	50.2657	50.3	
3	Vinyl chloride	62	1.614	1.614	(0.266)	183872	47.2876	47.3	
4	Bromomethane	94	1.850	1.850	(0.305)	69582	51.3624	51.4	
5	Chloroethane	64	1.950	1.943	(0.321)	95226	52.4648	52.5	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	272145	45.8722	45.9	
7	Diethyl Ether	59	2.293	2.293	(0.378)	136679	50.9056	50.9	
19	Tertiary-butyl alcohol	59	3.366	3.373	(0.555)	107932	284.777	285	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	138241	46.8573	46.8	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	471542	53.5155	53.5	
9	Freon-113	151	2.493	2.486	(0.411)	128193	50.9693	51.0	
11	Iodomethane	142	2.593	2.593	(0.427)	74544	58.5016	58.5	
12	Acrolein	56	2.765	2.765	(0.456)	245914	253.348	253	
14	Methylene Chloride	84	2.987	2.987	(0.492)	271852	49.5651	49.6	
15	Acetone	43	3.044	3.044	(0.502)	71792	46.5656	46.6	
45	Isobutyl Alcohol	43	6.340	6.347	(1.045)	171876	1062.53	1060	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	278605	51.3246	51.3	
13	Allyl Chloride	41	2.887	2.887	(0.476)	372005	52.8443	52.8	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	800378	53.1648	53.2	
20	Acetonitrile	41	3.537	3.537	(0.583)	298288	503.503	504	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	789066	55.6476	55.6	
22	Chloroprene	53	3.802	3.802	(0.627)	392514	55.5175	55.5	
39	Propionitrile	54	5.954	5.954	(0.981)	354280	523.333	523	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Report Date: 04-Apr-2018 05:53

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	5.983	5.983	(0.986)	1529023	549.019	549	
	23	1,1-Dichloroethane	63	3.830	3.830	(0.631)	502173	53.5958	53.6	
	24	Acrylonitrile	52	3.909	3.909	(0.644)	410127	266.430	266	
	25	Ethyl tertiary-butyl ether	59	4.145	4.138	(0.683)	767022	51.4406	51.4	
	26	Vinyl Acetate	43	4.166	4.166	(0.608)	610542	58.6522	58.6	
	27	cis-1,2-Dichloroethene	96	4.553	4.553	(0.750)	289492	53.9956	54.0	
M	98	1,2-Dichloroethylene (total)	96				568097	105.320	105	
	52	Methyl Methacrylate	41	7.935	7.935	(1.157)	208214	49.1437	49.1	
	28	2,2-Dichloropropane	77	4.710	4.703	(0.776)	372560	51.8843	51.9	
	29	Bromochloromethane	128	4.853	4.853	(0.800)	127207	51.2156	51.2	
	31	Chloroform	83	4.989	4.982	(0.822)	482845	51.3124	51.3	
	32	Carbon Tetrachloride	117	5.175	5.168	(0.755)	306884	48.8145	48.8	
	33	Tetrahydrofuran	42	5.246	5.232	(0.865)	70931	53.3639	53.4	
$	34	Dibromofluoromethane	113	5.282	5.275	(0.870)	261825	49.7431	49.7	
	35	1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	403145	50.8487	50.8	
	37	1,1-Dichloropropene	75	5.489	5.489	(0.801)	385586	52.5450	52.5	
	36	2-Butanone	43	5.511	5.496	(0.908)	110846	53.9042	53.9	
	38	Benzene	78	5.875	5.875	(0.857)	1086503	52.0704	52.1	
*	41	Pentafluorobenzene	168	6.068	6.068	(1.000)	523118	50.0000		
	30	Cyclohexane	56	4.824	4.824	(0.795)	409589	50.9471	50.9	
	53	Ethyl Methacrylate	69	9.744	9.744	(1.421)	335280	48.1197	48.1	
$	42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	355271	49.5612	49.6	
	43	Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	727330	54.0593	54.0	
	44	1,2-Dichloroethane	62	6.204	6.204	(0.905)	384173	49.3649	49.4	
	47	Trichloroethene	95	6.769	6.776	(0.987)	289458	50.4330	50.4	
*	48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	830642	50.0000		
	49	Dibromomethane	93	7.384	7.384	(1.077)	171450	50.8884	50.9	
	50	1,2-Dichloropropane	63	7.534	7.534	(1.099)	264918	52.3233	52.3	
	51	Bromodichloromethane	83	7.649	7.649	(1.116)	360740	54.3939	54.4	
	57	cis-1,3-dichloropropene	75	8.550	8.550	(1.247)	447961	47.7688	47.8	
	54	1,4-Dioxane	88	7.956	7.956	(1.161)	57157	1187.42	1190	
$	58	Toluene-D8	98	8.800	8.800	(1.284)	970239	49.7783	49.8	
	59	Toluene	92	8.864	8.864	(1.293)	638619	50.8418	50.8	
	61	4-methyl-2-pentanone	43	9.443	9.436	(1.378)	206318	47.6729	47.7	
	60	Tetrachloroethene	164	9.379	9.372	(0.861)	185515	52.5248	52.5	
	62	trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	393945	48.8225	48.8	
	63	1,1,2-Trichloroethane	83	9.679	9.672	(1.412)	194585	51.6160	51.6	
	64	Dibromochloromethane	129	9.894	9.894	(0.909)	225296	55.2508	55.2	
	65	1,3-Dichloropropane	76	10.030	10.030	(0.921)	428721	51.3703	51.4	
	66	1,2-Dibromoethane	107	10.180	10.180	(1.485)	224339	53.0292	53.0	
	67	2-Hexanone	43	10.580	10.580	(0.972)	124448	46.1015	46.1	
*	68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	651557	50.0000		
	69	Chlorobenzene	112	10.909	10.909	(1.002)	619189	50.8909	50.9	
	70	1-Chlorohexane	91	10.931	10.931	(1.004)	321381	47.9723	48.0	
	71	Ethylbenzene	106	10.973	10.974	(1.008)	344263	53.5672	53.6	
	72	1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	204702	52.9298	52.9	
M	106	Xylenes (total)	106				1168979	161.228	161	
	73	m+p-Xylenes	106	11.181	11.181	(1.027)	795312	111.424	111	
	74	o-Xylene	106	11.739	11.739	(1.078)	373667	49.8033	49.8	
	75	Styrene	104	11.817	11.817	(1.085)	610994	50.5184	50.5	
	76	Bromoform	173	11.817	11.817	(1.085)	137071	49.1745	49.2	
	77	Isopropylbenzene	105	12.168	12.168	(0.871)	938730	52.5703	52.6	
$	78	P-Bromofluorobenzene	95	12.511	12.511	(1.825)	323657	51.3710	51.4	
	79	cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	73519	48.9512	49.0	

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Report Date: 04-Apr-2018 05:53

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
Compounds									
	86 trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	54128	53.6988	53.7	
	80 Bromobenzene	156	12.625	12.625	(0.904)	223049	50.3905	50.4	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	1156621	53.5220	53.5	
	82 1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	257637	50.2472	50.2	
	85 1,3,5-Trimethylbenzene	105	12.983	12.990	(0.929)	739897	50.3247	50.3	
	83 2-Chlorotoluene	91	12.883	12.883	(0.922)	684827	53.1638	53.2	
	84 1,2,3-Trichloropropane	75	12.976	12.976	(0.929)	223851	49.0409	49.0	
	87 4-Chlorotoluene	91	13.104	13.104	(0.938)	723437	53.4426	53.4	
	88 tert-Butylbenzene	119	13.383	13.383	(0.958)	652680	50.1670	50.2	
	89 Pentachloroethane	165	13.397	13.397	(0.959)	88768	53.7873	53.8	
	90 1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	759640	50.2086	50.2	
	92 P-Isopropyltoluene	119	13.383	13.383	(0.958)	652680	50.1670	50.2	
	93 1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	384792	51.6793	51.7	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	286950	50.0000		
	95 1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	382904	48.3410	48.3	
	97 N-Butylbenzene	91	14.363	14.363	(1.028)	717292	50.7338	50.7	
	91 sec-Butylbenzene	105	13.619	13.619	(0.975)	922999	51.0926	51.1	
	99 1,2-Dichlorobenzene	146	14.520	14.527	(1.039)	358670	51.3964	51.4	
	100 1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.115)	43999	49.8171	49.8	
	101 1,3,5-Trichlorobenzene	180	15.621	15.621	(1.118)	279145	49.8487	49.8	
	102 Hexachlorobutadiene	225	16.443	16.443	(1.177)	108797	51.1342	51.1	
	103 1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	240879	49.3833	49.4	
	96 1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	797865	54.1109	54.1	
	104 Naphthalene	128	16.887	16.887	(1.209)	532179	48.9655	49.0	
	105 1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	210990	48.6298	48.6	
	17 Methyl Acetate	43	3.165	3.158	(0.522)	217290	48.9870	49.0	
	46 Methylcyclohexane	83	6.741	6.733	(1.111)	455517	58.0344	58.0	
M	55 Total Alkylbenzenes	100				5601809	356.216	356	


Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.950)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)+
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.386)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.910)
-Ethyl tertiary-butyl ethe (4.153)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.710)
-Bromochloromethane (4.839)+
-Chloroform (4.989)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.490)+
-Benzene (5.876)
-Pentafluorobenzene (6.098)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.205)
-Isobutyl Alcohol (6.341)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.385)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.942)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.969)
-Tetrachloroethene (9.372)
-4-Methyl-2-pentanone (9.465)+
-1,1,2-Trichloroethane (9.680)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Alkylbenzenes (10.1
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.518)
-cis-1,4-Dichloro-2-Butene (12.633)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.044)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.458)+
-1,2,4-Trichlorobenzene (16.867)(tot (16.880)
-1,2,3-Trichlorobenzene (17.123)
Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D
Date : 24-MAR-2018 16:15
Client ID:
Sample Info: WG225352-7,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032418.b\T4710.D

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225300-4
Analytical Date: 03/23/18 07:53
Lab File ID : P4879.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 03/19/18 16:00 03/19/18 18:51
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.41040	0.36517	0.36517	0.010	-11.02184	20.00000	Averaged
2	Chloromethane	0.58524	0.53502	0.53502	0.100	-8.58022	20.00000	Averaged
3	Vinyl chloride	0.61371	0.58653	0.58653	0.010	-4.42993	20.00000	Averaged
4	Bromomethane	0.27205	0.30956	0.30956	0.010	13.78565	20.00000	Averaged
5	Chloroethane	0.39224	0.37623	0.37623	0.010	-4.08073	20.00000	Averaged
6	Trichlorofluoromethane	0.84149	0.87126	0.87126	0.010	3.53855	20.00000	Averaged
8	1,1-Dichloroethene	0.38056	0.36671	0.36671	0.100	-3.63979	20.00000	Averaged
9	Freon-113	0.28377	0.26442	0.26442	0.010	-6.81798	20.00000	Averaged
10	Carbon Disulfide	1.29664	1.26450	1.26450	0.010	-2.47820	20.00000	Averaged
14	Methylene Chloride	50.00000	44.31260	0.41337	0.010	-11.37480	20.00000	Linear
15	Acetone	0.13142	0.12185	0.12185	0.010	-7.28173	20.00000	Averaged
16	trans-1,2-Dichloroethene	0.41302	0.38124	0.38124	0.010	-7.69422	20.00000	Averaged
18	Methyl tert-butyl ether	1.19023	0.99922	0.99922	0.010	-16.04868	20.00000	Averaged
23	1,1-Dichloroethane	0.76941	0.70626	0.70626	0.100	-8.20822	20.00000	Averaged
27	cis-1,2-Dichloroethene	50.00000	42.63164	0.40026	0.010	-14.73672	20.00000	Linear
28	2,2-Dichloropropane	0.52330	0.52643	0.52643	0.010	0.59657	20.00000	Averaged
29	Bromochloromethane	50.00000	47.83397	0.18720	0.010	-4.33205	20.00000	Linear
31	Chloroform	0.73287	0.68140	0.68140	0.010	-7.02357	20.00000	Averaged
32	Carbon Tetrachloride	0.30195	0.30814	0.30814	0.010	2.04931	20.00000	Averaged
35	1,1,1-Trichloroethane	0.63452	0.59238	0.59238	0.010	-6.64136	20.00000	Averaged
36	2-Butanone	0.21262	0.19543	0.19543	0.010	-8.08698	20.00000	Averaged
37	1,1-Dichloropropene	0.33899	0.33300	0.33300	0.010	-1.76568	20.00000	Averaged
38	Benzene	1.02097	0.98232	0.98232	0.010	-3.78605	20.00000	Averaged
44	1,2-Dichloroethane	0.38372	0.36300	0.36300	0.010	-5.40035	20.00000	Averaged
47	Trichloroethene	0.24195	0.24164	0.24164	0.010	-0.12965	20.00000	Averaged
49	Dibromomethane	50.00000	44.50381	0.14843	0.010	-10.99237	20.00000	Linear
50	1,2-Dichloropropane	0.25773	0.25012	0.25012	0.010	-2.95202	20.00000	Averaged
51	Bromodichloromethane	0.32571	0.32656	0.32656	0.010	0.26033	20.00000	Averaged
57	cis-1,3-dichloropropene	50.00000	44.46038	0.44273	0.010	-11.07925	20.00000	Linear
59	Toluene	0.66239	0.63917	0.63917	0.010	-3.50444	20.00000	Averaged
60	Tetrachloroethene	0.17941	0.18941	0.18941	0.010	5.57449	20.00000	Averaged
61	4-methyl-2-pentanone	250	214	0.27744	0.010	-14.38715	20.00000	Linear
62	trans-1,3-Dichloropropene	50.00000	43.92316	0.40484	0.010	-12.15369	20.00000	Linear
63	1,1,2-Trichloroethane	50.00000	43.76072	0.19096	0.010	-12.47856	20.00000	Linear
64	Dibromochloromethane	50.00000	49.73041	0.25073	0.010	-0.53918	20.00000	Linear
65	1,3-Dichloropropane	0.43636	0.45708	0.45708	0.010	4.74902	20.00000	Averaged
66	1,2-Dibromoethane	50.00000	43.29511	0.23034	0.010	-13.40978	20.00000	Linear
67	2-Hexanone	250	235	0.19067	0.010	-6.03156	20.00000	Linear
69	Chlorobenzene	0.69689	0.74024	0.74024	0.300	6.22053	20.00000	Averaged
71	Ethylbenzene	50.00000	49.35989	0.39734	0.010	-1.28021	20.00000	Linear
72	1,1,1,2-Tetrachloroethane	0.23203	0.25753	0.25753	0.010	10.98715	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225300-4
Lab File ID : P4879.D
Initial Calibration Date(s): 03/19/18 16:00 03/19/18 18:51

SDG: SL2295
Analytical Date: 03/23/18 07:53
Instrument ID: GCMS-P
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	100	98.77580	0.50210	0.010	-1.22420	20.00000	Linear
74 o-Xylene	50.00000	49.10464	0.46582	0.010	-1.79071	20.00000	Linear
75 Styrene	50.00000	48.40886	0.81520	0.010	-3.18228	20.00000	Linear
76 Bromoform	50.00000	46.74039	0.16755	0.100	-6.51923	20.00000	Linear
77 Isopropylbenzene	50.00000	51.96425	2.18541	0.010	3.92850	20.00000	Linear
80 Bromobenzene	0.50641	0.57221	0.57221	0.010	12.99390	20.00000	Averaged
81 N-Propylbenzene	2.40517	2.85078	2.85078	0.010	18.52685	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.59097	0.63368	0.63368	0.300	7.22745	20.00000	Averaged
83 2-Chlorotoluene	1.44109	1.66836	1.66836	0.010	15.77080	20.00000	Averaged
84 1,2,3-Trichloropropane	0.54128	0.57920	0.57920	0.010	7.00461	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	52.53166	1.93911	0.010	5.06332	20.00000	Linear
87 4-Chlorotoluene	50.00000	52.57020	1.77676	0.010	5.14040	20.00000	Linear
88 tert-Butylbenzene	50.00000	51.55093	1.91176	0.010	3.10186	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	53.09373	2.02799	0.010	6.18746	20.00000	Linear
91 sec-Butylbenzene	50.00000	53.93534	2.38977	0.010	7.87068	20.00000	Linear
92 P-Isopropyltoluene	50.00000	52.57438	1.98486	0.010	5.14876	20.00000	Linear
93 1,3-Dichlorobenzene	0.97948	1.10250	1.10250	0.010	12.55968	20.00000	Averaged
95 1,4-Dichlorobenzene	1.06962	1.16934	1.16934	0.010	9.32285	20.00000	Averaged
97 N-Butylbenzene	50.00000	54.40886	1.83546	0.010	8.81771	20.00000	Linear
99 1,2-Dichlorobenzene	0.93306	1.05254	1.05254	0.010	12.80536	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	46.43313	0.10543	0.010	-7.13374	20.00000	Linear
102 Hexachlorobutadiene	0.19448	0.21334	0.21334	0.010	9.69811	20.00000	Averaged
103 1,2,4-Trichlorobenzene	0.57871	0.65065	0.65065	0.010	12.42960	20.00000	Averaged
104 Naphthalene	50.00000	46.90097	1.61676	0.010	-6.19806	20.00000	Linear
105 1,2,3-Trichlorobenzene	0.53288	0.56099	0.56099	0.010	5.27350	20.00000	Averaged
34 Dibromofluoromethane	0.49134	0.48217	0.48217	0.010	-1.86697	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.69650	0.66188	0.66188	0.010	-4.97063	20.00000	Averaged
58 Toluene-D8	1.26736	1.22699	1.22699	0.010	-3.18550	20.00000	Averaged
78 P-Bromofluorobenzene	0.55158	0.48537	0.48537	0.010	-12.00386	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225300-4
Lab File ID : P4879.D
Initial Calibration Date(s): 03/19/18 16:00 03/19/18 18:51

SDG: SL2295
Analytical Date: 03/23/18 07:53
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4879.D
Report Date: 04-Apr-2018 05:20

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032318.b\P4879.D
Lab Smp Id: WG225300-4
Inj Date : 23-MAR-2018 07:53 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225300-4,SL2295
Misc Info : WG225300,WG225041-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032318.b\P8A05(62)D.m
Meth Date : 28-Mar-2018 14:16 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:17 Cal File: P4810.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

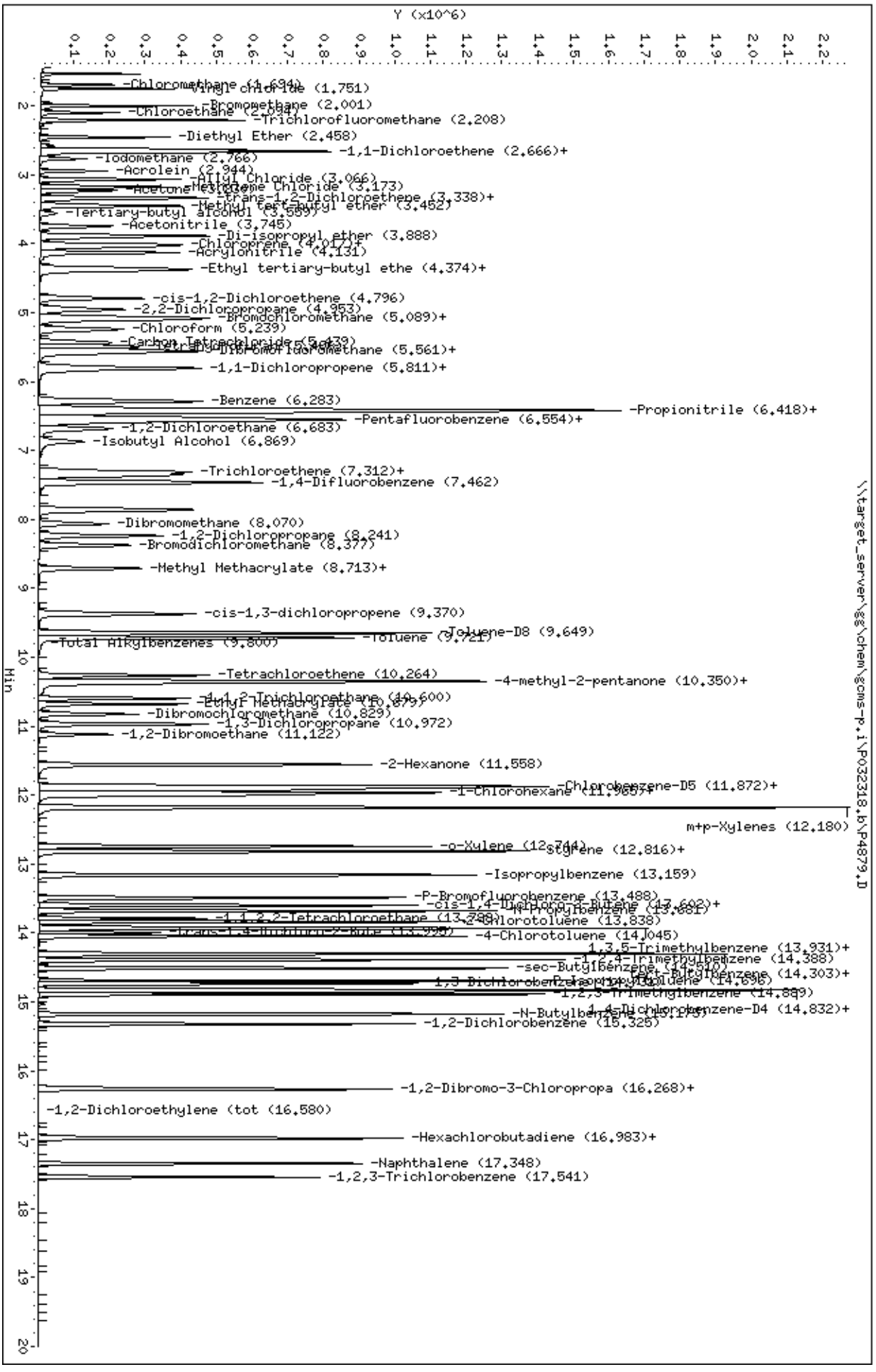
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	168980	50.0000	44.5	
2	Chloromethane	50	1.693	1.694	(0.259)	247580	50.0000	45.7	
3	Vinyl chloride	62	1.750	1.751	(0.268)	271412	50.0000	47.8	
4	Bromomethane	94	2.000	2.001	(0.306)	143246	50.0000	56.9	
5	Chloroethane	64	2.093	2.101	(0.321)	174100	50.0000	48.0	
6	Trichlorofluoromethane	101	2.208	2.209	(0.338)	403173	50.0000	51.8	
7	Diethyl Ether	59	2.458	2.459	(0.376)	185798	50.0000	45.1	
19	Tertiary-butyl alcohol	59	3.559	3.560	(0.545)	55665	250.000	237	
8	1,1-Dichloroethene	96	2.629	2.631	(0.403)	169694	50.0000	48.2	
10	Carbon Disulfide	76	2.665	2.666	(0.408)	585142	50.0000	48.8	
9	Freon-113	151	2.658	2.659	(0.407)	122360	50.0000	46.6	
11	Iodomethane	142	2.765	2.766	(0.423)	149722	50.0000	41.0	
12	Acrolein	56	2.944	2.945	(0.451)	169118	250.000	207	
14	Methylene Chloride	84	3.173	3.181	(0.486)	191285	50.0000	44.3	
15	Acetone	43	3.230	3.231	(0.494)	281938	250.000	232	
45	Isobutyl Alcohol	43	6.868	6.869	(1.051)	127144	1000.00	1090	
16	trans-1,2-Dichloroethene	96	3.337	3.338	(0.511)	176417	50.0000	46.2	
13	Allyl Chloride	41	3.065	3.074	(0.469)	268945	50.0000	43.8	
18	Methyl tert-butyl ether	73	3.451	3.453	(0.528)	462383	50.0000	42.0	
20	Acetonitrile	41	3.744	3.753	(0.573)	267363	500.000	446	
21	Di-isopropyl ether	45	3.887	3.889	(0.595)	546434	50.0000	42.0	
22	Chloroprene	53	4.009	4.017	(0.614)	266151	50.0000	45.0	
39	Propionitrile	54	6.389	6.390	(0.978)	306217	500.000	457	
40	Methacrylonitrile	41	6.418	6.426	(0.982)	1374236	500.000	445	

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4879.D
Report Date: 04-Apr-2018 05:20

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	4.045	4.053	(0.619)	326816	50.0000	45.9	
	24	Acrylonitrile	52	4.130	4.131	(0.632)	331235	250.000	214	
	25	Ethyl tertiary-butyl ether	59	4.366	4.368	(0.668)	476000	50.0000	37.6	
	26	Vinyl Acetate	43	4.395	4.396	(0.589)	389366	50.0000	52.6	
	27	cis-1,2-Dichloroethene	96	4.788	4.796	(0.733)	185220	50.0000	42.6	
	52	Methyl Methacrylate	41	8.712	8.706	(1.168)	167565	50.0000	38.7	
	28	2,2-Dichloropropane	77	4.953	4.954	(0.758)	243601	50.0000	50.3	
	29	Bromochloromethane	128	5.103	5.104	(0.781)	86625	50.0000	47.8	
	31	Chloroform	83	5.246	5.240	(0.803)	315313	50.0000	46.5	
	32	Carbon Tetrachloride	117	5.431	5.440	(0.728)	232170	50.0000	51.0	
	33	Tetrahydrofuran	42	5.496	5.497	(0.841)	281823	250.000	198	
$	34	Dibromofluoromethane	113	5.560	5.561	(0.851)	223121	50.0000	49.1	
	35	1,1,1-Trichloroethane	97	5.567	5.576	(0.852)	274122	50.0000	46.7	
	37	1,1-Dichloropropene	75	5.803	5.797	(0.778)	250905	50.0000	49.1	
	36	2-Butanone	43	5.817	5.819	(0.891)	452169	250.000	230	
	38	Benzene	78	6.289	6.290	(0.843)	740136	50.0000	48.1	
*	41	Pentafluorobenzene	168	6.532	6.533	(1.000)	462745	50.0000		
	30	Cyclohexane	56	5.081	5.075	(0.778)	288098	50.0000	41.6	
	53	Ethyl Methacrylate	69	10.678	10.679	(1.431)	254774	50.0000	38.9	
$	42	1,2-Dichloroethane-D4	65	6.561	6.562	(1.004)	306283	50.0000	47.5	
	43	Tertiary-amyl methyl ether	73	6.568	6.562	(1.005)	444573	50.0000	36.4	
	44	1,2-Dichloroethane	62	6.682	6.684	(0.896)	273506	50.0000	47.3	
	47	Trichloroethene	95	7.361	7.363	(0.987)	182065	50.0000	49.9	
*	48	1,4-Difluorobenzene	114	7.461	7.463	(1.000)	753459	50.0000		
	49	Dibromomethane	93	8.062	8.063	(1.080)	111833	50.0000	44.5	
	50	1,2-Dichloropropane	63	8.241	8.242	(1.104)	188456	50.0000	48.5	
	51	Bromodichloromethane	83	8.376	8.378	(1.123)	246051	50.0000	50.1	
	57	cis-1,3-dichloropropene	75	9.377	9.378	(1.257)	333581	50.0000	44.5	
	54	1,4-Dioxane	88	8.712	8.721	(1.168)	31585	1000.00	751	
$	58	Toluene-D8	98	9.649	9.650	(1.293)	924486	50.0000	48.4	
	59	Toluene	92	9.720	9.721	(1.303)	481590	50.0000	48.2	
	61	4-methyl-2-pentanone	43	10.342	10.343	(1.386)	1045196	250.000	214	
	60	Tetrachloroethene	164	10.263	10.265	(0.865)	142930	50.0000	52.8	
	62	trans-1,3-Dichloropropene	75	10.378	10.379	(1.391)	305027	50.0000	43.9	
	63	1,1,2-Trichloroethane	83	10.599	10.593	(1.421)	143879	50.0000	43.8	
	64	Dibromochloromethane	129	10.828	10.829	(0.912)	189206	50.0000	49.7	
	65	1,3-Dichloropropane	76	10.971	10.972	(0.924)	344923	50.0000	52.4	
	66	1,2-Dibromoethane	107	11.121	11.122	(1.490)	173548	50.0000	43.3	
	67	2-Hexanone	43	11.557	11.558	(0.974)	719419	250.000	235	
*	68	Chlorobenzene-D5	117	11.872	11.873	(1.000)	754620	50.0000		
	69	Chlorobenzene	112	11.893	11.894	(1.002)	558602	50.0000	53.1	
	70	1-Chlorohexane	91	11.922	11.923	(1.004)	274410	50.0000	54.4	
	71	Ethylbenzene	106	11.965	11.966	(1.008)	299840	50.0000	49.4	
	72	1,1,1,2-Tetrachloroethane	131	12.000	12.002	(1.011)	194336	50.0000	55.5	
	73	m+p-Xylenes	106	12.179	12.180	(1.026)	757783	100.000	98.8	
	74	o-Xylene	106	12.744	12.745	(1.073)	351514	50.0000	49.1	
	75	Styrene	104	12.815	12.817	(1.079)	615164	50.0000	48.4	
	76	Bromoform	173	12.815	12.817	(1.079)	126435	50.0000	46.7	
	77	Isopropylbenzene	105	13.158	13.160	(0.888)	873867	50.0000	52.0	
$	78	P-Bromofluorobenzene	95	13.487	13.488	(1.808)	365707	50.0000	44.0	
	79	cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	96622	50.0000	47.8	
	86	trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	77072	50.0000	56.0	
	80	Bromobenzene	156	13.594	13.596	(0.917)	228806	50.0000	56.5	
	81	N-Propylbenzene	91	13.680	13.674	(0.923)	1139923	50.0000	59.3	

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4879.D
Report Date: 04-Apr-2018 05:20

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.787	13.789	(0.930)	253385	50.0000	53.6	
85	1,3,5-Trimethylbenzene	105	13.930	13.932	(0.940)	775380	50.0000	52.5	
83	2-Chlorotoluene	91	13.837	13.839	(0.933)	667116	50.0000	57.9	
84	1,2,3-Trichloropropane	75	13.923	13.924	(0.939)	231601	50.0000	53.5	
87	4-Chlorotoluene	91	14.045	14.046	(0.947)	710462	50.0000	52.6	
88	tert-Butylbenzene	119	14.302	14.303	(0.965)	764444	50.0000	51.6	
89	Pentachloroethane	165	14.309	14.310	(0.965)	110725	50.0000	56.4	
90	1,2,4-Trimethylbenzene	105	14.388	14.389	(0.971)	810921	50.0000	53.1	
92	P-Isopropyltoluene	119	14.695	14.696	(0.991)	793673	50.0000	52.6	
93	1,3-Dichlorobenzene	146	14.738	14.739	(0.994)	440849	50.0000	56.3	
* 94	1,4-Dichlorobenzene-D4	152	14.824	14.825	(1.000)	399864	50.0000		
95	1,4-Dichlorobenzene	146	14.845	14.847	(1.001)	467576	50.0000	54.7	
97	N-Butylbenzene	91	15.174	15.175	(1.024)	733935	50.0000	54.4	
91	sec-Butylbenzene	105	14.509	14.511	(0.979)	955583	50.0000	53.9	
99	1,2-Dichlorobenzene	146	15.324	15.325	(1.034)	420873	50.0000	56.4	
100	1,2-Dibromo-3-Chloropropane	75	16.239	16.239	(1.095)	42158	50.0000	46.4	
101	1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	290651	50.0000	55.0	
102	Hexachlorobutadiene	225	16.961	16.962	(1.144)	85306	50.0000	54.8	
103	1,2,4-Trichlorobenzene	180	16.983	16.984	(1.146)	260170	50.0000	56.2	
96	1,2,3-Trimethylbenzene	105	14.888	14.889	(1.004)	820312	50.0000	55.2	
104	Naphthalene	128	17.347	17.347	(1.170)	646486	50.0000	46.9	
105	1,2,3-Trichlorobenzene	180	17.540	17.541	(1.183)	224318	50.0000	52.6	
17	Methyl Acetate	43	3.351	3.353	(0.513)	158399	50.0000	45.8	
46	Methylcyclohexane	83	7.311	7.313	(1.119)	284682	50.0000	40.5	


Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4879.D
Date : 23-MAR-2018 07:53
Client ID:
Sample Info: WG225300-4,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032318.b\P4879.D
Y (x10^6)
Min
-Chloromethane (1.694)
-Vinyl chloride (1.751)
-Bromomethane (2.001)
-Chloroethane (2.034)
-Trichlorofluoromethane (2.208)
-Diethyl Ether (2.458)
-1,1-Dichloroethene (2.666)+
-Iodomethane (2.766)
-Acrolein (2.944)
-Allyl Chloride (3.066)
-Methylene Chloride (3.173)
-Acetone (3.209)
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.452)
-Tertiary-butyl alcohol (3.559)
-Acetonitrile (3.745)
-Di-isopropyl ether (3.888)
-Chloroprene (4.017)+
-Acrylonitrile (4.131)
-Ethyl tertiary-butyl ethe (4.374)+
-cis-1,2-Dichloroethene (4.796)
-2,2-Dichloropropane (4.953)
-Bromochloromethane (5.089)+
-Chloroform (5.239)
-Carbon Tetrachloride (5.439)
-Dibromofluoromethane (5.561)+
-1,1-Dichloropropene (5.811)+
-Benzene (6.283)
-Propionitrile (6.418)+
-Pentafluorobenzene (6.554)+
-1,2-Dichloroethane (6.683)
-Isobutyl Alcohol (6.869)
-Trichloroethene (7.312)+
-1,4-Difluorobenzene (7.462)
-Dibromomethane (8.070)
-1,2-Dichloropropane (8.241)
-Bromodichloromethane (8.377)
-Methyl Methacrylate (8.713)+
-cis-1,3-dichloropropene (9.370)
-Toluene-D8 (9.649)
-Toluene (9.721)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.264)
-4-methyl-2-pentanone (10.350)+
-1,1,2-Trichloroethane (10.600)
-Ethyl Methacrylate (10.679)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.122)
-2-Hexanone (11.558)
-Chlorobenzene-D5 (11.872)+
-1-Chlorohexane (11.965)+
m+p-Xylenes (12.180)
-o-Xylene (12.744)
-Styrene (12.816)+
-Isopropylbenzene (13.159)
-P-Bromofluorobenzene (13.488)
-cis-1,4-Dichloro-2-Butene (13.602)+
-n-Propylbenzene (13.681)
-1,1,2,2-Tetrachloroethane (13.788)
-2-Chlorotoluene (13.838)
-trans-1,4-Dichloro-2-Bute (13.998)
-4-Chlorotoluene (14.045)
-1,3,5-Trimethylbenzene (13.931)+
-1,2,4-Trimethylbenzene (14.388)
-sec-Butylbenzene (14.510)
-tert-Butylbenzene (14.303)+
-1,3-Dichlorobenzene (14.696)
-p-Isopropyltoluene (14.696)
-1,2,3-Trimethylbenzene (14.889)
-N-Butylbenzene (15.175)
-1,4-Dichlorobenzene-D4 (14.832)+
-1,2-Dichlorobenzene (15.325)
-1,2-Dibromo-3-Chloropropa (16.268)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.983)+
-Naphthalene (17.348)
-1,2,3-Trichlorobenzene (17.541)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225300-5
Lab File ID : P4898.D
Initial Calibration Date(s): 03/19/18 16:00 03/19/18 18:51

SDG: SL2295
Analytical Date: 03/23/18 18:58
Instrument ID: GCMS-P
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.41040	0.34611	0.34611	0.010	-15.66513	50.00000	Averaged
2	Chloromethane	0.58524	0.53883	0.53883	0.100	-7.92970	50.00000	Averaged
3	Vinyl chloride	0.61371	0.52993	0.52993	0.010	-13.65141	50.00000	Averaged
4	Bromomethane	0.27205	0.29912	0.29912	0.010	9.94873	50.00000	Averaged
5	Chloroethane	0.39224	0.38338	0.38338	0.010	-2.25843	50.00000	Averaged
6	Trichlorofluoromethane	0.84149	0.87671	0.87671	0.010	4.18598	50.00000	Averaged
8	1,1-Dichloroethene	0.38056	0.35866	0.35866	0.100	-5.75553	50.00000	Averaged
9	Freon-113	0.28377	0.30531	0.30531	0.010	7.59262	50.00000	Averaged
10	Carbon Disulfide	1.29664	1.21933	1.21933	0.010	-5.96228	50.00000	Averaged
14	Methylene Chloride	50.00000	42.73653	0.39882	0.010	-14.52694	50.00000	Linear
15	Acetone	0.13142	0.12588	0.12588	0.010	-4.21666	50.00000	Averaged
16	trans-1,2-Dichloroethene	0.41302	0.35916	0.35916	0.010	-13.03969	50.00000	Averaged
18	Methyl tert-butyl ether	1.19023	0.96483	0.96483	0.010	-18.93767	50.00000	Averaged
23	1,1-Dichloroethane	0.76941	0.69805	0.69805	0.100	-9.27464	50.00000	Averaged
27	cis-1,2-Dichloroethene	50.00000	41.42025	0.38877	0.010	-17.15949	50.00000	Linear
28	2,2-Dichloropropane	0.52330	0.36708	0.36708	0.010	-29.85378	50.00000	Averaged
29	Bromochloromethane	50.00000	48.22266	0.18869	0.010	-3.55469	50.00000	Linear
31	Chloroform	0.73287	0.67070	0.67070	0.010	-8.48317	50.00000	Averaged
32	Carbon Tetrachloride	0.30195	0.29466	0.29466	0.010	-2.41362	50.00000	Averaged
35	1,1,1-Trichloroethane	0.63452	0.58642	0.58642	0.010	-7.58050	50.00000	Averaged
36	2-Butanone	0.21262	0.20710	0.20710	0.010	-2.59939	50.00000	Averaged
37	1,1-Dichloropropene	0.33899	0.32097	0.32097	0.010	-5.31681	50.00000	Averaged
38	Benzene	1.02097	0.95110	0.95110	0.010	-6.84411	50.00000	Averaged
44	1,2-Dichloroethane	0.38372	0.35629	0.35629	0.010	-7.14982	50.00000	Averaged
47	Trichloroethene	0.24195	0.23032	0.23032	0.010	-4.80902	50.00000	Averaged
49	Dibromomethane	50.00000	45.39370	0.15149	0.010	-9.21259	50.00000	Linear
50	1,2-Dichloropropane	0.25773	0.24195	0.24195	0.010	-6.12094	50.00000	Averaged
51	Bromodichloromethane	0.32571	0.31791	0.31791	0.010	-2.39533	50.00000	Averaged
57	cis-1,3-dichloropropene	50.00000	41.45556	0.41162	0.010	-17.08889	50.00000	Linear
59	Toluene	0.66239	0.62517	0.62517	0.010	-5.61759	50.00000	Averaged
60	Tetrachloroethene	0.17941	0.17662	0.17662	0.010	-1.55177	50.00000	Averaged
61	4-methyl-2-pentanone	250	225	0.29236	0.010	-9.95769	50.00000	Linear
62	trans-1,3-Dichloropropene	50.00000	42.06564	0.38682	0.010	-15.86871	50.00000	Linear
63	1,1,2-Trichloroethane	50.00000	45.44039	0.19852	0.010	-9.11923	50.00000	Linear
64	Dibromochloromethane	50.00000	47.95654	0.24151	0.010	-4.08691	50.00000	Linear
65	1,3-Dichloropropane	0.43636	0.45632	0.45632	0.010	4.57488	50.00000	Averaged
66	1,2-Dibromoethane	50.00000	43.06904	0.22909	0.010	-13.86192	50.00000	Linear
67	2-Hexanone	250	242	0.19700	0.010	-3.00430	50.00000	Linear
69	Chlorobenzene	0.69689	0.71818	0.71818	0.300	3.05498	50.00000	Averaged
71	Ethylbenzene	50.00000	48.24576	0.38813	0.010	-3.50848	50.00000	Linear
72	1,1,1,2-Tetrachloroethane	0.23203	0.24815	0.24815	0.010	6.94636	50.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225300-5
Lab File ID : P4898.D
Initial Calibration Date(s): 03/19/18 16:00 03/19/18 18:51

SDG: SL2295
Analytical Date: 03/23/18 18:58
Instrument ID: GCMS-P
Column ID:

Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	100	96.15297	0.48841	0.010	-3.84703	50.00000	Linear
74 o-Xylene	50.00000	47.76591	0.45279	0.010	-4.46817	50.00000	Linear
75 Styrene	50.00000	46.93076	0.78927	0.010	-6.13848	50.00000	Linear
76 Bromoform	50.00000	45.92369	0.16447	0.100	-8.15261	50.00000	Linear
77 Isopropylbenzene	50.00000	49.30430	2.07153	0.010	-1.39141	50.00000	Linear
80 Bromobenzene	0.50641	0.54734	0.54734	0.010	8.08293	50.00000	Averaged
81 N-Propylbenzene	2.40517	2.71500	2.71500	0.010	12.88154	50.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.59097	0.62696	0.62696	0.300	6.09008	50.00000	Averaged
83 2-Chlorotoluene	1.44109	1.57961	1.57961	0.010	9.61252	50.00000	Averaged
84 1,2,3-Trichloropropane	0.54128	0.57591	0.57591	0.010	6.39723	50.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	50.15065	1.84916	0.010	0.30129	50.00000	Linear
87 4-Chlorotoluene	50.00000	50.38103	1.70187	0.010	0.76205	50.00000	Linear
88 tert-Butylbenzene	50.00000	49.13485	1.81958	0.010	-1.73031	50.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	50.64434	1.93275	0.010	1.28868	50.00000	Linear
91 sec-Butylbenzene	50.00000	51.30281	2.27131	0.010	2.60562	50.00000	Linear
92 P-Isopropyltoluene	50.00000	49.76792	1.87632	0.010	-0.46416	50.00000	Linear
93 1,3-Dichlorobenzene	0.97948	1.05547	1.05547	0.010	7.75833	50.00000	Averaged
95 1,4-Dichlorobenzene	1.06962	1.11979	1.11979	0.010	4.69031	50.00000	Averaged
97 N-Butylbenzene	50.00000	50.78661	1.71037	0.010	1.57321	50.00000	Linear
99 1,2-Dichlorobenzene	0.93306	1.03260	1.03260	0.010	10.66805	50.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	49.44722	0.11252	0.010	-1.10556	50.00000	Linear
102 Hexachlorobutadiene	0.19448	0.19102	0.19102	0.010	-1.77957	50.00000	Averaged
103 1,2,4-Trichlorobenzene	0.57871	0.62251	0.62251	0.010	7.56791	50.00000	Averaged
104 Naphthalene	50.00000	45.82142	1.57842	0.010	-8.35715	50.00000	Linear
105 1,2,3-Trichlorobenzene	0.53288	0.54166	0.54166	0.010	1.64598	50.00000	Averaged
34 Dibromofluoromethane	0.49134	0.49432	0.49432	0.010	0.60701	50.00000	Averaged
42 1,2-Dichloroethane-D4	0.69650	0.68691	0.68691	0.010	-1.37808	50.00000	Averaged
58 Toluene-D8	1.26736	1.23766	1.23766	0.010	-2.34338	50.00000	Averaged
78 P-Bromofluorobenzene	0.55158	0.49890	0.49890	0.010	-9.55088	50.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225300-5
Lab File ID : P4898.D
Initial Calibration Date(s): 03/19/18 16:00 03/19/18 18:51

SDG: SL2295
Analytical Date: 03/23/18 18:58
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4898.D
Report Date: 04-Apr-2018 05:20

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032318.b\P4898.D
Lab Smp Id: WG225300-5 Client Smp ID: ontinuing Calibrati
Inj Date : 23-MAR-2018 18:58 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225300-5,SL2295
Misc Info : WG225300,WG225041-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032318.b\P8A05(62)D.m
Meth Date : 28-Mar-2018 14:16 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:17 Cal File: P4810.D
Als bottle: 20 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SW8260-S.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.538	1.537	(0.235)	145342	50.0000	42.2	
2	Chloromethane	50	1.688	1.694	(0.258)	226270	50.0000	46.0	
3	Vinyl chloride	62	1.752	1.751	(0.268)	222533	50.0000	43.2	
4	Bromomethane	94	2.002	2.001	(0.306)	125608	50.0000	55.0	
5	Chloroethane	64	2.095	2.101	(0.321)	160992	50.0000	48.9	
6	Trichlorofluoromethane	101	2.210	2.209	(0.338)	368155	50.0000	52.1	
7	Diethyl Ether	59	2.453	2.459	(0.375)	169860	50.0000	45.5	
8	1,1-Dichloroethene	96	2.631	2.631	(0.403)	150611	50.0000	47.1	
9	Freon-113	151	2.660	2.659	(0.407)	128210	50.0000	53.8	
10	Carbon Disulfide	76	2.667	2.666	(0.408)	512028	50.0000	47.0	
11	Iodomethane	142	2.767	2.766	(0.424)	111757	50.0000	33.7	
12	Acrolein	56	2.946	2.945	(0.451)	155541	250.000	210	
13	Allyl Chloride	41	3.067	3.074	(0.469)	225909	50.0000	40.6	
14	Methylene Chloride	84	3.175	3.181	(0.486)	167474	50.0000	42.7	
15	Acetone	43	3.232	3.231	(0.495)	264308	250.000	239	
16	trans-1,2-Dichloroethene	96	3.339	3.338	(0.511)	150822	50.0000	43.5	
17	Methyl Acetate	43	3.353	3.353	(0.513)	151805	50.0000	48.4	
18	Methyl tert-butyl ether	73	3.453	3.453	(0.529)	405159	50.0000	40.5	
19	Tertiary-butyl alcohol	59	3.561	3.560	(0.545)	60290	250.000	287	
20	Acetonitrile	41	3.746	3.753	(0.573)	273476	500.000	503	
21	Di-isopropyl ether	45	3.889	3.889	(0.595)	488811	50.0000	41.4	
22	Chloroprene	53	4.011	4.017	(0.614)	237925	50.0000	44.3	
23	1,1-Dichloroethane	63	4.047	4.053	(0.619)	293130	50.0000	45.4	
24	Acrylonitrile	52	4.132	4.131	(0.632)	316077	250.000	225	

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4898.D
Report Date: 04-Apr-2018 05:20

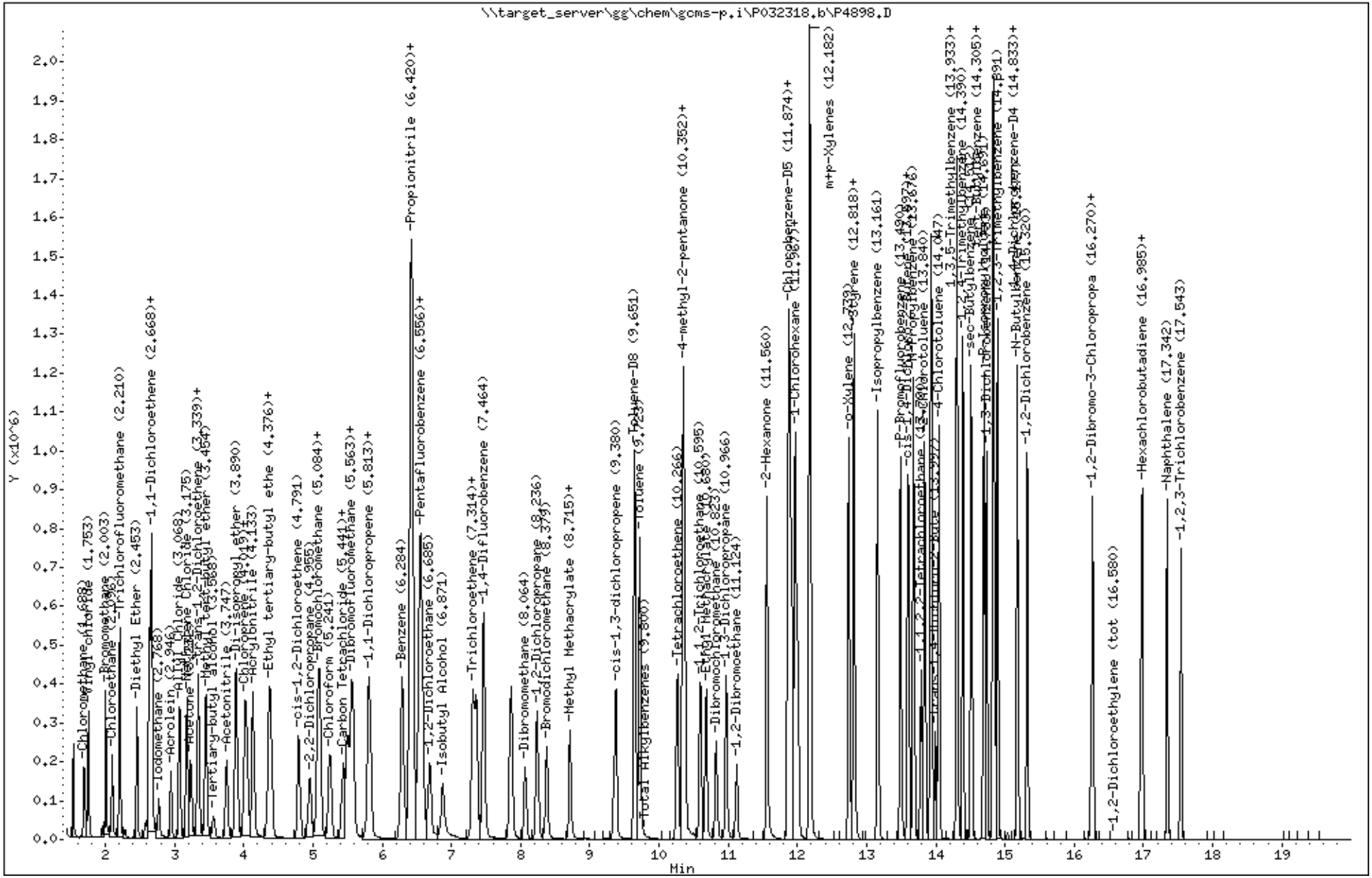
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	25 Ethyl tertiary-butyl ether	59	4.368	4.368	(0.669)	422849	50.0000	36.9	
	26 Vinyl Acetate	43	4.397	4.396	(0.589)	357739	50.0000	52.6	
	27 cis-1,2-Dichloroethene	96	4.790	4.796	(0.733)	163255	50.0000	41.4	
	28 2,2-Dichloropropane	77	4.954	4.954	(0.758)	154146	50.0000	35.1	
	29 Bromochloromethane	128	5.105	5.104	(0.781)	79234	50.0000	48.2	
	30 Cyclohexane	56	5.076	5.075	(0.777)	255400	50.0000	40.6	
	31 Chloroform	83	5.240	5.240	(0.802)	281645	50.0000	45.8	
	32 Carbon Tetrachloride	117	5.433	5.440	(0.728)	203763	50.0000	48.8	
	33 Tetrahydrofuran	42	5.505	5.497	(0.842)	276256	250.000	214	
$	34 Dibromofluoromethane	113	5.562	5.561	(0.851)	207580	50.0000	50.3	
	35 1,1,1-Trichloroethane	97	5.569	5.576	(0.852)	246255	50.0000	46.2	
	36 2-Butanone	43	5.819	5.819	(0.891)	434828	250.000	244	
	37 1,1-Dichloropropene	75	5.805	5.797	(0.778)	221952	50.0000	47.3	
	38 Benzene	78	6.284	6.290	(0.842)	657694	50.0000	46.6	
	39 Propionitrile	54	6.398	6.390	(0.979)	305457	500.000	502	
	40 Methacrylonitrile	41	6.420	6.426	(0.982)	1297824	500.000	463	
*	41 Pentafluorobenzene	168	6.534	6.533	(1.000)	419927	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.563	6.562	(1.004)	288450	50.0000	49.3	
	43 Tertiary-amyl methyl ether	73	6.570	6.562	(1.005)	393047	50.0000	35.5	
	44 1,2-Dichloroethane	62	6.684	6.684	(0.896)	246377	50.0000	46.4	
	45 Isobutyl Alcohol	43	6.870	6.869	(1.051)	140807	1000.00	1350	
	46 Methylcyclohexane	83	7.306	7.313	(1.118)	250628	50.0000	39.4	
	47 Trichloroethene	95	7.363	7.363	(0.987)	159267	50.0000	47.6	
*	48 1,4-Difluorobenzene	114	7.463	7.463	(1.000)	691512	50.0000		
	49 Dibromomethane	93	8.064	8.063	(1.080)	104755	50.0000	45.4	
	50 1,2-Dichloropropane	63	8.235	8.242	(1.103)	167314	50.0000	46.9	
	51 Bromodichloromethane	83	8.378	8.378	(1.123)	219840	50.0000	48.8	
	52 Methyl Methacrylate	41	8.714	8.706	(1.168)	158606	50.0000	39.8	
	53 Ethyl Methacrylate	69	10.680	10.679	(1.431)	234982	50.0000	39.1	
	54 1,4-Dioxane	88	8.714	8.721	(1.168)	41544	1000.00	1080	
	57 cis-1,3-dichloropropene	75	9.379	9.378	(1.257)	284643	50.0000	41.4	
$	58 Toluene-D8	98	9.644	9.650	(1.292)	855858	50.0000	48.8	
	59 Toluene	92	9.722	9.721	(1.303)	432316	50.0000	47.2	
	60 Tetrachloroethene	164	10.265	10.265	(0.865)	124528	50.0000	49.2	
	61 4-methyl-2-pentanone	43	10.351	10.343	(1.387)	1010854	250.000	225	
	62 trans-1,3-Dichloropropene	75	10.380	10.379	(1.391)	267493	50.0000	42.1	
	63 1,1,2-Trichloroethane	83	10.594	10.593	(1.419)	137277	50.0000	45.4	
	64 Dibromochloromethane	129	10.830	10.829	(0.913)	170280	50.0000	48.0	
	65 1,3-Dichloropropane	76	10.973	10.972	(0.925)	321732	50.0000	52.3	
	66 1,2-Dibromoethane	107	11.123	11.122	(1.490)	158417	50.0000	43.1	
	67 2-Hexanone	43	11.559	11.558	(0.974)	694480	250.000	242	
*	68 Chlorobenzene-D5	117	11.867	11.873	(1.000)	705055	50.0000		
	69 Chlorobenzene	112	11.888	11.894	(1.002)	506358	50.0000	51.5	
	70 1-Chlorohexane	91	11.924	11.923	(1.005)	251533	50.0000	53.4	
	71 Ethylbenzene	106	11.967	11.966	(1.008)	273655	50.0000	48.2	
	72 1,1,1,2-Tetrachloroethane	131	12.002	12.002	(1.011)	174961	50.0000	53.5	
	73 m+p-Xylenes	106	12.181	12.180	(1.027)	688716	100.000	96.2	
	74 o-Xylene	106	12.739	12.745	(1.073)	319240	50.0000	47.8	
	75 Styrene	104	12.817	12.817	(1.080)	556476	50.0000	46.9	
	76 Bromoform	173	12.817	12.817	(1.080)	115960	50.0000	45.9	
	77 Isopropylbenzene	105	13.160	13.160	(0.888)	785640	50.0000	49.3	
$	78 P-Bromofluorobenzene	95	13.489	13.488	(1.807)	344996	50.0000	45.2	
	79 cis-1,4-Dichloro-2-Butene	53	13.604	13.610	(0.918)	75138	50.0000	39.5	
	80 Bromobenzene	156	13.596	13.596	(0.917)	207582	50.0000	54.0	

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4898.D
Report Date: 04-Apr-2018 05:20

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
81	N-Propylbenzene	91	13.675	13.674	(0.922)	1029679	50.0000	56.4	
82	1,1,2,2-Tetrachloroethane	83	13.789	13.789	(0.930)	237777	50.0000	53.0	
83	2-Chlorotoluene	91	13.839	13.839	(0.933)	599077	50.0000	54.8	
84	1,2,3-Trichloropropane	75	13.925	13.924	(0.939)	218418	50.0000	53.2	
85	1,3,5-Trimethylbenzene	105	13.932	13.932	(0.940)	701306	50.0000	50.2	
86	trans-1,4-Dichloro-2-Butene	53	13.997	13.996	(0.944)	62686	50.0000	48.0	
87	4-Chlorotoluene	91	14.047	14.046	(0.947)	645446	50.0000	50.4	
88	tert-Butylbenzene	119	14.304	14.303	(0.965)	690087	50.0000	49.1	
89	Pentachloroethane	165	14.311	14.310	(0.965)	98877	50.0000	53.1	
90	1,2,4-Trimethylbenzene	105	14.390	14.389	(0.971)	733006	50.0000	50.6	
91	sec-Butylbenzene	105	14.511	14.511	(0.979)	861408	50.0000	51.3	
92	P-Isopropyltoluene	119	14.690	14.696	(0.991)	711607	50.0000	49.8	
93	1,3-Dichlorobenzene	146	14.733	14.739	(0.994)	400293	50.0000	53.9	
* 94	1,4-Dichlorobenzene-D4	152	14.826	14.825	(1.000)	379256	50.0000		
95	1,4-Dichlorobenzene	146	14.840	14.847	(1.001)	424686	50.0000	52.3	
96	1,2,3-Trimethylbenzene	105	14.890	14.889	(1.004)	750009	50.0000	53.2	
97	N-Butylbenzene	91	15.176	15.175	(1.024)	648668	50.0000	50.8	
99	1,2-Dichlorobenzene	146	15.319	15.325	(1.033)	391619	50.0000	55.3	
100	1,2-Dibromo-3-Chloropropane	75	16.234	16.239	(1.095)	42672	50.0000	49.4	
101	1,3,5-Trichlorobenzene	180	16.270	16.268	(1.097)	261207	50.0000	52.2	
102	Hexachlorobutadiene	225	16.963	16.962	(1.144)	72444	50.0000	49.1	
103	1,2,4-Trichlorobenzene	180	16.985	16.984	(1.146)	236091	50.0000	53.8	
104	Naphthalene	128	17.342	17.347	(1.170)	598626	50.0000	45.8	
105	1,2,3-Trichlorobenzene	180	17.542	17.541	(1.183)	205426	50.0000	50.8	

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4898.D
Date : 23-MAR-2018 18:58
Client ID: ontinuing Calibrati
Sample Info: WG225300-5,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18



Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225461-4
Analytical Date: 03/27/18 08:00
Lab File ID : P4926.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.38805	0.38029	0.38029	0.010	-1.99933	20.00000	Averaged
2	Chloromethane	0.57151	0.51399	0.51399	0.100	-10.06460	20.00000	Averaged
3	Vinyl chloride	0.59007	0.56318	0.56318	0.010	-4.55677	20.00000	Averaged
4	Bromomethane	0.32478	0.30548	0.30548	0.010	-5.94072	20.00000	Averaged
5	Chloroethane	0.38436	0.37943	0.37943	0.010	-1.28237	20.00000	Averaged
6	Trichlorofluoromethane	0.87177	0.91142	0.91142	0.010	4.54879	20.00000	Averaged
8	1,1-Dichloroethene	0.39118	0.38015	0.38015	0.100	-2.81909	20.00000	Averaged
9	Freon-113	0.33232	0.32312	0.32312	0.010	-2.76788	20.00000	Averaged
10	Carbon Disulfide	1.30176	1.29895	1.29895	0.010	-0.21634	20.00000	Averaged
14	Methylene Chloride	0.44482	0.41831	0.41831	0.010	-5.95992	20.00000	Averaged
15	Acetone	0.14318	0.12188	0.12188	0.010	-14.87728	20.00000	Averaged
16	trans-1,2-Dichloroethene	50.00000	45.86474	0.37778	0.010	-8.27053	20.00000	Linear
18	Methyl tert-butyl ether	50.00000	42.80314	1.02565	0.010	-14.39372	20.00000	Linear
23	1,1-Dichloroethane	0.72583	0.73004	0.73004	0.100	0.58058	20.00000	Averaged
27	cis-1,2-Dichloroethene	50.00000	46.49463	0.41074	0.010	-7.01074	20.00000	Linear
28	2,2-Dichloropropane	50.00000	45.30580	0.53411	0.010	-9.38839	20.00000	Linear
29	Bromochloromethane	50.00000	55.66591	0.20158	0.010	11.33182	20.00000	Linear
31	Chloroform	0.70534	0.69853	0.69853	0.010	-0.96651	20.00000	Averaged
32	Carbon Tetrachloride	0.30566	0.32111	0.32111	0.010	5.05551	20.00000	Averaged
35	1,1,1-Trichloroethane	0.60373	0.62288	0.62288	0.010	3.17283	20.00000	Averaged
36	2-Butanone	250	207	0.19768	0.010	-17.33673	20.00000	Linear
37	1,1-Dichloropropene	50.00000	47.27283	0.34555	0.010	-5.45433	20.00000	Linear
38	Benzene	0.98260	1.01585	1.01585	0.010	3.38407	20.00000	Averaged
44	1,2-Dichloroethane	0.38812	0.38201	0.38201	0.010	-1.57424	20.00000	Averaged
47	Trichloroethene	0.23639	0.24950	0.24950	0.010	5.54665	20.00000	Averaged
49	Dibromomethane	0.14946	0.15524	0.15524	0.010	3.86343	20.00000	Averaged
50	1,2-Dichloropropane	50.00000	47.43639	0.26154	0.010	-5.12723	20.00000	Linear
51	Bromodichloromethane	0.32067	0.34580	0.34580	0.010	7.83544	20.00000	Averaged
57	cis-1,3-dichloropropene	50.00000	47.48607	0.46691	0.010	-5.02786	20.00000	Linear
59	Toluene	0.64240	0.67306	0.67306	0.010	4.77348	20.00000	Averaged
60	Tetrachloroethene	0.18489	0.19159	0.19159	0.010	3.62258	20.00000	Averaged
61	4-methyl-2-pentanone	250	213	0.28545	0.010	-14.60268	20.00000	Linear
62	trans-1,3-Dichloropropene	50.00000	46.68026	0.43015	0.010	-6.63947	20.00000	Linear
63	1,1,2-Trichloroethane	0.19824	0.20218	0.20218	0.010	1.98823	20.00000	Averaged
64	Dibromochloromethane	50.00000	48.55362	0.25988	0.010	-2.89275	20.00000	Linear
65	1,3-Dichloropropane	50.00000	47.95837	0.47498	0.010	-4.08326	20.00000	Linear
66	1,2-Dibromoethane	50.00000	46.21694	0.23869	0.010	-7.56611	20.00000	Linear
67	2-Hexanone	250	209	0.19161	0.010	-16.50946	20.00000	Linear
69	Chlorobenzene	0.73853	0.75932	0.75932	0.300	2.81549	20.00000	Averaged
71	Ethylbenzene	50.00000	47.10148	0.40490	0.010	-5.79704	20.00000	Linear
72	1,1,1,2-Tetrachloroethane	0.25045	0.26292	0.26292	0.010	4.97636	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225461-4
Lab File ID : P4926.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/27/18 08:00
Instrument ID: GCMS-P
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	100	93.97541	0.51674	0.010	-6.02459	20.00000	Linear
74 o-Xylene	50.00000	47.33127	0.47798	0.010	-5.33747	20.00000	Linear
75 Styrene	50.00000	46.49882	0.84291	0.010	-7.00237	20.00000	Linear
76 Bromoform	50.00000	45.34033	0.17291	0.100	-9.31934	20.00000	Linear
77 Isopropylbenzene	50.00000	47.48320	2.20277	0.010	-5.03359	20.00000	Linear
80 Bromobenzene	0.54629	0.56852	0.56852	0.010	4.06799	20.00000	Averaged
81 N-Propylbenzene	50.00000	48.40492	2.85468	0.010	-3.19017	20.00000	Linear
82 1,1,2,2-Tetrachloroethane	0.65758	0.62018	0.62018	0.300	-5.68665	20.00000	Averaged
83 2-Chlorotoluene	50.00000	46.93862	1.64050	0.010	-6.12275	20.00000	Linear
84 1,2,3-Trichloropropane	0.60022	0.56841	0.56841	0.010	-5.30064	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	46.64331	1.92767	0.010	-6.71337	20.00000	Linear
87 4-Chlorotoluene	50.00000	46.93523	1.77317	0.010	-6.12954	20.00000	Linear
88 tert-Butylbenzene	50.00000	46.46861	1.90544	0.010	-7.06278	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	47.41159	2.02881	0.010	-5.17682	20.00000	Linear
91 sec-Butylbenzene	50.00000	47.79205	2.40284	0.010	-4.41589	20.00000	Linear
92 P-Isopropyltoluene	50.00000	47.24074	2.00118	0.010	-5.51853	20.00000	Linear
93 1,3-Dichlorobenzene	1.06792	1.11240	1.11240	0.010	4.16475	20.00000	Averaged
95 1,4-Dichlorobenzene	1.16971	1.16520	1.16520	0.010	-0.38570	20.00000	Averaged
97 N-Butylbenzene	50.00000	47.42807	1.84069	0.010	-5.14386	20.00000	Linear
99 1,2-Dichlorobenzene	1.02098	1.05796	1.05796	0.010	3.62138	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	47.39713	0.11873	0.010	-5.20575	20.00000	Quadratic
102 Hexachlorobutadiene	0.20687	0.21999	0.21999	0.010	6.34310	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.22197	0.64144	0.010	-7.55605	20.00000	Linear
104 Naphthalene	50.00000	43.56779	1.58245	0.010	-12.86442	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	46.12057	0.54995	0.010	-7.75886	20.00000	Linear
34 Dibromofluoromethane	0.48565	0.47924	0.47924	0.010	-1.32039	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68629	0.65769	0.65769	0.010	-4.16698	20.00000	Averaged
58 Toluene-D8	1.23335	1.25437	1.25437	0.010	1.70376	20.00000	Averaged
78 P-Bromofluorobenzene	0.48820	0.50576	0.50576	0.010	3.59756	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225461-4
Lab File ID : P4926.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/27/18 08:00
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4926.D
Report Date: 04-Apr-2018 05:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4926.D
Lab Smp Id: WG225461-4 Client Smp ID: ontinuing Calibrati
Inj Date : 27-MAR-2018 08:00 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225461-4,SL2295
Misc Info : WG225461,WG225349-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

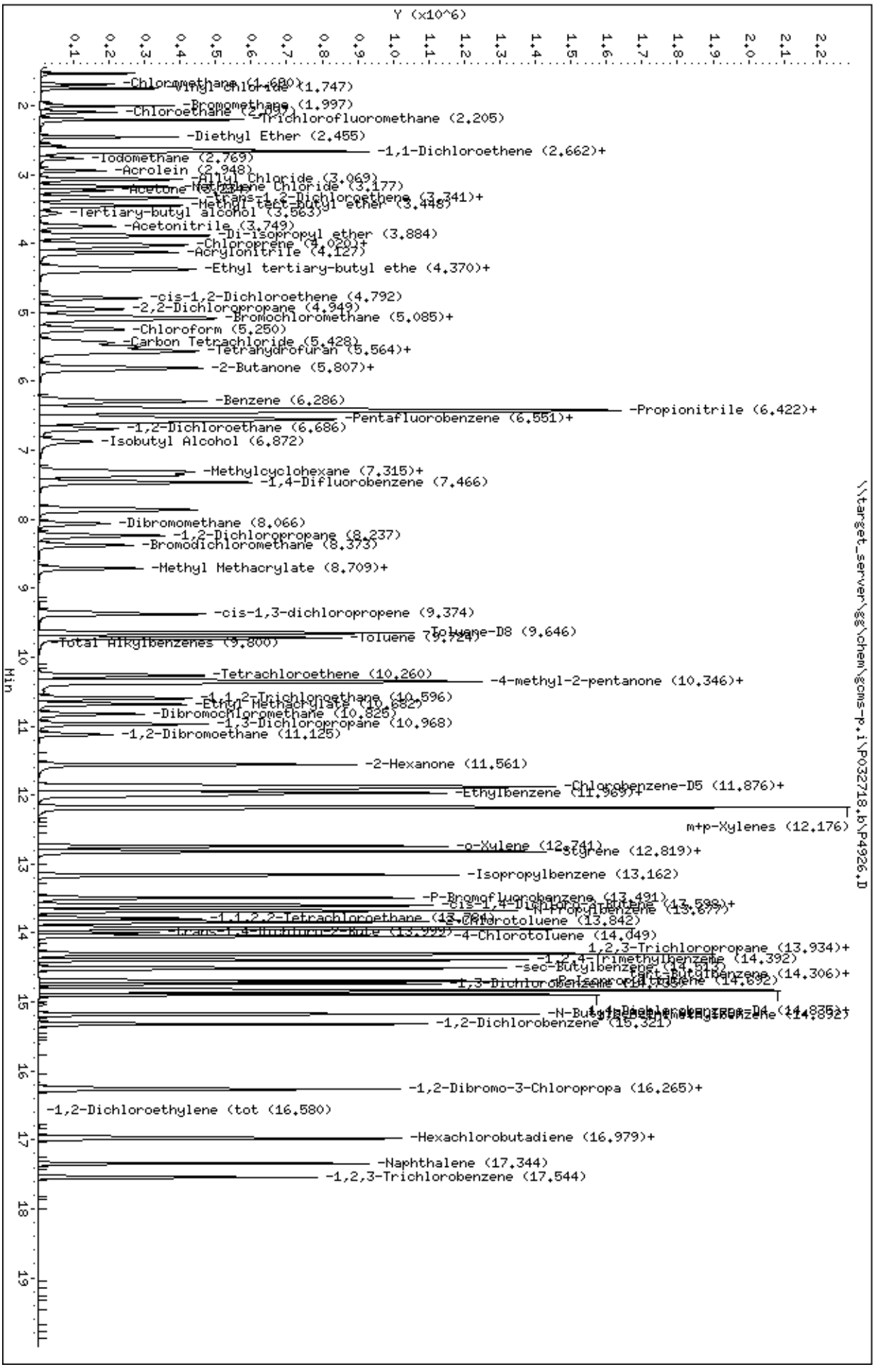
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.532	1.537	(0.234)	171938	50.0000	49.0	
2	Chloromethane	50	1.689	1.694	(0.259)	232388	50.0000	45.0	
3	Vinyl chloride	62	1.747	1.751	(0.267)	254625	50.0000	47.7	
4	Bromomethane	94	1.997	2.001	(0.306)	138115	50.0000	47.0	
5	Chloroethane	64	2.097	2.095	(0.321)	171550	50.0000	49.4	
6	Trichlorofluoromethane	101	2.204	2.209	(0.337)	412075	50.0000	52.3	
7	Diethyl Ether	59	2.454	2.459	(0.376)	186698	50.0000	48.2	
8	1,1-Dichloroethene	96	2.633	2.631	(0.403)	171874	50.0000	48.6	
9	Freon-113	151	2.662	2.659	(0.407)	146090	50.0000	48.6	
10	Carbon Disulfide	76	2.662	2.666	(0.407)	587282	50.0000	49.9	
11	Iodomethane	142	2.769	2.766	(0.424)	139823	50.0000	50.4	
12	Acrolein	56	2.947	2.945	(0.451)	172353	250.000	218	
13	Allyl Chloride	41	3.069	3.067	(0.470)	267414	50.0000	48.8	
14	Methylene Chloride	84	3.176	3.174	(0.486)	189126	50.0000	47.0	
15	Acetone	43	3.233	3.238	(0.495)	275518	250.000	213	
16	trans-1,2-Dichloroethene	96	3.333	3.338	(0.510)	170801	50.0000	45.9	
17	Methyl Acetate	43	3.355	3.360	(0.513)	155956	50.0000	42.2	
18	Methyl tert-butyl ether	73	3.455	3.453	(0.529)	463720	50.0000	42.8	
19	Tertiary-butyl alcohol	59	3.562	3.567	(0.545)	67483	250.000	196	
20	Acetonitrile	41	3.748	3.753	(0.573)	285997	500.000	444	
21	Di-isopropyl ether	45	3.884	3.889	(0.594)	557303	50.0000	44.4	
22	Chloroprene	53	4.013	4.017	(0.614)	278170	50.0000	46.1	
23	1,1-Dichloroethane	63	4.048	4.053	(0.619)	330069	50.0000	50.3	

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4926.D
Report Date: 04-Apr-2018 05:39

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	4.127	4.131	(0.631)	349348	250.000	240	
	25	Ethyl tertiary-butyl ether	59	4.370	4.368	(0.669)	488648	50.0000	44.6	
	26	Vinyl Acetate	43	4.391	4.396	(0.588)	397330	50.0000	44.4	
	27	cis-1,2-Dichloroethene	96	4.792	4.797	(0.733)	185705	50.0000	46.5	
	28	2,2-Dichloropropane	77	4.949	4.961	(0.757)	241483	50.0000	45.3	
	29	Bromochloromethane	128	5.099	5.104	(0.780)	91139	50.0000	55.7	
	30	Cyclohexane	56	5.078	5.082	(0.777)	303803	50.0000	46.7	
	31	Chloroform	83	5.242	5.247	(0.802)	315819	50.0000	49.5	
	32	Carbon Tetrachloride	117	5.428	5.440	(0.727)	232152	50.0000	52.5	
	33	Tetrahydrofuran	42	5.499	5.504	(0.841)	287159	250.000	203	
$	34	Dibromofluoromethane	113	5.564	5.561	(0.851)	216674	50.0000	49.3	
	35	1,1,1-Trichloroethane	97	5.564	5.576	(0.851)	281619	50.0000	51.6	
	36	2-Butanone	43	5.821	5.826	(0.891)	446867	250.000	207	
	37	1,1-Dichloropropene	75	5.800	5.812	(0.777)	249819	50.0000	47.3	
	38	Benzene	78	6.286	6.290	(0.842)	734416	50.0000	51.7	
	39	Propionitrile	54	6.393	6.398	(0.978)	324770	500.000	463	
	40	Methacrylonitrile	41	6.421	6.426	(0.983)	1361406	500.000	436	
*	41	Pentafluorobenzene	168	6.536	6.541	(1.000)	452122	50.0000		
$	42	1,2-Dichloroethane-D4	65	6.557	6.569	(1.003)	297356	50.0000	47.9	
	43	Tertiary-amyl methyl ether	73	6.564	6.569	(1.004)	450963	50.0000	48.9	
	44	1,2-Dichloroethane	62	6.686	6.691	(0.896)	276175	50.0000	49.2	
	45	Isobutyl Alcohol	43	6.865	6.877	(1.050)	148107	1000.00	892	
	46	Methylcyclohexane	83	7.308	7.313	(1.118)	294797	50.0000	48.1	
	47	Trichloroethene	95	7.358	7.363	(0.986)	180376	50.0000	52.8	
*	48	1,4-Difluorobenzene	114	7.465	7.470	(1.000)	722957	50.0000		
	49	Dibromomethane	93	8.058	8.070	(1.079)	112230	50.0000	51.9	
	50	1,2-Dichloropropane	63	8.237	8.242	(1.103)	189082	50.0000	47.4	
	51	Bromodichloromethane	83	8.380	8.385	(1.123)	249998	50.0000	53.9	
	52	Methyl Methacrylate	41	8.709	8.714	(1.167)	164810	50.0000	42.3	
	53	Ethyl Methacrylate	69	10.682	10.686	(1.431)	252719	50.0000	43.7	
	54	1,4-Dioxane	88	8.716	8.721	(1.168)	44919	1000.00	950	
M	55	Total Alkylbenzenes	100				6061396	50.0000	331	
	57	cis-1,3-dichloropropene	75	9.374	9.378	(1.256)	337554	50.0000	47.5	
$	58	Toluene-D8	98	9.645	9.650	(1.292)	906853	50.0000	50.8	
	59	Toluene	92	9.724	9.729	(1.303)	486595	50.0000	52.4	
	60	Tetrachloroethene	164	10.260	10.272	(0.864)	142441	50.0000	51.8	
	61	4-methyl-2-pentanone	43	10.346	10.351	(1.386)	1031842	250.000	213	
	62	trans-1,3-Dichloropropene	75	10.374	10.379	(1.390)	310980	50.0000	46.7	
	63	1,1,2-Trichloroethane	83	10.596	10.601	(1.419)	146171	50.0000	51.0	
	64	Dibromochloromethane	129	10.825	10.829	(0.912)	193209	50.0000	48.6	
	65	1,3-Dichloropropane	76	10.968	10.972	(0.924)	353131	50.0000	48.0	
	66	1,2-Dibromoethane	107	11.125	11.130	(1.490)	172561	50.0000	46.2	
	67	2-Hexanone	43	11.561	11.559	(0.974)	712273	250.000	209	
*	68	Chlorobenzene-D5	117	11.868	11.873	(1.000)	743462	50.0000		
	69	Chlorobenzene	112	11.890	11.894	(1.002)	564529	50.0000	51.4	
	70	1-Chlorohexane	91	11.918	11.923	(1.004)	251511	50.0000	42.1	
	71	Ethylbenzene	106	11.968	11.973	(1.008)	301030	50.0000	47.1	
	72	1,1,1,2-Tetrachloroethane	131	12.004	12.009	(1.011)	195469	50.0000	52.5	
	73	m+p-Xylenes	106	12.176	12.180	(1.026)	768357	100.000	94.0	
	74	o-Xylene	106	12.740	12.745	(1.073)	355362	50.0000	47.3	
	75	Styrene	104	12.819	12.824	(1.080)	626673	50.0000	46.5	
	76	Bromoform	173	12.819	12.824	(1.080)	128549	50.0000	45.3	
	77	Isopropylbenzene	105	13.162	13.167	(0.888)	892427	50.0000	47.5	
$	78	P-Bromofluorobenzene	95	13.491	13.496	(1.807)	365642	50.0000	51.8	

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4926.D
Report Date: 04-Apr-2018 05:39

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79	cis-1,4-Dichloro-2-Butene	53	13.605	13.610	(0.918)	96552	50.0000	44.1	
	80	Bromobenzene	156	13.598	13.603	(0.917)	230328	50.0000	52.0	
	81	N-Propylbenzene	91	13.677	13.681	(0.922)	1156539	50.0000	48.4	
	82	1,1,2,2-Tetrachloroethane	83	13.784	13.789	(0.930)	251259	50.0000	47.2	
	83	2-Chlorotoluene	91	13.841	13.846	(0.933)	664627	50.0000	46.9	
	84	1,2,3-Trichloropropane	75	13.920	13.925	(0.939)	230284	50.0000	47.3	
	85	1,3,5-Trimethylbenzene	105	13.934	13.939	(0.940)	780974	50.0000	46.6	
	86	trans-1,4-Dichloro-2-Butene	53	13.998	13.996	(0.944)	81234	50.0000	48.9	
	87	4-Chlorotoluene	91	14.048	14.046	(0.947)	718379	50.0000	46.9	
	88	tert-Butylbenzene	119	14.298	14.303	(0.964)	771967	50.0000	46.5	
	89	Pentachloroethane	165	14.313	14.311	(0.965)	113366	50.0000	53.5	
	90	1,2,4-Trimethylbenzene	105	14.391	14.396	(0.971)	821947	50.0000	47.4	
	91	sec-Butylbenzene	105	14.513	14.518	(0.979)	973483	50.0000	47.8	
	92	P-Isopropyltoluene	119	14.692	14.697	(0.991)	810754	50.0000	47.2	
	93	1,3-Dichlorobenzene	146	14.735	14.739	(0.994)	450675	50.0000	52.1	
*	94	1,4-Dichlorobenzene-D4	152	14.827	14.832	(1.000)	405138	50.0000		
	95	1,4-Dichlorobenzene	146	14.842	14.847	(1.001)	472068	50.0000	49.8	
	96	1,2,3-Trimethylbenzene	105	14.892	14.897	(1.004)	871528	50.0000	47.6	
	97	N-Butylbenzene	91	15.178	15.183	(1.024)	745732	50.0000	47.4	
M	98	1,2-Dichloroethylene (total)	96				356506	50.0000	92.4	
	99	1,2-Dichlorobenzene	146	15.321	15.326	(1.033)	428619	50.0000	51.8	
	100	1,2-Dibromo-3-Chloropropane	75	16.236	16.239	(1.095)	48104	50.0000	47.4	
	101	1,3,5-Trichlorobenzene	180	16.264	16.268	(1.097)	300926	50.0000	48.4	
	102	Hexachlorobutadiene	225	16.965	16.969	(1.144)	89128	50.0000	53.2	
	103	1,2,4-Trichlorobenzene	180	16.986	16.991	(1.146)	259871	50.0000	46.2	
	104	Naphthalene	128	17.344	17.347	(1.170)	641110	50.0000	43.6	
	105	1,2,3-Trichlorobenzene	180	17.544	17.549	(1.183)	222806	50.0000	46.1	
M	106	Xylenes (total)	106				1123719	150.000	141	


Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4926.D
Date : 27-MAR-2018 08:00
Client ID: ontinuing Calibrati
Sample Info: WG225461-4,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032718.b\P4926.D
Y (x10^6)
Min
-Chloromethane (1.680)
-Vinyl Chloride (1.747)
-Bromomethane (1.997)
-Chloroethane (2.049)
-Trichlorofluoromethane (2.205)
-Diethyl Ether (2.455)
-1,1-Dichloroethene (2.662)+
-Iodomethane (2.769)
-Acrolein (2.948)
-Allyl Chloride (3.069)
-Methylene Chloride (3.177)
-Acetone (3.248)
-trans-1,2-Dichloroethene (3.341)+
-Methyl tert-Butyl ether (3.448)
-Tertiary-butyl alcohol (3.563)
-Acetonitrile (3.749)
-Di-isopropyl ether (3.884)
-Chloroprene (4.020)+
-Acrylonitrile (4.127)
-Ethyl tertiary-butyl ethe (4.370)+
-cis-1,2-Dichloroethene (4.792)
-2,2-Dichloropropane (4.949)
-Bromochloromethane (5.085)+
-Chloroform (5.250)
-Carbon Tetrachloride (5.428)
-Tetrahydrofuran (5.564)+
-2-Butanone (5.807)+
-Benzene (6.286)
-Propionitrile (6.422)+
-Pentafluorobenzene (6.551)+
-1,2-Dichloroethane (6.686)
-Isobutyl Alcohol (6.872)
-Methylcyclohexane (7.315)+
-1,4-Difluorobenzene (7.466)
-Dibromomethane (8.066)
-1,2-Dichloropropane (8.237)
-Bromodichloromethane (8.373)
-Methyl Methacrylate (8.709)+
-cis-1,3-dichloropropene (9.374)
Toluene-D8 (9.646)
-Toluene (9.724)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.260)
-4-methyl-2-pentanone (10.346)+
-1,1,2-Trichloroethane (10.596)
-Ethyl Methacrylate (10.682)
-Dibromochloromethane (10.825)
-1,3-Dichloropropane (10.968)
-1,2-Dibromoethane (11.125)
-2-Hexanone (11.561)
-Chlorobenzene-D5 (11.876)+
-Ethylbenzene (11.969)+
m+p-Xylenes (12.176)
-o-Xylene (12.741)
-Styrene (12.819)+
-Isopropylbenzene (13.162)
-P-Bromofluorobenzene (13.491)
-cis-1,4-Dichloro-2-Butene (13.598)+
-n-Propylbenzene (13.677)
-1,1,2,2-Tetrachloroethane (13.784)
-2-Chlorotoluene (13.842)
-trans-1,4-Dichloro-2-Bute (13.999)
-4-Chlorotoluene (14.049)
1,2,3-Trichloropropane (13.934)+
-1,2,4-Trimethylbenzene (14.392)
-sec-Butylbenzene (14.513)
-tert-Butylbenzene (14.306)+
-1,3-Dichlorobenzene (14.635)
-N-Butylbenzene (14.892)
-1,2-Dichlorobenzene (15.321)
-1,2-Dibromo-3-Chloropropa (16.265)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.979)+
-Naphthalene (17.344)
-1,2,3-Trichlorobenzene (17.544)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225461-5
Analytical Date: 03/27/18 19:24
Lab File ID : P4945.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18
Column ID:

	Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.38805	0.33831	0.33831	0.010	-12.81771	20.00000	Averaged	
2	Chloromethane	0.57151	0.51679	0.51679	0.100	-9.57497	20.00000	Averaged	
3	Vinyl chloride	0.59007	0.53609	0.53609	0.010	-9.14674	20.00000	Averaged	
4	Bromomethane	0.32478	0.29602	0.29602	0.010	-8.85417	20.00000	Averaged	
5	Chloroethane	0.38436	0.37834	0.37834	0.010	-1.56583	20.00000	Averaged	
6	Trichlorofluoromethane	0.87177	0.89086	0.89086	0.010	2.19019	20.00000	Averaged	
8	1,1-Dichloroethene	0.39118	0.36435	0.36435	0.100	-6.85827	20.00000	Averaged	
9	Freon-113	0.33232	0.30443	0.30443	0.010	-8.39306	20.00000	Averaged	
10	Carbon Disulfide	1.30176	1.25506	1.25506	0.010	-3.58730	20.00000	Averaged	
14	Methylene Chloride	0.44482	0.39784	0.39784	0.010	-10.56086	20.00000	Averaged	
15	Acetone	0.14318	0.11142	0.11142	0.010	-22.18162	20.00000	Averaged	*
16	trans-1,2-Dichloroethene	50.00000	42.99918	0.35404	0.010	-14.00163	20.00000	Linear	
18	Methyl tert-butyl ether	50.00000	39.71458	0.94948	0.010	-20.57084	20.00000	Linear	*
23	1,1-Dichloroethane	0.72583	0.70371	0.70371	0.100	-3.04742	20.00000	Averaged	
27	cis-1,2-Dichloroethene	50.00000	44.59729	0.39364	0.010	-10.80542	20.00000	Linear	
28	2,2-Dichloropropane	50.00000	36.81883	0.43242	0.010	-26.36234	20.00000	Linear	*
29	Bromochloromethane	50.00000	52.02340	0.18865	0.010	4.04681	20.00000	Linear	
31	Chloroform	0.70534	0.67949	0.67949	0.010	-3.66526	20.00000	Averaged	
32	Carbon Tetrachloride	0.30566	0.30572	0.30572	0.010	0.01814	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.60373	0.59239	0.59239	0.010	-1.87774	20.00000	Averaged	
36	2-Butanone	250	192	0.18333	0.010	-23.18715	20.00000	Linear	*
37	1,1-Dichloropropene	50.00000	44.37297	0.32372	0.010	-11.25407	20.00000	Linear	
38	Benzene	0.98260	0.95707	0.95707	0.010	-2.59755	20.00000	Averaged	
44	1,2-Dichloroethane	0.38812	0.37116	0.37116	0.010	-4.36971	20.00000	Averaged	
47	Trichloroethene	0.23639	0.24022	0.24022	0.010	1.62206	20.00000	Averaged	
49	Dibromomethane	0.14946	0.14930	0.14930	0.010	-0.11047	20.00000	Averaged	
50	1,2-Dichloropropane	50.00000	44.97762	0.24765	0.010	-10.04477	20.00000	Linear	
51	Bromodichloromethane	0.32067	0.32534	0.32534	0.010	1.45587	20.00000	Averaged	
57	cis-1,3-dichloropropene	50.00000	43.28184	0.42395	0.010	-13.43631	20.00000	Linear	
59	Toluene	0.64240	0.64446	0.64446	0.010	0.32176	20.00000	Averaged	
60	Tetrachloroethene	0.18489	0.18501	0.18501	0.010	0.06045	20.00000	Averaged	
61	4-methyl-2-pentanone	250	200	0.26677	0.010	-19.87379	20.00000	Linear	
62	trans-1,3-Dichloropropene	50.00000	43.64337	0.40092	0.010	-12.71325	20.00000	Linear	
63	1,1,2-Trichloroethane	0.19824	0.19223	0.19223	0.010	-3.03382	20.00000	Averaged	
64	Dibromochloromethane	50.00000	45.17245	0.24137	0.010	-9.65511	20.00000	Linear	
65	1,3-Dichloropropane	50.00000	45.35542	0.44900	0.010	-9.28916	20.00000	Linear	
66	1,2-Dibromoethane	50.00000	43.63376	0.22495	0.010	-12.73247	20.00000	Linear	
67	2-Hexanone	250	193	0.17670	0.010	-22.66312	20.00000	Linear	*
69	Chlorobenzene	0.73853	0.72956	0.72956	0.300	-1.21541	20.00000	Averaged	
71	Ethylbenzene	50.00000	45.37136	0.38970	0.010	-9.25729	20.00000	Linear	
72	1,1,1,2-Tetrachloroethane	0.25045	0.25320	0.25320	0.010	1.09706	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225461-5
Lab File ID : P4945.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/27/18 19:24
Instrument ID: GCMS-P
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	100	89.79117	0.49300	0.010	-10.20883	20.00000	Linear
74 o-Xylene	50.00000	44.93328	0.45278	0.010	-10.13344	20.00000	Linear
75 Styrene	50.00000	43.96149	0.79457	0.010	-12.07703	20.00000	Linear
76 Bromoform	50.00000	44.09291	0.16791	0.100	-11.81418	20.00000	Linear
77 Isopropylbenzene	50.00000	44.82391	2.07560	0.010	-10.35218	20.00000	Linear
80 Bromobenzene	0.54629	0.55253	0.55253	0.010	1.14058	20.00000	Averaged
81 N-Propylbenzene	50.00000	46.30495	2.72948	0.010	-7.39010	20.00000	Linear
82 1,1,2,2-Tetrachloroethane	0.65758	0.60470	0.60470	0.300	-8.04143	20.00000	Averaged
83 2-Chlorotoluene	50.00000	45.81655	1.60042	0.010	-8.36691	20.00000	Linear
84 1,2,3-Trichloropropane	0.60022	0.54114	0.54114	0.010	-9.84347	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	44.53286	1.83765	0.010	-10.93429	20.00000	Linear
87 4-Chlorotoluene	50.00000	45.11091	1.70284	0.010	-9.77818	20.00000	Linear
88 tert-Butylbenzene	50.00000	44.09427	1.80438	0.010	-11.81146	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	45.28632	1.93537	0.010	-9.42735	20.00000	Linear
91 sec-Butylbenzene	50.00000	45.55169	2.28768	0.010	-8.89663	20.00000	Linear
92 P-Isopropyltoluene	50.00000	45.13586	1.90873	0.010	-9.72827	20.00000	Linear
93 1,3-Dichlorobenzene	1.06792	1.07130	1.07130	0.010	0.31664	20.00000	Averaged
95 1,4-Dichlorobenzene	1.16971	1.12897	1.12897	0.010	-3.48369	20.00000	Averaged
97 N-Butylbenzene	50.00000	44.74597	1.73305	0.010	-10.50806	20.00000	Linear
99 1,2-Dichlorobenzene	1.02098	1.02448	1.02448	0.010	0.34264	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	44.61987	0.11152	0.010	-10.76027	20.00000	Quadratic
102 Hexachlorobutadiene	0.20687	0.20008	0.20008	0.010	-3.28230	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	43.91489	0.60840	0.010	-12.17023	20.00000	Linear
104 Naphthalene	50.00000	40.81540	1.47813	0.010	-18.36921	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	44.68052	0.53260	0.010	-10.63896	20.00000	Linear
34 Dibromofluoromethane	0.48565	0.49419	0.49419	0.010	1.75866	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68629	0.68135	0.68135	0.010	-0.72005	20.00000	Averaged
58 Toluene-D8	1.23335	1.23898	1.23898	0.010	0.45588	20.00000	Averaged
78 P-Bromofluorobenzene	0.48820	0.50034	0.50034	0.010	2.48832	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225461-5
Lab File ID : P4945.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/27/18 19:24
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4945.D
Report Date: 04-Apr-2018 05:21

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4945.D
Lab Smp Id: WG225461-5
Inj Date : 27-MAR-2018 19:24 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225461-5,SL2295
Misc Info : WG225461,WG225349-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 12 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

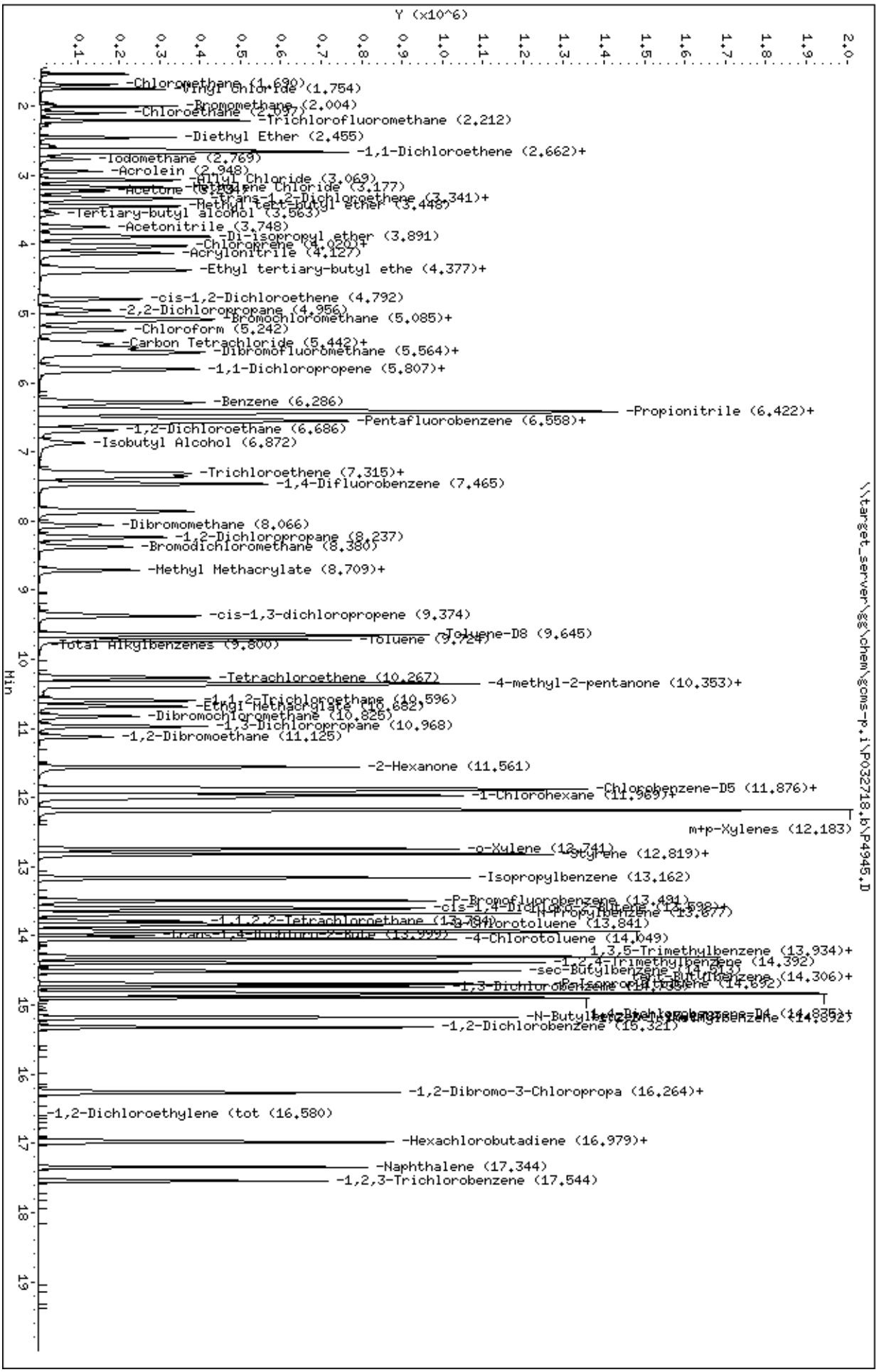
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.539	1.537	(0.236)	139345	50.0000	43.6	
2	Chloromethane	50	1.689	1.694	(0.259)	212859	50.0000	45.2	
3	Vinyl chloride	62	1.754	1.751	(0.268)	220809	50.0000	45.4	
4	Bromomethane	94	2.004	2.001	(0.307)	121926	50.0000	45.6	
5	Chloroethane	64	2.097	2.095	(0.321)	155834	50.0000	49.2	
6	Trichlorofluoromethane	101	2.211	2.209	(0.338)	366933	50.0000	51.1	
7	Diethyl Ether	59	2.454	2.459	(0.376)	161633	50.0000	45.8	
19	Tertiary-butyl alcohol	59	3.562	3.567	(0.545)	49372	250.000	160	
8	1,1-Dichloroethene	96	2.633	2.631	(0.403)	150070	50.0000	46.6	
10	Carbon Disulfide	76	2.669	2.666	(0.408)	516942	50.0000	48.2	
9	Freon-113	151	2.661	2.659	(0.407)	125389	50.0000	45.8	
11	Iodomethane	142	2.769	2.766	(0.424)	126860	50.0000	50.2	
12	Acrolein	56	2.947	2.945	(0.451)	139652	250.000	194	
14	Methylene Chloride	84	3.176	3.174	(0.486)	163865	50.0000	44.7	
15	Acetone	43	3.233	3.238	(0.495)	229460	250.000	194	
45	Isobutyl Alcohol	43	6.872	6.877	(1.051)	101944	1000.00	691	
16	trans-1,2-Dichloroethene	96	3.333	3.338	(0.510)	145825	50.0000	43.0	
13	Allyl Chloride	41	3.069	3.067	(0.470)	227930	50.0000	45.6	
18	Methyl tert-butyl ether	73	3.448	3.453	(0.528)	391075	50.0000	39.7	
20	Acetonitrile	41	3.748	3.753	(0.573)	233544	500.000	398	
21	Di-isopropyl ether	45	3.884	3.889	(0.594)	479494	50.0000	42.0	
22	Chloroprene	53	4.012	4.017	(0.614)	243259	50.0000	44.3	
39	Propionitrile	54	6.393	6.398	(0.978)	270464	500.000	423	

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4945.D
Report Date: 04-Apr-2018 05:21

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	6.421	6.426	(0.983)	1198283	500.000	422	
	23	1,1-Dichloroethane	63	4.048	4.053	(0.619)	289848	50.0000	48.5	
	24	Acrylonitrile	52	4.134	4.131	(0.633)	294002	250.000	222	
	25	Ethyl tertiary-butyl ether	59	4.363	4.368	(0.668)	408318	50.0000	41.0	
	26	Vinyl Acetate	43	4.398	4.396	(0.589)	337566	50.0000	40.4	
	27	cis-1,2-Dichloroethene	96	4.791	4.797	(0.733)	162135	50.0000	44.6	
M	98	1,2-Dichloroethylene (total)	96				307960	50.0000	87.6	
	52	Methyl Methacrylate	41	8.709	8.714	(1.167)	142642	50.0000	39.4	
	28	2,2-Dichloropropane	77	4.956	4.961	(0.758)	178107	50.0000	36.8	
	29	Bromochloromethane	128	5.099	5.104	(0.780)	77704	50.0000	52.0	
	31	Chloroform	83	5.242	5.247	(0.802)	279872	50.0000	48.2	
	32	Carbon Tetrachloride	117	5.442	5.440	(0.729)	206320	50.0000	50.0	
	33	Tetrahydrofuran	42	5.499	5.504	(0.841)	244065	250.000	190	
$	34	Dibromofluoromethane	113	5.563	5.561	(0.851)	203550	50.0000	50.9	
	35	1,1,1-Trichloroethane	97	5.571	5.576	(0.852)	243997	50.0000	49.1	
	37	1,1-Dichloropropene	75	5.799	5.812	(0.777)	218468	50.0000	44.4	
	36	2-Butanone	43	5.814	5.826	(0.890)	377547	250.000	192	
	38	Benzene	78	6.293	6.290	(0.843)	645903	50.0000	48.7	
*	41	Pentafluorobenzene	168	6.536	6.541	(1.000)	411885	50.0000		
	30	Cyclohexane	56	5.070	5.082	(0.776)	256718	50.0000	43.4	
	53	Ethyl Methacrylate	69	10.681	10.686	(1.431)	214372	50.0000	40.0	
$	42	1,2-Dichloroethane-D4	65	6.557	6.569	(1.003)	280636	50.0000	49.6	
	43	Tertiary-amyl methyl ether	73	6.564	6.569	(1.004)	382382	50.0000	45.5	
	44	1,2-Dichloroethane	62	6.686	6.691	(0.896)	250484	50.0000	47.8	
	47	Trichloroethene	95	7.358	7.363	(0.986)	162118	50.0000	50.8	
*	48	1,4-Difluorobenzene	114	7.465	7.470	(1.000)	674872	50.0000		
	49	Dibromomethane	93	8.065	8.070	(1.080)	100757	50.0000	49.9	
	50	1,2-Dichloropropane	63	8.237	8.242	(1.103)	167135	50.0000	45.0	
	51	Bromodichloromethane	83	8.380	8.385	(1.123)	219564	50.0000	50.7	
	57	cis-1,3-dichloropropene	75	9.373	9.378	(1.256)	286112	50.0000	43.3	
	54	1,4-Dioxane	88	8.716	8.721	(1.168)	27794	1000.00	630	
$	58	Toluene-D8	98	9.645	9.650	(1.292)	836150	50.0000	50.2	
	59	Toluene	92	9.724	9.729	(1.303)	434931	50.0000	50.2	
	61	4-methyl-2-pentanone	43	10.345	10.351	(1.386)	900178	250.000	200	
	60	Tetrachloroethene	164	10.267	10.272	(0.865)	128030	50.0000	50.0	
	62	trans-1,3-Dichloropropene	75	10.374	10.379	(1.390)	270568	50.0000	43.6	
	63	1,1,2-Trichloroethane	83	10.596	10.601	(1.419)	129730	50.0000	48.5	
	64	Dibromochloromethane	129	10.832	10.829	(0.913)	167037	50.0000	45.2	
	65	1,3-Dichloropropane	76	10.967	10.972	(0.924)	310725	50.0000	45.4	
	66	1,2-Dibromoethane	107	11.125	11.130	(1.490)	151814	50.0000	43.6	
	67	2-Hexanone	43	11.561	11.559	(0.974)	611413	250.000	193	
*	68	Chlorobenzene-D5	117	11.868	11.873	(1.000)	692034	50.0000		
	69	Chlorobenzene	112	11.889	11.894	(1.002)	504877	50.0000	49.4	
	70	1-Chlorohexane	91	11.925	11.923	(1.005)	253399	50.0000	45.5	
	71	Ethylbenzene	106	11.968	11.973	(1.008)	269687	50.0000	45.4	
	72	1,1,1,2-Tetrachloroethane	131	12.004	12.009	(1.011)	175224	50.0000	50.5	
M	106	Xylenes (total)	106				995687	150.000	135	
	73	m+p-Xylenes	106	12.182	12.180	(1.026)	682351	100.000	89.8	
	74	o-Xylene	106	12.740	12.745	(1.073)	313336	50.0000	44.9	
	75	Styrene	104	12.819	12.824	(1.080)	549869	50.0000	44.0	
	76	Bromoform	173	12.819	12.824	(1.080)	116200	50.0000	44.1	
	77	Isopropylbenzene	105	13.162	13.167	(0.888)	775469	50.0000	44.8	
$	78	P-Bromofluorobenzene	95	13.491	13.496	(1.807)	337668	50.0000	51.2	
	79	cis-1,4-Dichloro-2-Butene	53	13.605	13.610	(0.918)	81555	50.0000	40.5	

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4945.D
Report Date: 04-Apr-2018 05:21

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	86	trans-1,4-Dichloro-2-Butene	53	13.998	13.996	(0.944)	61615	50.0000	40.2	
	80	Bromobenzene	156	13.598	13.603	(0.917)	206430	50.0000	50.6	
	81	N-Propylbenzene	91	13.676	13.681	(0.922)	1019766	50.0000	46.3	
	82	1,1,2,2-Tetrachloroethane	83	13.784	13.789	(0.930)	225922	50.0000	46.0	
	85	1,3,5-Trimethylbenzene	105	13.934	13.939	(0.940)	686569	50.0000	44.5	
	83	2-Chlorotoluene	91	13.841	13.846	(0.933)	597937	50.0000	45.8	
	84	1,2,3-Trichloropropane	75	13.919	13.925	(0.939)	202177	50.0000	45.1	
	87	4-Chlorotoluene	91	14.048	14.046	(0.947)	636202	50.0000	45.1	
	88	tert-Butylbenzene	119	14.305	14.303	(0.965)	674139	50.0000	44.1	
	89	Pentachloroethane	165	14.313	14.311	(0.965)	95639	50.0000	48.9	
	90	1,2,4-Trimethylbenzene	105	14.391	14.396	(0.971)	723079	50.0000	45.3	
	92	P-Isopropyltoluene	119	14.691	14.697	(0.991)	713125	50.0000	45.1	
	93	1,3-Dichlorobenzene	146	14.734	14.739	(0.994)	400252	50.0000	50.2	
*	94	1,4-Dichlorobenzene-D4	152	14.827	14.832	(1.000)	373612	50.0000		
	95	1,4-Dichlorobenzene	146	14.842	14.847	(1.001)	421795	50.0000	48.2	
	97	N-Butylbenzene	91	15.178	15.183	(1.024)	647487	50.0000	44.7	
	91	sec-Butylbenzene	105	14.513	14.518	(0.979)	854703	50.0000	45.6	
	99	1,2-Dichlorobenzene	146	15.320	15.326	(1.033)	382759	50.0000	50.2	
	100	1,2-Dibromo-3-Chloropropane	75	16.243	16.239	(1.095)	41667	50.0000	44.6	
	101	1,3,5-Trichlorobenzene	180	16.264	16.268	(1.097)	263113	50.0000	46.0	
	102	Hexachlorobutadiene	225	16.965	16.969	(1.144)	74753	50.0000	48.4	
	103	1,2,4-Trichlorobenzene	180	16.986	16.991	(1.146)	227304	50.0000	43.9	
	96	1,2,3-Trimethylbenzene	105	14.892	14.897	(1.004)	768963	50.0000	45.6	
	104	Naphthalene	128	17.343	17.347	(1.170)	552247	50.0000	40.8	
	105	1,2,3-Trichlorobenzene	180	17.543	17.549	(1.183)	198985	50.0000	44.7	
	17	Methyl Acetate	43	3.355	3.360	(0.513)	137204	50.0000	40.8	
	46	Methylcyclohexane	83	7.308	7.313	(1.118)	246745	50.0000	44.3	
M	55	Total Alkylbenzenes	100				5318868	50.0000	316	


Y (x10^6)
Min
-Chloromethane (1.690)
-Vinyl Chloride (1.754)
-Bromomethane (2.004)
-Chloroethane (2.097)
-Trichlorofluoromethane (2.212)
-Diethyl Ether (2.455)
-1,1-Dichloroethene (2.662)+
-Iodomethane (2.769)
-Acrolein (2.948)
-Allyl Chloride (3.069)
-Methylene Chloride (3.177)
-Acetone (3.234)
-trans-1,2-Dichloroethene (3.341)+
-Methyl tert-butyl ether (3.448)
-Tertiary-butyl alcohol (3.563)
-Acetonitrile (3.748)
-Di-isopropyl ether (3.891)
-Chloroprene (4.020)+
-Acrylonitrile (4.127)
-Ethyl tertiary-butyl ethe (4.377)+
-cis-1,2-Dichloroethene (4.792)
-2,2-Dichloropropane (4.956)
-Bromochloromethane (5.085)+
-Chloroform (5.242)
-Carbon Tetrachloride (5.442)+
-Dibromofluoromethane (5.564)+
-1,1-Dichloropropene (5.807)+
-Benzene (6.286)
-Propionitrile (6.422)+
-Pentafluorobenzene (6.558)+
-1,2-Dichloroethane (6.686)
-Isobutyl Alcohol (6.872)
-Trichloroethene (7.315)+
-1,4-Difluorobenzene (7.465)
-Dibromomethane (8.066)
-1,2-Dichloropropane (8.237)
-Bromodichloromethane (8.380)
-Methyl Methacrylate (8.709)+
-cis-1,3-dichloropropene (9.374)
-Toluene-D8 (9.645)
-Total Alkylbenzenes (9.800)
-Toluene (9.724)
-Tetrachloroethene (10.267)
-4-methyl-2-pentanone (10.353)+
-1,1,2-Trichloroethane (10.596)
-Ethyl Methacrylate (10.682)
-Dibromochloromethane (10.825)
-1,3-Dichloropropane (10.968)
-1,2-Dibromoethane (11.125)
-2-Hexanone (11.561)
-Chlorobenzene-D5 (11.876)+
-1-Chlorohexane (11.969)+
m+p-Xylenes (12.183)
-o-Xylene (12.741)
-Styrene (12.819)+
-Isopropylbenzene (13.162)
-P-Bromofluorobenzene (13.491)
-cis-1,4-Dichloro-2-Butene (13.698)+
-n-Propylbenzene (13.677)
-1,1,2,2-Tetrachloroethane (13.784)
-2-Chlorotoluene (13.841)
-trans-1,4-Dichloro-2-Bute (13.999)
-4-Chlorotoluene (14.049)
-1,3,5-Trimethylbenzene (13.934)+
-1,2,4-Trimethylbenzene (14.392)
-sec-Butylbenzene (14.513)
-tert-Butylbenzene (14.306)+
-1,3-Dichlorobenzene (14.635)
-N-Butylbenzene (14.892)
-1,2-Dichlorobenzene (15.321)
-1,2-Dibromo-3-Chloropropa (16.264)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.979)+
-Naphthalene (17.344)
-1,2,3-Trichlorobenzene (17.544)
\\target_server\gg\chem\gcms-p.i\P032718.b\P4945.D
Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4945.D
Date : 27-MAR-2018 19:24
Client ID:
Sample Info: WG225461-5,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225530-4
Analytical Date: 03/28/18 09:07
Lab File ID : P4965.D
Instrument ID: GCMS-P
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.38805	0.34025	0.34025	0.010	-12.31808	20.00000	Averaged
2	Chloromethane	0.57151	0.53606	0.53606	0.100	-6.20378	20.00000	Averaged
3	Vinyl chloride	0.59007	0.56402	0.56402	0.010	-4.41352	20.00000	Averaged
4	Bromomethane	0.32478	0.27923	0.27923	0.010	-14.02315	20.00000	Averaged
5	Chloroethane	0.38436	0.37687	0.37687	0.010	-1.94799	20.00000	Averaged
6	Trichlorofluoromethane	0.87177	0.86171	0.86171	0.010	-1.15386	20.00000	Averaged
8	1,1-Dichloroethene	0.39118	0.37850	0.37850	0.100	-3.24094	20.00000	Averaged
9	Freon-113	0.33232	0.30925	0.30925	0.010	-6.94208	20.00000	Averaged
10	Carbon Disulfide	1.30176	1.28580	1.28580	0.010	-1.22655	20.00000	Averaged
14	Methylene Chloride	0.44482	0.43152	0.43152	0.010	-2.98901	20.00000	Averaged
15	Acetone	0.14318	0.13230	0.13230	0.010	-7.59699	20.00000	Averaged
16	trans-1,2-Dichloroethene	50.00000	47.76636	0.39353	0.010	-4.46727	20.00000	Linear
18	Methyl tert-butyl ether	50.00000	44.85465	1.07625	0.010	-10.29069	20.00000	Linear
23	1,1-Dichloroethane	0.72583	0.74177	0.74177	0.100	2.19576	20.00000	Averaged
27	cis-1,2-Dichloroethene	50.00000	46.69264	0.41253	0.010	-6.61472	20.00000	Linear
28	2,2-Dichloropropane	50.00000	49.08734	0.57942	0.010	-1.82533	20.00000	Linear
29	Bromochloromethane	50.00000	53.09275	0.19245	0.010	6.18550	20.00000	Linear
31	Chloroform	0.70534	0.70984	0.70984	0.010	0.63688	20.00000	Averaged
32	Carbon Tetrachloride	0.30566	0.31523	0.31523	0.010	3.13186	20.00000	Averaged
35	1,1,1-Trichloroethane	0.60373	0.61588	0.61588	0.010	2.01320	20.00000	Averaged
36	2-Butanone	250	210	0.20105	0.010	-15.96137	20.00000	Linear
37	1,1-Dichloropropene	50.00000	47.18834	0.34492	0.010	-5.62332	20.00000	Linear
38	Benzene	0.98260	1.01744	1.01744	0.010	3.54592	20.00000	Averaged
44	1,2-Dichloroethane	0.38812	0.36952	0.36952	0.010	-4.79164	20.00000	Averaged
47	Trichloroethene	0.23639	0.24329	0.24329	0.010	2.92031	20.00000	Averaged
49	Dibromomethane	0.14946	0.14904	0.14904	0.010	-0.28386	20.00000	Averaged
50	1,2-Dichloropropane	50.00000	47.01568	0.25916	0.010	-5.96863	20.00000	Linear
51	Bromodichloromethane	0.32067	0.33705	0.33705	0.010	5.10784	20.00000	Averaged
57	cis-1,3-dichloropropene	50.00000	47.61925	0.46827	0.010	-4.76149	20.00000	Linear
59	Toluene	0.64240	0.65346	0.65346	0.010	1.72166	20.00000	Averaged
60	Tetrachloroethene	0.18489	0.18654	0.18654	0.010	0.88981	20.00000	Averaged
61	4-methyl-2-pentanone	250	207	0.27612	0.010	-17.23653	20.00000	Linear
62	trans-1,3-Dichloropropene	50.00000	45.83002	0.42197	0.010	-8.33997	20.00000	Linear
63	1,1,2-Trichloroethane	0.19824	0.20322	0.20322	0.010	2.51029	20.00000	Averaged
64	Dibromochloromethane	50.00000	46.27902	0.24743	0.010	-7.44196	20.00000	Linear
65	1,3-Dichloropropane	50.00000	47.31363	0.46855	0.010	-5.37273	20.00000	Linear
66	1,2-Dibromoethane	50.00000	44.60104	0.23010	0.010	-10.79791	20.00000	Linear
67	2-Hexanone	250	207	0.19000	0.010	-17.17577	20.00000	Linear
69	Chlorobenzene	0.73853	0.74912	0.74912	0.300	1.43413	20.00000	Averaged
71	Ethylbenzene	50.00000	46.76369	0.40194	0.010	-6.47262	20.00000	Linear
72	1,1,1,2-Tetrachloroethane	0.25045	0.25771	0.25771	0.010	2.89786	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225530-4
Lab File ID : P4965.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/28/18 09:07
Instrument ID: GCMS-P
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	100	92.82686	0.51023	0.010	-7.17314	20.00000	Linear
74 o-Xylene	50.00000	45.77061	0.46158	0.010	-8.45879	20.00000	Linear
75 Styrene	50.00000	45.40060	0.82199	0.010	-9.19880	20.00000	Linear
76 Bromoform	50.00000	43.96170	0.16739	0.100	-12.07661	20.00000	Linear
77 Isopropylbenzene	50.00000	46.72457	2.16649	0.010	-6.55087	20.00000	Linear
80 Bromobenzene	0.54629	0.56829	0.56829	0.010	4.02626	20.00000	Averaged
81 N-Propylbenzene	50.00000	48.41212	2.85511	0.010	-3.17577	20.00000	Linear
82 1,1,2,2-Tetrachloroethane	0.65758	0.61918	0.61918	0.300	-5.83922	20.00000	Averaged
83 2-Chlorotoluene	50.00000	47.57696	1.66329	0.010	-4.84608	20.00000	Linear
84 1,2,3-Trichloropropane	0.60022	0.56780	0.56780	0.010	-5.40143	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	46.30538	1.91326	0.010	-7.38925	20.00000	Linear
87 4-Chlorotoluene	50.00000	47.62046	1.79959	0.010	-4.75909	20.00000	Linear
88 tert-Butylbenzene	50.00000	46.25116	1.89619	0.010	-7.49768	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	47.38242	2.02752	0.010	-5.23517	20.00000	Linear
91 sec-Butylbenzene	50.00000	47.47357	2.38647	0.010	-5.05286	20.00000	Linear
92 P-Isopropyltoluene	50.00000	46.69807	1.97735	0.010	-6.60385	20.00000	Linear
93 1,3-Dichlorobenzene	1.06792	1.11038	1.11038	0.010	3.97557	20.00000	Averaged
95 1,4-Dichlorobenzene	1.16971	1.16949	1.16949	0.010	-0.01913	20.00000	Averaged
97 N-Butylbenzene	50.00000	47.41198	1.84004	0.010	-5.17604	20.00000	Linear
99 1,2-Dichlorobenzene	1.02098	1.06194	1.06194	0.010	4.01157	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	44.90351	0.11226	0.010	-10.19298	20.00000	Quadratic
102 Hexachlorobutadiene	0.20687	0.21199	0.21199	0.010	2.47386	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	46.40476	0.64406	0.010	-7.19047	20.00000	Linear
104 Naphthalene	50.00000	42.61684	1.54641	0.010	-14.76632	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	46.58171	0.55551	0.010	-6.83657	20.00000	Linear
34 Dibromofluoromethane	0.48565	0.47905	0.47905	0.010	-1.35894	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68629	0.66887	0.66887	0.010	-2.53807	20.00000	Averaged
58 Toluene-D8	1.23335	1.22776	1.22776	0.010	-0.45343	20.00000	Averaged
78 P-Bromofluorobenzene	0.48820	0.50229	0.50229	0.010	2.88643	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225530-4
Lab File ID : P4965.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/28/18 09:07
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4965.D
Report Date: 04-Apr-2018 05:25

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4965.D
Lab Smp Id: WG225530-4
Inj Date : 28-MAR-2018 09:07 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225530-4,SL2295
Misc Info : WG225530,WG225349-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 04-Apr-2018 05:23 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

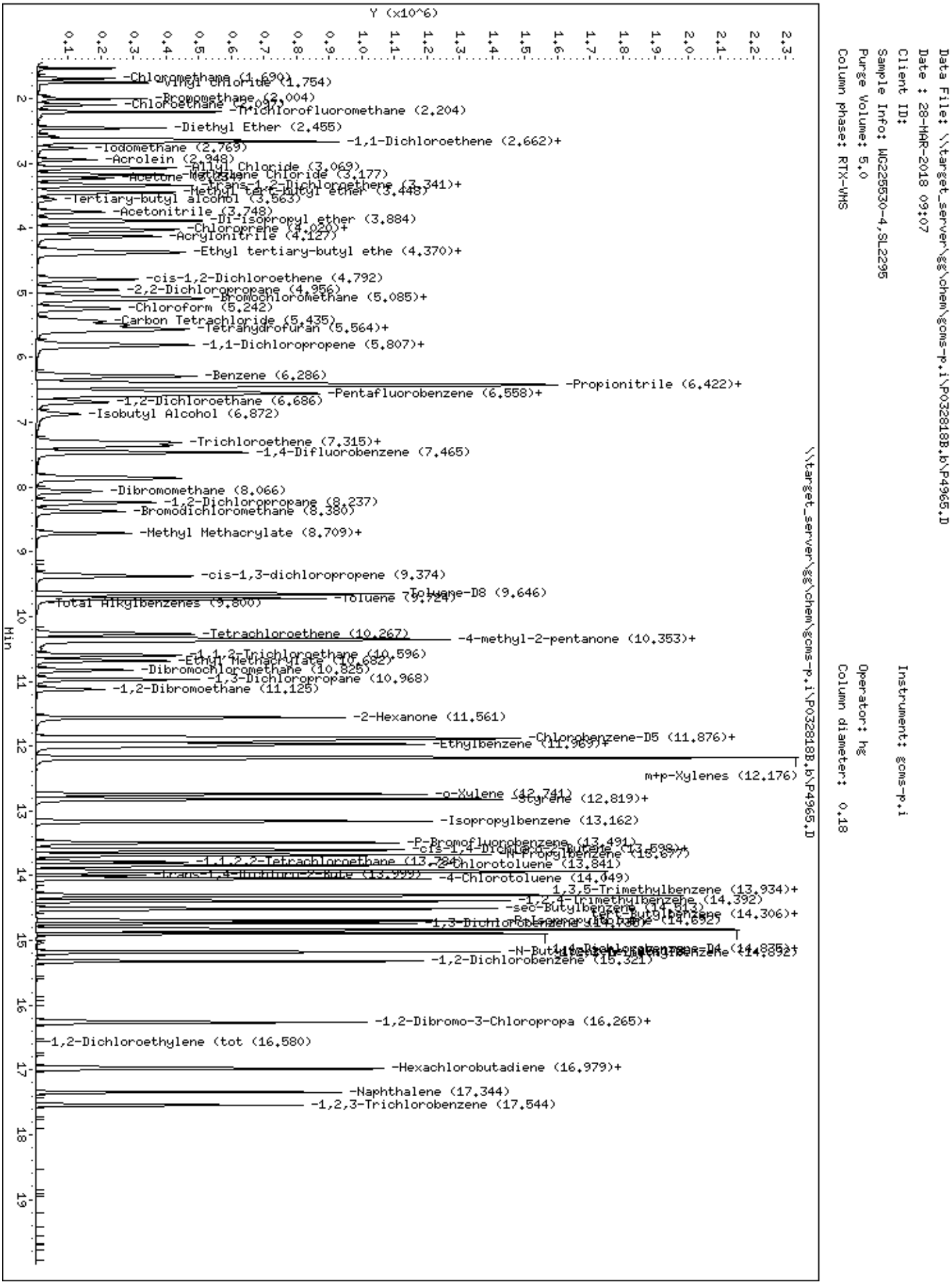
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.532	1.537	(0.234)	159565	50.0000	43.8	
2	Chloromethane	50	1.689	1.694	(0.259)	251393	50.0000	46.9	
3	Vinyl chloride	62	1.754	1.751	(0.268)	264507	50.0000	47.8	
4	Bromomethane	94	2.004	2.001	(0.307)	130950	50.0000	43.0	
5	Chloroethane	64	2.097	2.095	(0.321)	176741	50.0000	49.0	
6	Trichlorofluoromethane	101	2.204	2.209	(0.337)	404112	50.0000	49.4	
7	Diethyl Ether	59	2.454	2.459	(0.376)	193129	50.0000	48.1	
19	Tertiary-butyl alcohol	59	3.562	3.567	(0.545)	62537	250.000	176	
8	1,1-Dichloroethene	96	2.633	2.631	(0.403)	177503	50.0000	48.4	
10	Carbon Disulfide	76	2.661	2.666	(0.407)	602993	50.0000	49.4	
9	Freon-113	151	2.661	2.659	(0.407)	145027	50.0000	46.5	
11	Iodomethane	142	2.769	2.766	(0.424)	168575	50.0000	58.6	
12	Acrolein	56	2.947	2.945	(0.451)	170780	250.000	208	
14	Methylene Chloride	84	3.176	3.174	(0.486)	202369	50.0000	48.5	
15	Acetone	43	3.233	3.238	(0.495)	310224	250.000	231	
45	Isobutyl Alcohol	43	6.872	6.877	(1.051)	129331	1000.00	763	
16	trans-1,2-Dichloroethene	96	3.333	3.338	(0.510)	184550	50.0000	47.8	
13	Allyl Chloride	41	3.069	3.067	(0.470)	288920	50.0000	50.8	
18	Methyl tert-butyl ether	73	3.448	3.453	(0.528)	504724	50.0000	44.8	
20	Acetonitrile	41	3.748	3.753	(0.573)	271269	500.000	406	
21	Di-isopropyl ether	45	3.891	3.889	(0.595)	600336	50.0000	46.1	
22	Chloroprene	53	4.012	4.017	(0.614)	289977	50.0000	46.4	
39	Propionitrile	54	6.393	6.398	(0.978)	300561	500.000	413	
40	Methacrylonitrile	41	6.421	6.426	(0.983)	1348967	500.000	417	

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4965.D
Report Date: 04-Apr-2018 05:25

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	4.048	4.053	(0.619)	347863	50.0000	51.1	
	24	Acrylonitrile	52	4.127	4.131	(0.631)	342083	250.000	227	
	25	Ethyl tertiary-butyl ether	59	4.363	4.368	(0.668)	515664	50.0000	45.3	
	26	Vinyl Acetate	43	4.398	4.396	(0.589)	417950	50.0000	44.0	
	27	cis-1,2-Dichloroethene	96	4.792	4.797	(0.733)	193460	50.0000	46.7	
	52	Methyl Methacrylate	41	8.709	8.714	(1.167)	165374	50.0000	40.2	
	28	2,2-Dichloropropane	77	4.956	4.961	(0.758)	271728	50.0000	49.1	
	29	Bromochloromethane	128	5.099	5.104	(0.780)	90252	50.0000	53.1	
	31	Chloroform	83	5.242	5.247	(0.802)	332888	50.0000	50.3	
	32	Carbon Tetrachloride	117	5.435	5.440	(0.728)	241390	50.0000	51.6	
	33	Tetrahydrofuran	42	5.499	5.504	(0.841)	291744	250.000	199	
$	34	Dibromofluoromethane	113	5.564	5.561	(0.851)	224658	50.0000	49.3	
	35	1,1,1-Trichloroethane	97	5.571	5.576	(0.852)	288827	50.0000	51.0	
	37	1,1-Dichloropropene	75	5.799	5.812	(0.777)	264118	50.0000	47.2	
	36	2-Butanone	43	5.821	5.826	(0.891)	471424	250.000	210	
	38	Benzene	78	6.285	6.290	(0.842)	779102	50.0000	51.8	
*	41	Pentafluorobenzene	168	6.536	6.541	(1.000)	468965	50.0000		
	30	Cyclohexane	56	5.077	5.082	(0.777)	312415	50.0000	46.3	
	53	Ethyl Methacrylate	69	10.681	10.686	(1.431)	254927	50.0000	41.7	
$	42	1,2-Dichloroethane-D4	65	6.564	6.569	(1.004)	313676	50.0000	48.7	
	43	Tertiary-amyl methyl ether	73	6.564	6.569	(1.004)	462840	50.0000	48.3	
	44	1,2-Dichloroethane	62	6.686	6.691	(0.896)	282959	50.0000	47.6	
	47	Trichloroethene	95	7.358	7.363	(0.986)	186298	50.0000	51.5	
*	48	1,4-Difluorobenzene	114	7.465	7.470	(1.000)	765747	50.0000		
	49	Dibromomethane	93	8.065	8.070	(1.080)	114126	50.0000	49.8	
	50	1,2-Dichloropropane	63	8.237	8.242	(1.103)	198454	50.0000	47.0	
	51	Bromodichloromethane	83	8.380	8.385	(1.123)	258097	50.0000	52.6	
	57	cis-1,3-dichloropropene	75	9.381	9.378	(1.257)	358575	50.0000	47.6	
	54	1,4-Dioxane	88	8.716	8.721	(1.168)	37474	1000.00	748	
$	58	Toluene-D8	98	9.652	9.650	(1.293)	940154	50.0000	49.8	
	59	Toluene	92	9.724	9.729	(1.303)	500383	50.0000	50.9	
	61	4-methyl-2-pentanone	43	10.346	10.351	(1.386)	1057176	250.000	207	
	60	Tetrachloroethene	164	10.267	10.272	(0.865)	144822	50.0000	50.4	
	62	trans-1,3-Dichloropropene	75	10.374	10.379	(1.390)	323119	50.0000	45.8	
	63	1,1,2-Trichloroethane	83	10.596	10.601	(1.419)	155615	50.0000	51.2	
	64	Dibromochloromethane	129	10.824	10.829	(0.912)	192094	50.0000	46.3	
	65	1,3-Dichloropropane	76	10.967	10.972	(0.924)	363763	50.0000	47.3	
	66	1,2-Dibromoethane	107	11.125	11.130	(1.490)	176195	50.0000	44.6	
	67	2-Hexanone	43	11.561	11.559	(0.974)	737528	250.000	207	
*	68	Chlorobenzene-D5	117	11.868	11.873	(1.000)	776364	50.0000		
	69	Chlorobenzene	112	11.889	11.894	(1.002)	581592	50.0000	50.7	
	70	1-Chlorohexane	91	11.918	11.923	(1.004)	300478	50.0000	48.1	
	71	Ethylbenzene	106	11.968	11.973	(1.008)	312048	50.0000	46.8	
	72	1,1,1,2-Tetrachloroethane	131	12.004	12.009	(1.011)	200078	50.0000	51.4	
	73	m+p-Xylenes	106	12.183	12.180	(1.026)	792243	100.000	92.8	
	74	o-Xylene	106	12.740	12.745	(1.073)	358352	50.0000	45.8	
	75	Styrene	104	12.819	12.824	(1.080)	638162	50.0000	45.4	
	76	Bromoform	173	12.819	12.824	(1.080)	129952	50.0000	44.0	
	77	Isopropylbenzene	105	13.162	13.167	(0.888)	901233	50.0000	46.7	
$	78	P-Bromofluorobenzene	95	13.491	13.496	(1.807)	384625	50.0000	51.4	
	79	cis-1,4-Dichloro-2-Butene	53	13.605	13.610	(0.918)	96700	50.0000	43.0	
	86	trans-1,4-Dichloro-2-Butene	53	13.998	13.996	(0.944)	73083	50.0000	42.8	
	80	Bromobenzene	156	13.598	13.603	(0.917)	236401	50.0000	52.0	
	81	N-Propylbenzene	91	13.676	13.681	(0.922)	1187688	50.0000	48.4	

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4965.D
Report Date: 04-Apr-2018 05:25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.784	13.789	(0.930)	257570	50.0000	47.1	
85	1,3,5-Trimethylbenzene	105	13.934	13.939	(0.940)	795891	50.0000	46.3	
83	2-Chlorotoluene	91	13.841	13.846	(0.933)	691908	50.0000	47.6	
84	1,2,3-Trichloropropane	75	13.920	13.925	(0.939)	236199	50.0000	47.3	
87	4-Chlorotoluene	91	14.048	14.046	(0.947)	748605	50.0000	47.6	
88	tert-Butylbenzene	119	14.298	14.303	(0.964)	788789	50.0000	46.2	
89	Pentachloroethane	165	14.306	14.311	(0.965)	109577	50.0000	50.3	
90	1,2,4-Trimethylbenzene	105	14.391	14.396	(0.971)	843424	50.0000	47.4	
92	P-Isopropyltoluene	119	14.692	14.697	(0.991)	822550	50.0000	46.7	
93	1,3-Dichlorobenzene	146	14.734	14.739	(0.994)	461903	50.0000	52.0	
* 94	1,4-Dichlorobenzene-D4	152	14.827	14.832	(1.000)	415987	50.0000		
95	1,4-Dichlorobenzene	146	14.842	14.847	(1.001)	486493	50.0000	50.0	
97	N-Butylbenzene	91	15.178	15.183	(1.024)	765433	50.0000	47.4	
91	sec-Butylbenzene	105	14.513	14.518	(0.979)	992741	50.0000	47.5	
99	1,2-Dichlorobenzene	146	15.321	15.326	(1.033)	441754	50.0000	52.0	
100	1,2-Dibromo-3-Chloropropane	75	16.235	16.239	(1.095)	46699	50.0000	44.9	
101	1,3,5-Trichlorobenzene	180	16.264	16.268	(1.097)	296681	50.0000	46.6	
102	Hexachlorobutadiene	225	16.965	16.969	(1.144)	88185	50.0000	51.2	
103	1,2,4-Trichlorobenzene	180	16.986	16.991	(1.146)	267919	50.0000	46.4	
96	1,2,3-Trimethylbenzene	105	14.892	14.897	(1.004)	876949	50.0000	46.7	
104	Naphthalene	128	17.343	17.347	(1.170)	643285	50.0000	42.6	
105	1,2,3-Trichlorobenzene	180	17.544	17.549	(1.183)	231084	50.0000	46.6	
17	Methyl Acetate	43	3.355	3.360	(0.513)	163938	50.0000	42.8	
46	Methylcyclohexane	83	7.308	7.313	(1.118)	290579	50.0000	45.8	


Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4965.D
Date : 28-MAR-2018 09:07
Client ID:
Sample Info: WG225530-4,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032818B.b\P4965.D
Y (x10^6)
Min
-Chloromethane (1.690)
-Vinyl Chloride (1.754)
-Bromomethane (2.004)
-Chloroethane (2.097)
-Trichlorofluoromethane (2.204)
-Diethyl Ether (2.455)
-1,1-Dichloroethene (2.662)+
-Iodomethane (2.769)
-Acrolein (2.948)
-Allyl Chloride (3.069)
-Methylene Chloride (3.177)
-Acetone (3.234)
-Trans-1,2-Dichloroethene (3.341)+
-Methyl tert-butyl ether (3.448)
-Tertiary-butyl alcohol (3.563)
-Acetonitrile (3.748)
-Di-isopropyl ether (3.884)
-Chloroprene (4.020)+
-Acrylonitrile (4.127)
-Ethyl tertiary-butyl ethe (4.370)+
-cis-1,2-Dichloroethene (4.792)
-2,2-Dichloropropane (4.956)
-Bromochloromethane (5.085)+
-Chloroform (5.242)
-Carbon Tetrachloride (5.435)
-Tetrahydrofuran (5.564)+
-1,1-Dichloropropene (5.807)+
-Benzene (6.286)
-Propionitrile (6.422)+
-Pentafluorobenzene (6.558)+
-1,2-Dichloroethane (6.686)
-Isobutyl Alcohol (6.872)
-Trichloroethene (7.315)+
-1,4-Difluorobenzene (7.465)
-Dibromomethane (8.066)
-1,2-Dichloropropane (8.237)
-Bromodichloromethane (8.380)
-Methyl Methacrylate (8.709)+
-cis-1,3-dichloropropene (9.374)
-Toluene-D8 (9.646)
-Total Alkylbenzenes (9.800)
-Toluene (9.724)
-Tetrachloroethene (10.267)
-4-methyl-2-pentanone (10.353)+
-1,1,2-Trichloroethane (10.596)
-Ethyl Methacrylate (10.682)
-Dibromochloromethane (10.825)
-1,3-Dichloropropane (10.968)
-1,2-Dibromoethane (11.125)
-2-Hexanone (11.561)
-Chlorobenzene-D5 (11.876)+
-Ethylbenzene (11.969)+
m+p-Xylenes (12.176)
-o-Xylene (12.741)
-Styrene (12.819)+
-Isopropylbenzene (13.162)
-P-Bromofluorobenzene (13.491)
-cis-1,4-Dichloro-2-Butene (13.598)+
-N-Propylbenzene (13.677)
-1,1,2,2-Tetrachloroethane (13.784)
-2-Chlorotoluene (13.841)
-trans-1,4-Dichloro-2-Bute (13.999)
-4-Chlorotoluene (14.049)
1,3,5-Trimethylbenzene (13.934)+
-1,2,4-Trimethylbenzene (14.392)
-sec-Butylbenzene (14.513)
-tert-Butylbenzene (14.306)+
-P-Isopropyltoluene (14.692)
-1,3-Dichlorobenzene (14.735)
-1,4-Dichlorobenzene-D4 (14.835)+
-N-Butylbenzene (14.892)
-1,2-Dichlorobenzene (15.321)
-1,2-Dibromo-3-Chloropropa (16.265)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.979)+
-Naphthalene (17.344)
-1,2,3-Trichlorobenzene (17.544)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225530-5
Lab File ID : P4982.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/28/18 19:02
Instrument ID: GCMS-P
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.38805	0.32632	0.32632	0.010	-15.90728	20.00000	Averaged	
2	Chloromethane	0.57151	0.52856	0.52856	0.100	-7.51638	20.00000	Averaged	
3	Vinyl chloride	0.59007	0.54243	0.54243	0.010	-8.07335	20.00000	Averaged	
4	Bromomethane	0.32478	0.27823	0.27823	0.010	-14.33116	20.00000	Averaged	
5	Chloroethane	0.38436	0.37533	0.37533	0.010	-2.34946	20.00000	Averaged	
6	Trichlorofluoromethane	0.87177	0.87770	0.87770	0.010	0.68065	20.00000	Averaged	
8	1,1-Dichloroethene	0.39118	0.37532	0.37532	0.100	-4.05442	20.00000	Averaged	
9	Freon-113	0.33232	0.29547	0.29547	0.010	-11.08759	20.00000	Averaged	
10	Carbon Disulfide	1.30176	1.25526	1.25526	0.010	-3.57200	20.00000	Averaged	
14	Methylene Chloride	0.44482	0.42142	0.42142	0.010	-5.26020	20.00000	Averaged	
15	Acetone	0.14318	0.11489	0.11489	0.010	-19.75809	20.00000	Averaged	
16	trans-1,2-Dichloroethene	50.00000	45.35361	0.37354	0.010	-9.29279	20.00000	Linear	
18	Methyl tert-butyl ether	50.00000	42.50163	1.01822	0.010	-14.99675	20.00000	Linear	
23	1,1-Dichloroethane	0.72583	0.72600	0.72600	0.100	0.02383	20.00000	Averaged	
27	cis-1,2-Dichloroethene	50.00000	45.82057	0.40467	0.010	-8.35885	20.00000	Linear	
28	2,2-Dichloropropane	50.00000	38.55144	0.45318	0.010	-22.89713	20.00000	Linear	*
29	Bromochloromethane	50.00000	54.83066	0.19862	0.010	9.66132	20.00000	Linear	
31	Chloroform	0.70534	0.71171	0.71171	0.010	0.90324	20.00000	Averaged	
32	Carbon Tetrachloride	0.30566	0.30328	0.30328	0.010	-0.77859	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.60373	0.61192	0.61192	0.010	1.35655	20.00000	Averaged	
36	2-Butanone	250	201	0.19175	0.010	-19.75310	20.00000	Linear	
37	1,1-Dichloropropene	50.00000	44.95451	0.32810	0.010	-10.09098	20.00000	Linear	
38	Benzene	0.98260	0.98481	0.98481	0.010	0.22490	20.00000	Averaged	
44	1,2-Dichloroethane	0.38812	0.36825	0.36825	0.010	-5.11810	20.00000	Averaged	
47	Trichloroethene	0.23639	0.24144	0.24144	0.010	2.13751	20.00000	Averaged	
49	Dibromomethane	0.14946	0.14800	0.14800	0.010	-0.97596	20.00000	Averaged	
50	1,2-Dichloropropane	50.00000	46.62602	0.25696	0.010	-6.74795	20.00000	Linear	
51	Bromodichloromethane	0.32067	0.33807	0.33807	0.010	5.42565	20.00000	Averaged	
57	cis-1,3-dichloropropene	50.00000	44.06165	0.43192	0.010	-11.87670	20.00000	Linear	
59	Toluene	0.64240	0.65444	0.65444	0.010	1.87484	20.00000	Averaged	
60	Tetrachloroethene	0.18489	0.18557	0.18557	0.010	0.36409	20.00000	Averaged	
61	4-methyl-2-pentanone	250	202	0.26865	0.010	-19.34301	20.00000	Linear	
62	trans-1,3-Dichloropropene	50.00000	43.89964	0.40338	0.010	-12.20071	20.00000	Linear	
63	1,1,2-Trichloroethane	0.19824	0.19213	0.19213	0.010	-3.08531	20.00000	Averaged	
64	Dibromochloromethane	50.00000	45.31734	0.24216	0.010	-9.36532	20.00000	Linear	
65	1,3-Dichloropropane	50.00000	47.07697	0.46618	0.010	-5.84607	20.00000	Linear	
66	1,2-Dibromoethane	50.00000	44.55456	0.22985	0.010	-10.89088	20.00000	Linear	
67	2-Hexanone	250	200	0.18361	0.010	-19.80967	20.00000	Linear	
69	Chlorobenzene	0.73853	0.74973	0.74973	0.300	1.51689	20.00000	Averaged	
71	Ethylbenzene	50.00000	46.32203	0.39805	0.010	-7.35593	20.00000	Linear	
72	1,1,1,2-Tetrachloroethane	0.25045	0.25503	0.25503	0.010	1.82903	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225530-5
Lab File ID : P4982.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/28/18 19:02
Instrument ID: GCMS-P
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	100	91.86787	0.50479	0.010	-8.13213	20.00000	Linear
74 o-Xylene	50.00000	46.70730	0.47142	0.010	-6.58540	20.00000	Linear
75 Styrene	50.00000	45.27844	0.81966	0.010	-9.44312	20.00000	Linear
76 Bromoform	50.00000	43.00832	0.16357	0.100	-13.98337	20.00000	Linear
77 Isopropylbenzene	50.00000	45.29763	2.09825	0.010	-9.40473	20.00000	Linear
80 Bromobenzene	0.54629	0.54943	0.54943	0.010	0.57476	20.00000	Averaged
81 N-Propylbenzene	50.00000	46.14241	2.71979	0.010	-7.71519	20.00000	Linear
82 1,1,2,2-Tetrachloroethane	0.65758	0.59715	0.59715	0.300	-9.18894	20.00000	Averaged
83 2-Chlorotoluene	50.00000	45.82585	1.60075	0.010	-8.34830	20.00000	Linear
84 1,2,3-Trichloropropane	0.60022	0.53885	0.53885	0.010	-10.22451	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	44.95375	1.85561	0.010	-10.09249	20.00000	Linear
87 4-Chlorotoluene	50.00000	45.53064	1.71902	0.010	-8.93873	20.00000	Linear
88 tert-Butylbenzene	50.00000	44.22722	1.81004	0.010	-11.54557	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	45.75542	1.95600	0.010	-8.48916	20.00000	Linear
91 sec-Butylbenzene	50.00000	45.29184	2.27432	0.010	-9.41633	20.00000	Linear
92 P-Isopropyltoluene	50.00000	44.86348	1.89677	0.010	-10.27304	20.00000	Linear
93 1,3-Dichlorobenzene	1.06792	1.08249	1.08249	0.010	1.36449	20.00000	Averaged
95 1,4-Dichlorobenzene	1.16971	1.13299	1.13299	0.010	-3.13960	20.00000	Averaged
97 N-Butylbenzene	50.00000	45.62807	1.76845	0.010	-8.74387	20.00000	Linear
99 1,2-Dichlorobenzene	1.02098	1.03298	1.03298	0.010	1.17483	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	50.00000	42.33001	0.10559	0.010	-15.33998	20.00000	Quadratic
102 Hexachlorobutadiene	0.20687	0.20523	0.20523	0.010	-0.79207	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	45.79737	0.63536	0.010	-8.40526	20.00000	Linear
104 Naphthalene	50.00000	40.77138	1.47646	0.010	-18.45725	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	44.37058	0.52886	0.010	-11.25884	20.00000	Linear
34 Dibromofluoromethane	0.48565	0.49065	0.49065	0.010	1.03036	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68629	0.68462	0.68462	0.010	-0.24294	20.00000	Averaged
58 Toluene-D8	1.23335	1.22733	1.22733	0.010	-0.48801	20.00000	Averaged
78 P-Bromofluorobenzene	0.48820	0.50208	0.50208	0.010	2.84361	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225530-5
Lab File ID : P4982.D
Initial Calibration Date(s): 03/24/18 08:24 03/24/18 11:18

SDG: SL2295
Analytical Date: 03/28/18 19:02
Instrument ID: GCMS-P
Column ID:

*** = Compound out of QC criteria**

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4982.D
Report Date: 04-Apr-2018 05:26

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4982.D
Lab Smp Id: WG225530-5
Inj Date : 28-MAR-2018 19:02 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225530-5,SL2295
Misc Info : WG225530,WG225349-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 04-Apr-2018 05:23 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 18 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

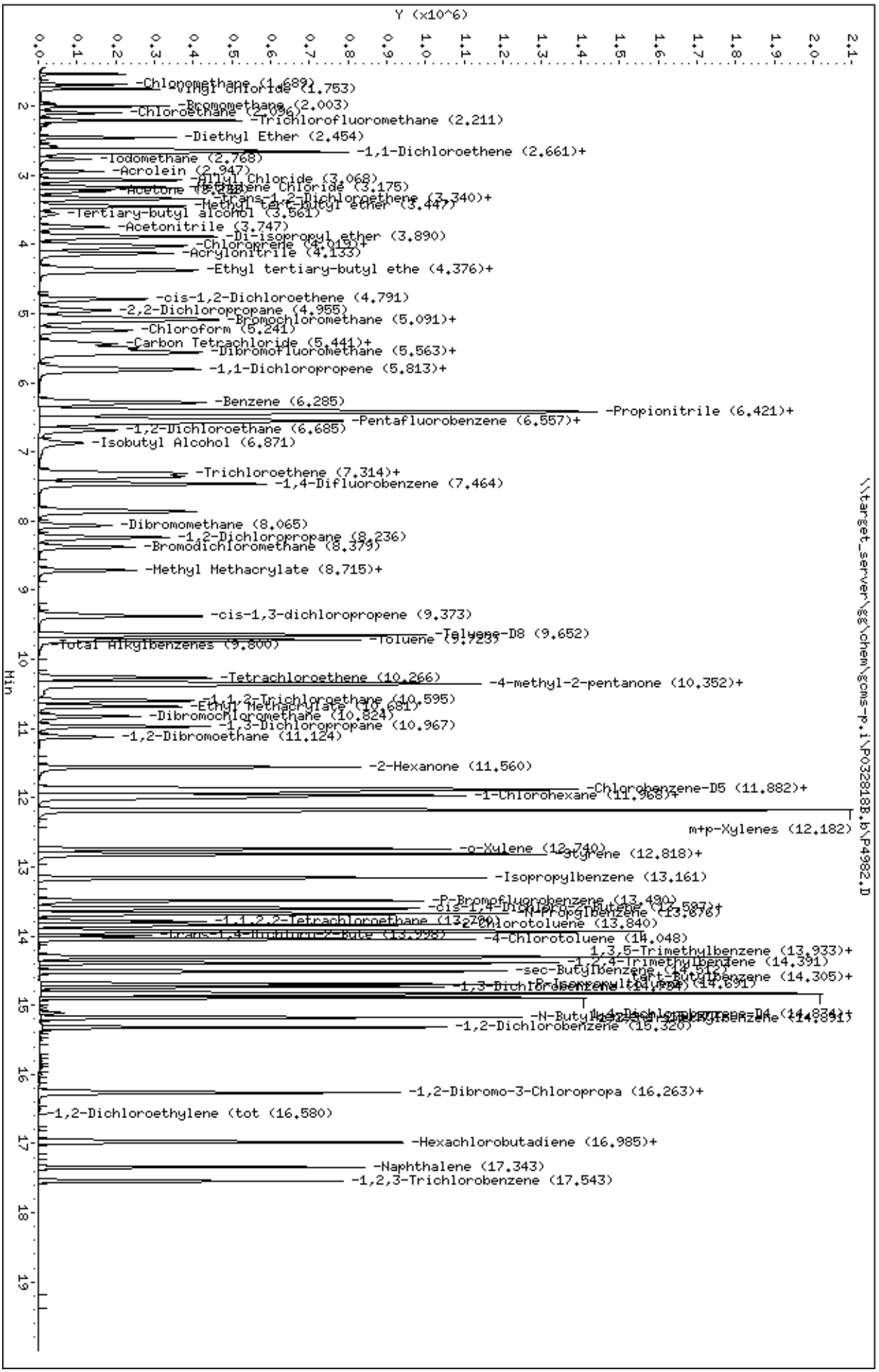
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.538	1.537	(0.235)	137939	50.0000	42.0	
2	Chloromethane	50	1.688	1.694	(0.258)	223426	50.0000	46.2	
3	Vinyl chloride	62	1.753	1.751	(0.268)	229289	50.0000	46.0	
4	Bromomethane	94	2.003	2.001	(0.307)	117611	50.0000	42.8	
5	Chloroethane	64	2.096	2.095	(0.321)	158656	50.0000	48.8	
6	Trichlorofluoromethane	101	2.210	2.209	(0.338)	371013	50.0000	50.3	
7	Diethyl Ether	59	2.453	2.459	(0.375)	171760	50.0000	47.4	
19	Tertiary-butyl alcohol	59	3.561	3.567	(0.545)	53086	250.000	167	
8	1,1-Dichloroethene	96	2.632	2.631	(0.403)	158650	50.0000	48.0	
10	Carbon Disulfide	76	2.667	2.666	(0.408)	530611	50.0000	48.2	
9	Freon-113	151	2.660	2.659	(0.407)	124899	50.0000	44.4	
11	Iodomethane	142	2.768	2.766	(0.424)	149124	50.0000	57.5	
12	Acrolein	56	2.946	2.945	(0.451)	148361	250.000	201	
14	Methylene Chloride	84	3.175	3.174	(0.486)	178138	50.0000	47.4	
15	Acetone	43	3.232	3.238	(0.495)	242824	250.000	201	
45	Isobutyl Alcohol	43	6.871	6.877	(1.051)	111198	1000.00	730	
16	trans-1,2-Dichloroethene	96	3.339	3.338	(0.511)	157900	50.0000	45.4	
13	Allyl Chloride	41	3.068	3.067	(0.470)	243980	50.0000	47.6	
18	Methyl tert-butyl ether	73	3.454	3.453	(0.529)	430409	50.0000	42.5	
20	Acetonitrile	41	3.754	3.753	(0.575)	246084	500.000	408	
21	Di-isopropyl ether	45	3.890	3.889	(0.595)	527735	50.0000	45.0	
22	Chloroprene	53	4.018	4.017	(0.615)	253099	50.0000	44.9	
39	Propionitrile	54	6.399	6.398	(0.979)	270765	500.000	413	
40	Methacrylonitrile	41	6.420	6.426	(0.982)	1225931	500.000	420	

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4982.D
Report Date: 04-Apr-2018 05:26

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	4.047	4.053	(0.619)	306888	50.0000	50.0	
	24 Acrylonitrile	52	4.133	4.131	(0.632)	293857	250.000	216	
	25 Ethyl tertiary-butyl ether	59	4.369	4.368	(0.669)	447457	50.0000	43.7	
	26 Vinyl Acetate	43	4.397	4.396	(0.589)	372574	50.0000	43.2	
	27 cis-1,2-Dichloroethene	96	4.790	4.797	(0.733)	171056	50.0000	45.8	
	52 Methyl Methacrylate	41	8.708	8.714	(1.167)	145708	50.0000	39.0	
	28 2,2-Dichloropropane	77	4.948	4.961	(0.757)	191563	50.0000	38.6	
	29 Bromochloromethane	128	5.105	5.104	(0.781)	83957	50.0000	54.8	
	31 Chloroform	83	5.241	5.247	(0.802)	300848	50.0000	50.4	
	32 Carbon Tetrachloride	117	5.441	5.440	(0.729)	211453	50.0000	49.6	
	33 Tetrahydrofuran	42	5.498	5.504	(0.841)	253294	250.000	192	
$	34 Dibromofluoromethane	113	5.562	5.561	(0.851)	207404	50.0000	50.5	
	35 1,1,1-Trichloroethane	97	5.570	5.576	(0.852)	258663	50.0000	50.7	
	37 1,1-Dichloropropene	75	5.805	5.812	(0.778)	228754	50.0000	45.0	
	36 2-Butanone	43	5.820	5.826	(0.891)	405270	250.000	201	
	38 Benzene	78	6.284	6.290	(0.842)	686624	50.0000	50.1	
*	41 Pentafluorobenzene	168	6.535	6.541	(1.000)	422709	50.0000		
	30 Cyclohexane	56	5.076	5.082	(0.777)	270051	50.0000	44.4	
	53 Ethyl Methacrylate	69	10.680	10.686	(1.431)	225481	50.0000	40.6	
$	42 1,2-Dichloroethane-D4	65	6.563	6.569	(1.004)	289395	50.0000	49.9	
	43 Tertiary-amyl methyl ether	73	6.563	6.569	(1.004)	408037	50.0000	47.3	
	44 1,2-Dichloroethane	62	6.685	6.691	(0.896)	256752	50.0000	47.4	
	47 Trichloroethene	95	7.364	7.363	(0.987)	168335	50.0000	51.1	
*	48 1,4-Difluorobenzene	114	7.464	7.470	(1.000)	697216	50.0000		
	49 Dibromomethane	93	8.064	8.070	(1.080)	103191	50.0000	49.5	
	50 1,2-Dichloropropane	63	8.236	8.242	(1.103)	179159	50.0000	46.6	
	51 Bromodichloromethane	83	8.379	8.385	(1.123)	235709	50.0000	52.7	
	57 cis-1,3-dichloropropene	75	9.379	9.378	(1.257)	301140	50.0000	44.1	
	54 1,4-Dioxane	88	8.715	8.721	(1.168)	29806	1000.00	654	
$	58 Toluene-D8	98	9.651	9.650	(1.293)	855717	50.0000	49.8	
	59 Toluene	92	9.723	9.729	(1.303)	456287	50.0000	50.9	
	61 4-methyl-2-pentanone	43	10.344	10.351	(1.386)	936539	250.000	202	
	60 Tetrachloroethene	164	10.266	10.272	(0.865)	130670	50.0000	50.2	
	62 trans-1,3-Dichloropropene	75	10.380	10.379	(1.391)	281246	50.0000	43.9	
	63 1,1,2-Trichloroethane	83	10.595	10.601	(1.419)	133954	50.0000	48.4	
	64 Dibromochloromethane	129	10.823	10.829	(0.912)	170524	50.0000	45.3	
	65 1,3-Dichloropropane	76	10.973	10.972	(0.925)	328272	50.0000	47.1	
	66 1,2-Dibromoethane	107	11.124	11.130	(1.490)	160254	50.0000	44.6	
	67 2-Hexanone	43	11.560	11.559	(0.974)	646474	250.000	200	
*	68 Chlorobenzene-D5	117	11.867	11.873	(1.000)	704167	50.0000		
	69 Chlorobenzene	112	11.888	11.894	(1.002)	527938	50.0000	50.8	
	70 1-Chlorohexane	91	11.924	11.923	(1.005)	256142	50.0000	45.2	
	71 Ethylbenzene	106	11.967	11.973	(1.008)	280297	50.0000	46.3	
	72 1,1,1,2-Tetrachloroethane	131	12.003	12.009	(1.011)	179587	50.0000	50.9	
	73 m+p-Xylenes	106	12.181	12.180	(1.027)	710907	100.000	91.9	
	74 o-Xylene	106	12.746	12.745	(1.074)	331961	50.0000	46.7	
	75 Styrene	104	12.818	12.824	(1.080)	577178	50.0000	45.3	
	76 Bromoform	173	12.818	12.824	(1.080)	115179	50.0000	43.0	
	77 Isopropylbenzene	105	13.161	13.167	(0.888)	816928	50.0000	45.3	
$	78 P-Bromofluorobenzene	95	13.490	13.496	(1.807)	350057	50.0000	51.4	
	79 cis-1,4-Dichloro-2-Butene	53	13.604	13.610	(0.918)	81652	50.0000	39.0	
	86 trans-1,4-Dichloro-2-Butene	53	13.997	13.996	(0.944)	66526	50.0000	41.7	
	80 Bromobenzene	156	13.597	13.603	(0.917)	213915	50.0000	50.3	
	81 N-Propylbenzene	91	13.675	13.681	(0.922)	1058914	50.0000	46.1	

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4982.D
Report Date: 04-Apr-2018 05:26

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	13.790	13.789	(0.930)	232493	50.0000	45.4	
85	1,3,5-Trimethylbenzene	105	13.933	13.939	(0.940)	722456	50.0000	45.0	
83	2-Chlorotoluene	91	13.840	13.846	(0.933)	623233	50.0000	45.8	
84	1,2,3-Trichloropropane	75	13.926	13.925	(0.939)	209796	50.0000	44.9	
87	4-Chlorotoluene	91	14.047	14.046	(0.947)	669279	50.0000	45.5	
88	tert-Butylbenzene	119	14.304	14.303	(0.965)	704716	50.0000	44.2	
89	Pentachloroethane	165	14.312	14.311	(0.965)	99688	50.0000	48.9	
90	1,2,4-Trimethylbenzene	105	14.390	14.396	(0.971)	761542	50.0000	45.8	
92	P-Isopropyltoluene	119	14.698	14.697	(0.991)	738482	50.0000	44.9	
93	1,3-Dichlorobenzene	146	14.733	14.739	(0.994)	421455	50.0000	50.7	
* 94	1,4-Dichlorobenzene-D4	152	14.826	14.832	(1.000)	389337	50.0000		
95	1,4-Dichlorobenzene	146	14.841	14.847	(1.001)	441115	50.0000	48.4	
97	N-Butylbenzene	91	15.176	15.183	(1.024)	688522	50.0000	45.6	
91	sec-Butylbenzene	105	14.512	14.518	(0.979)	885476	50.0000	45.3	
99	1,2-Dichlorobenzene	146	15.319	15.326	(1.033)	402177	50.0000	50.6	
100	1,2-Dibromo-3-Chloropropane	75	16.242	16.239	(1.095)	41109	50.0000	42.3	
101	1,3,5-Trichlorobenzene	180	16.270	16.268	(1.097)	277510	50.0000	46.5	
102	Hexachlorobutadiene	225	16.963	16.969	(1.144)	79905	50.0000	49.6	
103	1,2,4-Trichlorobenzene	180	16.985	16.991	(1.146)	247368	50.0000	45.8	
96	1,2,3-Trimethylbenzene	105	14.891	14.897	(1.004)	795300	50.0000	45.2	
104	Naphthalene	128	17.342	17.347	(1.170)	574841	50.0000	40.8	
105	1,2,3-Trichlorobenzene	180	17.542	17.549	(1.183)	205906	50.0000	44.4	
17	Methyl Acetate	43	3.354	3.360	(0.513)	144727	50.0000	41.9	
46	Methylcyclohexane	83	7.314	7.313	(1.119)	244991	50.0000	42.9	


Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4982.D
Date : 28-MAR-2018 19:02
Client ID:
Sample Info: WG225530-5,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032818B.b\P4982.D
Y (x10^6)
Min
-Chloromethane (1.689)
-Vinyl Chloride (1.753)
-Bromomethane (2.003)
-Chloroethane (2.036)
-Trichlorofluoromethane (2.211)
-Diethyl Ether (2.454)
-1,1-Dichloroethene (2.661)+
-Iodomethane (2.768)
-Acrolein (2.947)
-Allyl Chloride (3.068)
-Methylene Chloride (3.175)
-Acetone (3.236)
-trans-1,2-Dichloroethene (3.340)+
-Methyl tert-butyl ether (3.447)
-Tertiary-butyl alcohol (3.561)
-Acetonitrile (3.747)
-Di-isopropyl ether (3.890)
-Chloroprene (4.019)+
-Acrylonitrile (4.133)
-Ethyl tertiary-butyl ethe (4.376)+
-cis-1,2-Dichloroethene (4.791)
-2,2-Dichloropropane (4.955)
-Bromochloromethane (5.091)+
-Chloroform (5.241)
-Carbon Tetrachloride (5.441)+
-Dibromofluoromethane (5.563)+
-1,1-Dichloropropene (5.813)+
-Benzene (6.285)
-Propionitrile (6.421)+
-Pentafluorobenzene (6.557)+
-1,2-Dichloroethane (6.685)
-Isobutyl Alcohol (6.871)
-Trichloroethene (7.314)+
-1,4-Difluorobenzene (7.464)
-Dibromomethane (8.065)
-1,2-Dichloropropane (8.236)
-Bromodichloromethane (8.379)
-Methyl Methacrylate (8.715)+
-cis-1,3-dichloropropene (9.373)
-Toluene-D8 (9.652)
-Toluene (9.723)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.266)
-4-methyl-2-pentanone (10.352)+
-1,1,2-Trichloroethane (10.595)
-Ethyl Methacrylate (10.681)
-Dibromochloromethane (10.824)
-1,3-Dichloropropane (10.967)
-1,2-Dibromoethane (11.124)
-2-Hexanone (11.560)
-Chlorobenzene-D5 (11.882)+
-1-Chlorohexane (11.968)+
m+p-Xylenes (12.182)
-o-Xylene (12.740)
-Styrene (12.818)+
-Isopropylbenzene (13.161)
-P-Bromofluorobenzene (13.490)
-cis-1,4-Dichloro-2-butene (13.587)+
-N-Propylbenzene (13.676)
-1,1,2,2-Tetrachloroethane (13.709)
-2-Chlorotoluene (13.840)
-trans-1,4-Dichloro-2-Bute (13.998)
-4-Chlorotoluene (14.048)
1,3,5-Trimethylbenzene (13.933)+
-1,2,4-Trimethylbenzene (14.391)
-sec-Butylbenzene (14.515)
-tert-Butylbenzene (14.305)+
-1,3-Dichlorobenzene (14.754)
-1,4-Dichlorobenzene-D4 (14.834)+
-N-Butylbenzene (14.891)
-1,2-Dichlorobenzene (15.320)
-1,2-Dibromo-3-Chloropropa (16.263)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.985)+
-Naphthalene (17.343)
-1,2,3-Trichlorobenzene (17.543)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225399-4
Analytical Date: 03/26/18 09:01
Lab File ID : T4714.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.45216	0.45794	0.45794	0.010	1.27849	20.00000	Averaged
2	Chloromethane	50.00000	50.27352	0.61170	0.100	0.54703	20.00000	Linear
3	Vinyl chloride	0.37165	0.38476	0.38476	0.010	3.52563	20.00000	Averaged
4	Bromomethane	50.00000	45.65042	0.11857	0.010	-8.69915	20.00000	Linear
5	Chloroethane	0.17348	0.18117	0.18117	0.010	4.43051	20.00000	Averaged
6	Trichlorofluoromethane	0.56705	0.60002	0.60002	0.010	5.81386	20.00000	Averaged
8	1,1-Dichloroethene	0.28199	0.28096	0.28096	0.100	-0.36427	20.00000	Averaged
9	Freon-113	0.24040	0.23996	0.23996	0.010	-0.18134	20.00000	Averaged
10	Carbon Disulfide	0.84219	0.81853	0.81853	0.010	-2.80940	20.00000	Averaged
14	Methylene Chloride	50.00000	49.69984	0.52108	0.010	-0.60031	20.00000	Linear
15	Acetone	250	263	0.13118	0.010	5.04582	20.00000	Linear
16	trans-1,2-Dichloroethene	0.51884	0.50983	0.50983	0.010	-1.73598	20.00000	Averaged
18	Methyl tert-butyl ether	1.43894	1.48827	1.48827	0.010	3.42846	20.00000	Averaged
23	1,1-Dichloroethane	0.89556	0.89259	0.89259	0.100	-0.33167	20.00000	Averaged
27	cis-1,2-Dichloroethene	0.51245	0.52671	0.52671	0.010	2.78276	20.00000	Averaged
28	2,2-Dichloropropane	0.68633	0.74876	0.74876	0.010	9.09666	20.00000	Averaged
29	Bromochloromethane	0.23740	0.24601	0.24601	0.010	3.62841	20.00000	Averaged
31	Chloroform	0.89941	0.90223	0.90223	0.010	0.31364	20.00000	Averaged
32	Carbon Tetrachloride	50.00000	51.10621	0.38723	0.010	2.21243	20.00000	Linear
35	1,1,1-Trichloroethane	0.75780	0.76940	0.76940	0.010	1.53130	20.00000	Averaged
36	2-Butanone	0.19655	0.20352	0.20352	0.010	3.54846	20.00000	Averaged
37	1,1-Dichloropropene	0.44172	0.45592	0.45592	0.010	3.21410	20.00000	Averaged
38	Benzene	1.25602	1.28975	1.28975	0.010	2.68592	20.00000	Averaged
44	1,2-Dichloroethane	0.46845	0.46259	0.46259	0.010	-1.25225	20.00000	Averaged
47	Trichloroethene	0.34548	0.33775	0.33775	0.010	-2.23709	20.00000	Averaged
49	Dibromomethane	0.20280	0.20912	0.20912	0.010	3.11314	20.00000	Averaged
50	1,2-Dichloropropane	0.30477	0.31761	0.31761	0.010	4.21397	20.00000	Averaged
51	Bromodichloromethane	0.39921	0.42082	0.42082	0.010	5.41409	20.00000	Averaged
57	cis-1,3-dichloropropene	50.00000	49.94680	0.56435	0.010	-0.10640	20.00000	Linear
59	Toluene	0.75610	0.77526	0.77526	0.010	2.53440	20.00000	Averaged
60	Tetrachloroethene	0.27104	0.25621	0.25621	0.010	-5.47062	20.00000	Averaged
61	4-methyl-2-pentanone	250	258	0.25880	0.010	3.37051	20.00000	Linear
62	trans-1,3-Dichloropropene	50.00000	50.99973	0.49572	0.010	1.99945	20.00000	Linear
63	1,1,2-Trichloroethane	0.22692	0.23403	0.23403	0.010	3.13105	20.00000	Averaged
64	Dibromochloromethane	0.31292	0.34238	0.34238	0.010	9.41428	20.00000	Averaged
65	1,3-Dichloropropane	0.64044	0.64896	0.64896	0.010	1.33030	20.00000	Averaged
66	1,2-Dibromoethane	0.25465	0.27791	0.27791	0.010	9.13503	20.00000	Averaged
67	2-Hexanone	250	245	0.21090	0.010	-2.00907	20.00000	Linear
69	Chlorobenzene	0.93369	0.93478	0.93478	0.300	0.11679	20.00000	Averaged
71	Ethylbenzene	0.49318	0.51577	0.51577	0.010	4.57855	20.00000	Averaged
72	1,1,1,2-Tetrachloroethane	0.29678	0.31189	0.31189	0.010	5.08859	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225399-4
Analytical Date: 03/26/18 09:01
Lab File ID : T4714.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.54774	0.59846	0.59846	0.010	9.26020	20.00000	Averaged
74 o-Xylene	50.00000	48.35623	0.55646	0.010	-3.28753	20.00000	Linear
75 Styrene	50.00000	49.91225	0.92632	0.010	-0.17551	20.00000	Linear
76 Bromoform	50.00000	48.44325	0.20713	0.100	-3.11350	20.00000	Linear
77 Isopropylbenzene	50.00000	50.30155	3.13024	0.010	0.60310	20.00000	Linear
80 Bromobenzene	0.77129	0.76704	0.76704	0.010	-0.55099	20.00000	Averaged
81 N-Propylbenzene	3.76550	3.99751	3.99751	0.010	6.16154	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.89343	0.84868	0.84868	0.300	-5.00842	20.00000	Averaged
83 2-Chlorotoluene	2.24454	2.34953	2.34953	0.010	4.67739	20.00000	Averaged
84 1,2,3-Trichloropropane	0.79536	0.80745	0.80745	0.010	1.51924	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	50.67042	2.59621	0.010	1.34083	20.00000	Linear
87 4-Chlorotoluene	2.35872	2.50367	2.50367	0.010	6.14508	20.00000	Averaged
88 tert-Butylbenzene	50.00000	49.69206	2.25292	0.010	-0.61588	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	50.19209	2.64642	0.010	0.38418	20.00000	Linear
91 sec-Butylbenzene	50.00000	50.95484	3.20795	0.010	1.90969	20.00000	Linear
92 P-Isopropyltoluene	50.00000	49.69206	2.25292	0.010	-0.61588	20.00000	Linear
93 1,3-Dichlorobenzene	1.29740	1.32319	1.32319	0.010	1.98783	20.00000	Averaged
95 1,4-Dichlorobenzene	1.38019	1.35667	1.35667	0.010	-1.70352	20.00000	Averaged
97 N-Butylbenzene	50.00000	50.26289	2.47631	0.010	0.52577	20.00000	Linear
99 1,2-Dichlorobenzene	1.21598	1.26257	1.26257	0.010	3.83168	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	0.15390	0.15014	0.15014	0.010	-2.44016	20.00000	Averaged
102 Hexachlorobutadiene	0.37074	0.38144	0.38144	0.010	2.88602	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	48.09552	0.81702	0.010	-3.80896	20.00000	Linear
104 Naphthalene	50.00000	44.78046	1.68673	0.010	-10.43908	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	47.55068	0.71841	0.010	-4.89863	20.00000	Linear
34 Dibromofluoromethane	0.50309	0.49972	0.49972	0.010	-0.67110	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68515	0.67620	0.67620	0.010	-1.30734	20.00000	Averaged
58 Toluene-D8	1.17326	1.20079	1.20079	0.010	2.34661	20.00000	Averaged
78 P-Bromofluorobenzene	0.37925	0.39181	0.39181	0.010	3.31283	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225399-4
Lab File ID : T4714.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/26/18 09:01
Instrument ID: GCMS-T
Column ID:

*** = Compound out of QC criteria**

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4714.D
Report Date: 04-Apr-2018 05:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4714.D
Lab Smp Id: WG225399-4
Inj Date : 26-MAR-2018 09:01
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225399-4,SL2295
Misc Info : WG225399,WG225352-4,SL2295-1
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 11   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	230116	50.0000	50.6	
2	Chloromethane	50	1.549	1.549	(0.255)	307380	50.0000	50.3	
3	Vinyl chloride	62	1.614	1.614	(0.266)	193341	50.0000	51.8	
4	Bromomethane	94	1.850	1.850	(0.305)	59583	50.0000	45.6	
5	Chloroethane	64	1.950	1.943	(0.321)	91038	50.0000	52.2	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	301510	50.0000	52.9	
7	Diethyl Ether	59	2.293	2.293	(0.378)	129001	50.0000	50.0	
19	Tertiary-butyl alcohol	59	3.358	3.373	(0.553)	86995	250.000	239	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	141183	50.0000	49.8	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	411314	50.0000	48.6	
9	Freon-113	151	2.493	2.486	(0.411)	120580	50.0000	49.9	
11	Iodomethane	142	2.593	2.593	(0.427)	46435	50.0000	40.2	
12	Acrolein	56	2.765	2.765	(0.456)	220405	250.000	236	
14	Methylene Chloride	84	2.987	2.987	(0.492)	261843	50.0000	49.7	
15	Acetone	43	3.037	3.044	(0.500)	329588	250.000	263	
45	Isobutyl Alcohol	43	6.340	6.347	(1.045)	132457	1000.00	856	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	256192	50.0000	49.1	
13	Allyl Chloride	41	2.886	2.887	(0.476)	337917	50.0000	50.0	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	747858	50.0000	51.7	
20	Acetonitrile	41	3.537	3.537	(0.583)	257875	500.000	453	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	701953	50.0000	51.5	
22	Chloroprene	53	3.795	3.802	(0.625)	348973	50.0000	51.4	
39	Propionitrile	54	5.954	5.954	(0.981)	319671	500.000	492	

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Report Date: 04-Apr-2018 05:29

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	5.982	5.983	(0.986)	1370177	500.000	512	
	23	1,1-Dichloroethane	63	3.830	3.830	(0.631)	448526	50.0000	49.8	
	24	Acrylonitrile	52	3.902	3.909	(0.643)	365408	250.000	247	
	25	Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	691574	50.0000	48.3	
	26	Vinyl Acetate	43	4.166	4.166	(0.608)	486052	50.0000	49.8	
	27	cis-1,2-Dichloroethene	96	4.552	4.553	(0.750)	264671	50.0000	51.4	
M	98	1,2-Dichloroethylene (total)	96				520863	50.0000	100	
	52	Methyl Methacrylate	41	7.935	7.935	(1.157)	179742	50.0000	45.4	
	28	2,2-Dichloropropane	77	4.703	4.703	(0.775)	376253	50.0000	54.5	
	29	Bromochloromethane	128	4.846	4.853	(0.799)	123622	50.0000	51.8	
	31	Chloroform	83	4.981	4.982	(0.821)	453371	50.0000	50.2	
	32	Carbon Tetrachloride	117	5.167	5.168	(0.754)	301605	50.0000	51.1	
	33	Tetrahydrofuran	42	5.232	5.232	(0.862)	314445	250.000	236	
$	34	Dibromofluoromethane	113	5.275	5.275	(0.869)	251109	50.0000	49.7	
	35	1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	386625	50.0000	50.8	
	37	1,1-Dichloropropene	75	5.489	5.489	(0.801)	355106	50.0000	51.6	
	36	2-Butanone	43	5.496	5.496	(0.906)	511351	250.000	259	
	38	Benzene	78	5.875	5.875	(0.857)	1004570	50.0000	51.3	
*	41	Pentafluorobenzene	168	6.068	6.068	(1.000)	502502	50.0000		
	30	Cyclohexane	56	4.824	4.824	(0.795)	391257	50.0000	50.7	
	53	Ethyl Methacrylate	69	9.744	9.744	(1.421)	313768	50.0000	48.0	
$	42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	339790	50.0000	49.3	
	43	Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	656464	50.0000	50.8	
	44	1,2-Dichloroethane	62	6.204	6.204	(0.905)	360301	50.0000	49.4	
	47	Trichloroethene	95	6.769	6.776	(0.987)	263072	50.0000	48.9	
*	48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	778885	50.0000		
	49	Dibromomethane	93	7.377	7.384	(1.076)	162878	50.0000	51.6	
	50	1,2-Dichloropropane	63	7.534	7.534	(1.099)	247384	50.0000	52.1	
	51	Bromodichloromethane	83	7.648	7.649	(1.116)	327772	50.0000	52.7	
	57	cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	439561	50.0000	49.9	
	54	1,4-Dioxane	88	7.956	7.956	(1.161)	45389	1000.00	1000	
$	58	Toluene-D8	98	8.793	8.800	(1.283)	935280	50.0000	51.2	
	59	Toluene	92	8.864	8.864	(1.293)	603837	50.0000	51.3	
	61	4-methyl-2-pentanone	43	9.436	9.436	(1.377)	1007895	250.000	258	
	60	Tetrachloroethene	164	9.372	9.372	(0.861)	163542	50.0000	47.3	
	62	trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	386111	50.0000	51.0	
	63	1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	182282	50.0000	51.6	
	64	Dibromochloromethane	129	9.894	9.894	(0.909)	218543	50.0000	54.7	
	65	1,3-Dichloropropane	76	10.030	10.030	(0.921)	414238	50.0000	50.7	
	66	1,2-Dibromoethane	107	10.180	10.180	(1.485)	216463	50.0000	54.6	
	67	2-Hexanone	43	10.580	10.580	(0.972)	673108	250.000	245	
*	68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	638308	50.0000		
	69	Chlorobenzene	112	10.909	10.909	(1.002)	596675	50.0000	50.0	
	70	1-Chlorohexane	91	10.930	10.931	(1.004)	311152	50.0000	47.4	
	71	Ethylbenzene	106	10.973	10.974	(1.008)	329217	50.0000	52.3	
	72	1,1,1,2-Tetrachloroethane	131	11.009	11.016	(1.011)	199079	50.0000	52.5	
M	106	Xylenes (total)	106				1119198	150.000	158	
	73	m+p-Xylenes	106	11.181	11.181	(1.027)	764006	100.000	109	
	74	o-Xylene	106	11.738	11.739	(1.078)	355192	50.0000	48.4	
	75	Styrene	104	11.817	11.817	(1.085)	591276	50.0000	49.9	
	76	Bromoform	173	11.817	11.817	(1.085)	132212	50.0000	48.4	
	77	Isopropylbenzene	105	12.167	12.168	(0.871)	872413	50.0000	50.3	
$	78	P-Bromofluorobenzene	95	12.511	12.511	(1.825)	305176	50.0000	51.6	
	79	cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.905)	72785	50.0000	49.9	

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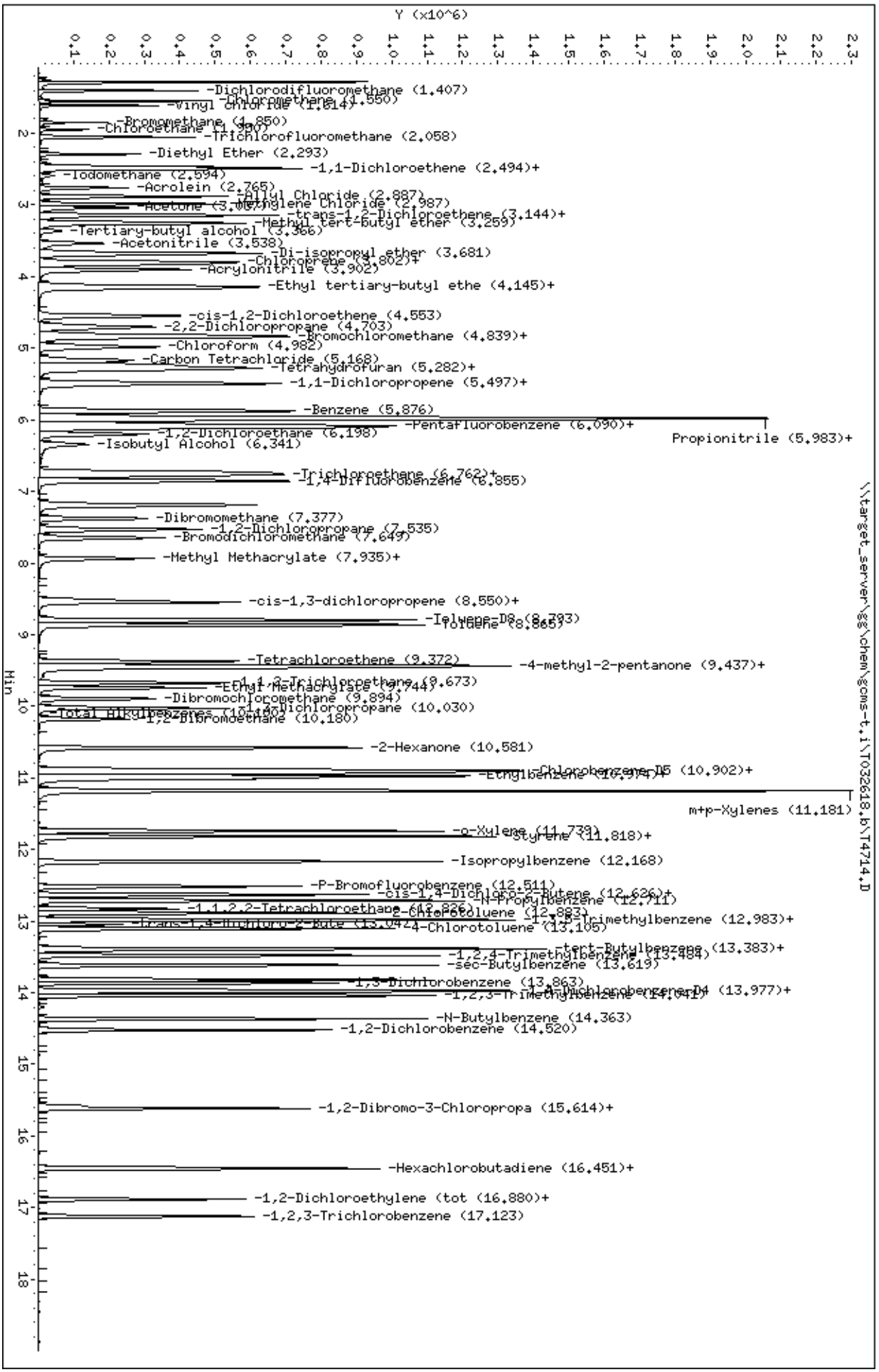
Report Date: 04-Apr-2018 05:29

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	86	trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	55111	50.0000	56.3	
	80	Bromobenzene	156	12.625	12.625	(0.904)	213777	50.0000	49.7	
	81	N-Propylbenzene	91	12.711	12.711	(0.910)	1114126	50.0000	53.1	
	82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.919)	236532	50.0000	47.5	
	85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.930)	723577	50.0000	50.7	
	83	2-Chlorotoluene	91	12.882	12.883	(0.923)	654826	50.0000	52.3	
	84	1,2,3-Trichloropropane	75	12.968	12.976	(0.929)	225039	50.0000	50.8	
	87	4-Chlorotoluene	91	13.104	13.104	(0.939)	697785	50.0000	53.1	
	88	tert-Butylbenzene	119	13.383	13.383	(0.959)	627900	50.0000	49.7	
	89	Pentachloroethane	165	13.390	13.397	(0.959)	87307	50.0000	54.5	
	90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.966)	737570	50.0000	50.2	
	92	P-Isopropyltoluene	119	13.383	13.383	(0.959)	627900	50.0000	49.7	
	93	1,3-Dichlorobenzene	146	13.862	13.862	(0.993)	368779	50.0000	51.0	
*	94	1,4-Dichlorobenzene-D4	152	13.962	13.969	(1.000)	278705	50.0000		
	95	1,4-Dichlorobenzene	146	13.984	13.984	(1.002)	378112	50.0000	49.1	
	97	N-Butylbenzene	91	14.363	14.363	(1.029)	690161	50.0000	50.3	
	91	sec-Butylbenzene	105	13.619	13.619	(0.975)	894072	50.0000	51.0	
	99	1,2-Dichlorobenzene	146	14.520	14.527	(1.040)	351885	50.0000	51.9	
	100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.116)	41845	50.0000	48.8	
	101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	264750	50.0000	48.7	
	102	Hexachlorobutadiene	225	16.443	16.443	(1.178)	106309	50.0000	51.4	
	103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.179)	227707	50.0000	48.1	
	96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.006)	747913	50.0000	52.2	
	104	Naphthalene	128	16.887	16.887	(1.209)	470101	50.0000	44.8	
	105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	200225	50.0000	47.6	
	17	Methyl Acetate	43	3.158	3.158	(0.520)	210497	50.0000	49.4	
	46	Methylcyclohexane	83	6.733	6.733	(1.110)	403540	50.0000	53.5	
M	55	Total Alkylbenzenes	100				5415306	50.0000	354	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Date : 26-MAR-2018 09:01
Client ID:
Sample Info: WG225399-4,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032618.b\T4714.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.907)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.293)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Acetone (3.087)
-Methylene Chloride (2.987)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.145)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.168)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Pentafluorobenzene (6.090)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.198)
-Isobutyl Alcohol (6.341)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.377)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.793)
Toluene (8.865)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Hexylbenzenes (10.140)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.626)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.042)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.383)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.619)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.451)+
-1,2-Dichloroethylene (tot (16.880)+
-1,2,3-Trichlorobenzene (17.123)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225399-5
Analytical Date: 03/26/18 19:33
Lab File ID : T4731.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.45216	0.37029	0.37029	0.010	-18.10652	20.00000	Averaged	
2	Chloromethane	50.00000	50.85131	0.61830	0.100	1.70262	20.00000	Linear	
3	Vinyl chloride	0.37165	0.42130	0.42130	0.010	13.35926	20.00000	Averaged	
4	Bromomethane	50.00000	59.14587	0.15269	0.010	18.29174	20.00000	Linear	
5	Chloroethane	0.17348	0.22230	0.22230	0.010	28.14069	20.00000	Averaged	*
6	Trichlorofluoromethane	0.56705	0.80452	0.80452	0.010	41.87803	20.00000	Averaged	*
8	1,1-Dichloroethene	0.28199	0.33027	0.33027	0.100	17.12263	20.00000	Averaged	
9	Freon-113	0.24040	0.29875	0.29875	0.010	24.27623	20.00000	Averaged	*
10	Carbon Disulfide	0.84219	0.98839	0.98839	0.010	17.35958	20.00000	Averaged	
14	Methylene Chloride	50.00000	49.36641	0.51761	0.010	-1.26718	20.00000	Linear	
15	Acetone	250	229	0.11509	0.010	-8.35729	20.00000	Linear	
16	trans-1,2-Dichloroethene	0.51884	0.49426	0.49426	0.010	-4.73660	20.00000	Averaged	
18	Methyl tert-butyl ether	1.43894	1.35789	1.35789	0.010	-5.63236	20.00000	Averaged	
23	1,1-Dichloroethane	0.89556	0.90141	0.90141	0.100	0.65376	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.51245	0.52590	0.52590	0.010	2.62489	20.00000	Averaged	
28	2,2-Dichloropropane	0.68633	0.63651	0.63651	0.010	-7.25782	20.00000	Averaged	
29	Bromochloromethane	0.23740	0.24410	0.24410	0.010	2.82277	20.00000	Averaged	
31	Chloroform	0.89941	0.91865	0.91865	0.010	2.13912	20.00000	Averaged	
32	Carbon Tetrachloride	50.00000	51.13010	0.38741	0.010	2.26019	20.00000	Linear	
35	1,1,1-Trichloroethane	0.75780	0.78065	0.78065	0.010	3.01600	20.00000	Averaged	
36	2-Butanone	0.19655	0.19601	0.19601	0.010	-0.27334	20.00000	Averaged	
37	1,1-Dichloropropene	0.44172	0.46105	0.46105	0.010	4.37612	20.00000	Averaged	
38	Benzene	1.25602	1.31509	1.31509	0.010	4.70312	20.00000	Averaged	
44	1,2-Dichloroethane	0.46845	0.48931	0.48931	0.010	4.45168	20.00000	Averaged	
47	Trichloroethene	0.34548	0.36282	0.36282	0.010	5.01898	20.00000	Averaged	
49	Dibromomethane	0.20280	0.21842	0.21842	0.010	7.70016	20.00000	Averaged	
50	1,2-Dichloropropane	0.30477	0.33194	0.33194	0.010	8.91334	20.00000	Averaged	
51	Bromodichloromethane	0.39921	0.44324	0.44324	0.010	11.03044	20.00000	Averaged	
57	cis-1,3-dichloropropene	50.00000	50.77379	0.57386	0.010	1.54757	20.00000	Linear	
59	Toluene	0.75610	0.81113	0.81113	0.010	7.27900	20.00000	Averaged	
60	Tetrachloroethene	0.27104	0.25232	0.25232	0.010	-6.90627	20.00000	Averaged	
61	4-methyl-2-pentanone	250	268	0.26811	0.010	7.12153	20.00000	Linear	
62	trans-1,3-Dichloropropene	50.00000	51.88433	0.50444	0.010	3.76865	20.00000	Linear	
63	1,1,2-Trichloroethane	0.22692	0.25038	0.25038	0.010	10.33710	20.00000	Averaged	
64	Dibromochloromethane	0.31292	0.33501	0.33501	0.010	7.06037	20.00000	Averaged	
65	1,3-Dichloropropane	0.64044	0.65939	0.65939	0.010	2.95801	20.00000	Averaged	
66	1,2-Dibromoethane	0.25465	0.28237	0.28237	0.010	10.88492	20.00000	Averaged	
67	2-Hexanone	250	238	0.20497	0.010	-4.74361	20.00000	Linear	
69	Chlorobenzene	0.93369	0.96986	0.96986	0.300	3.87429	20.00000	Averaged	
71	Ethylbenzene	0.49318	0.52851	0.52851	0.010	7.16375	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	0.29678	0.32034	0.32034	0.010	7.93883	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225399-5
Analytical Date: 03/26/18 19:33
Lab File ID : T4731.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.54774	0.61089	0.61089	0.010	11.52915	20.00000	Averaged
74 o-Xylene	50.00000	48.75803	0.56119	0.010	-2.48394	20.00000	Linear
75 Styrene	50.00000	51.71250	0.96026	0.010	3.42500	20.00000	Linear
76 Bromoform	50.00000	49.87853	0.21350	0.100	-0.24295	20.00000	Linear
77 Isopropylbenzene	50.00000	49.66046	3.09035	0.010	-0.67909	20.00000	Linear
80 Bromobenzene	0.77129	0.77297	0.77297	0.010	0.21862	20.00000	Averaged
81 N-Propylbenzene	3.76550	4.09198	4.09198	0.010	8.67026	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.89343	0.85314	0.85314	0.300	-4.50955	20.00000	Averaged
83 2-Chlorotoluene	2.24454	2.37606	2.37606	0.010	5.85951	20.00000	Averaged
84 1,2,3-Trichloropropane	0.79536	0.79857	0.79857	0.010	0.40352	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	50.02850	2.56330	0.010	0.05700	20.00000	Linear
87 4-Chlorotoluene	2.35872	2.52794	2.52794	0.010	7.17417	20.00000	Averaged
88 tert-Butylbenzene	50.00000	49.74515	2.25534	0.010	-0.50970	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	50.35401	2.65498	0.010	0.70802	20.00000	Linear
91 sec-Butylbenzene	50.00000	50.94691	3.20745	0.010	1.89382	20.00000	Linear
92 P-Isopropyltoluene	50.00000	49.74515	2.25534	0.010	-0.50970	20.00000	Linear
93 1,3-Dichlorobenzene	1.29740	1.32211	1.32211	0.010	1.90454	20.00000	Averaged
95 1,4-Dichlorobenzene	1.38019	1.37592	1.37592	0.010	-0.30901	20.00000	Averaged
97 N-Butylbenzene	50.00000	50.81042	2.50352	0.010	1.62084	20.00000	Linear
99 1,2-Dichlorobenzene	1.21598	1.27467	1.27467	0.010	4.82661	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	0.15390	0.14187	0.14187	0.010	-7.81427	20.00000	Averaged
102 Hexachlorobutadiene	0.37074	0.35291	0.35291	0.010	-4.80806	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	45.36190	0.76941	0.010	-9.27620	20.00000	Linear
104 Naphthalene	50.00000	43.17922	1.62250	0.010	-13.64156	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	46.16351	0.69672	0.010	-7.67298	20.00000	Linear
34 Dibromofluoromethane	0.50309	0.50069	0.50069	0.010	-0.47782	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68515	0.71277	0.71277	0.010	4.03125	20.00000	Averaged
58 Toluene-D8	1.17326	1.22888	1.22888	0.010	4.74047	20.00000	Averaged
78 P-Bromofluorobenzene	0.37925	0.41033	0.41033	0.010	8.19550	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225399-5
Lab File ID : T4731.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/26/18 19:33
Instrument ID: GCMS-T
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4731.D
Report Date: 04-Apr-2018 05:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4731.D
Lab Smp Id: WG225399-5
Inj Date : 26-MAR-2018 19:33
Operator : JSS Inst ID: gcms-t.i
Smp Info : WG225399-5,SL2295
Misc Info : WG225399,WG225352-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 18 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

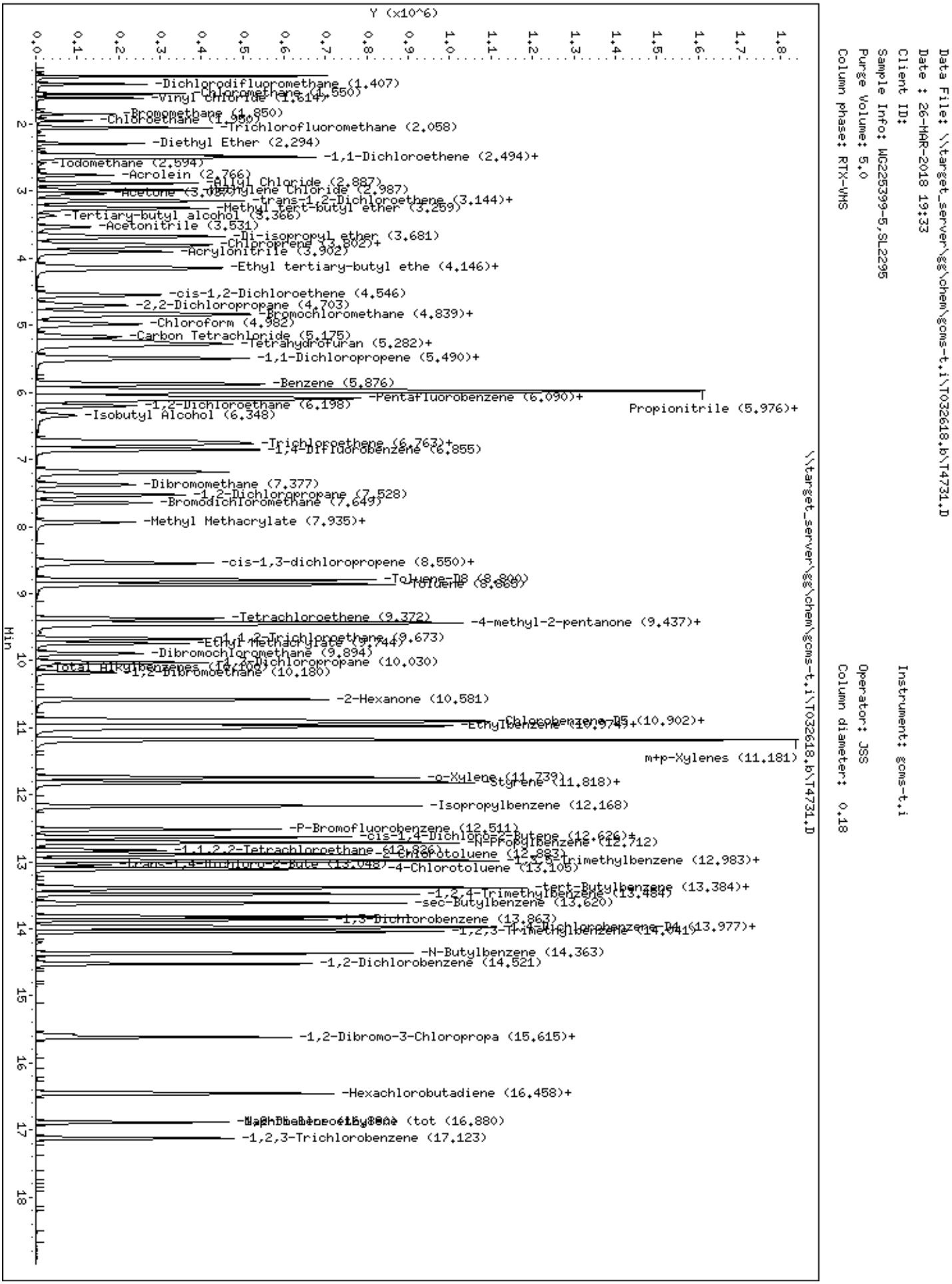
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	137157	50.0000	40.9	
2	Chloromethane	50	1.549	1.549	(0.255)	229022	50.0000	50.8	
3	Vinyl chloride	62	1.614	1.614	(0.266)	156053	50.0000	56.7	
4	Bromomethane	94	1.850	1.850	(0.305)	56558	50.0000	59.1	
5	Chloroethane	64	1.950	1.943	(0.321)	82342	50.0000	64.1	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	297998	50.0000	70.9	
7	Diethyl Ether	59	2.293	2.293	(0.378)	112839	50.0000	59.4	
19	Tertiary-butyl alcohol	59	3.366	3.373	(0.555)	51024	250.000	190	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	122334	50.0000	58.6	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	366106	50.0000	58.7	
9	Freon-113	151	2.486	2.486	(0.410)	110660	50.0000	62.1	
11	Iodomethane	142	2.593	2.593	(0.427)	13986	50.0000	18.8	
12	Acrolein	56	2.765	2.765	(0.456)	157315	250.000	229	
14	Methylene Chloride	84	2.987	2.987	(0.492)	191725	50.0000	49.4	
15	Acetone	43	3.037	3.044	(0.500)	213151	250.000	229	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	92620	1000.00	813	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	183078	50.0000	47.6	
13	Allyl Chloride	41	2.887	2.887	(0.476)	239872	50.0000	48.1	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	502969	50.0000	47.2	
20	Acetonitrile	41	3.537	3.537	(0.583)	181779	500.000	433	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	495667	50.0000	49.4	
22	Chloroprene	53	3.795	3.802	(0.625)	261527	50.0000	52.2	
39	Propionitrile	54	5.947	5.954	(0.980)	236325	500.000	493	

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4731.D
Report Date: 04-Apr-2018 05:29

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	40	Methacrylonitrile	41	5.983	5.983	(0.986)	1060464	500.000	538	
	23	1,1-Dichloroethane	63	3.823	3.830	(0.630)	333887	50.0000	50.3	
	24	Acrylonitrile	52	3.902	3.909	(0.643)	270449	250.000	248	
	25	Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	481415	50.0000	45.6	
	26	Vinyl Acetate	43	4.159	4.166	(0.607)	343449	50.0000	47.9	
	27	cis-1,2-Dichloroethene	96	4.545	4.553	(0.749)	194795	50.0000	51.3	
M	98	1,2-Dichloroethylene (total)	96				377873	50.0000	98.9	
	52	Methyl Methacrylate	41	7.935	7.935	(1.157)	132576	50.0000	45.5	
	28	2,2-Dichloropropane	77	4.703	4.703	(0.775)	235768	50.0000	46.4	
	29	Bromochloromethane	128	4.853	4.853	(0.800)	90416	50.0000	51.4	
	31	Chloroform	83	4.982	4.982	(0.821)	340271	50.0000	51.1	
	32	Carbon Tetrachloride	117	5.175	5.168	(0.755)	221777	50.0000	51.1	
	33	Tetrahydrofuran	42	5.232	5.232	(0.862)	221699	250.000	225	
$	34	Dibromofluoromethane	113	5.275	5.275	(0.869)	185458	50.0000	49.8	
	35	1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	289157	50.0000	51.5	
	37	1,1-Dichloropropene	75	5.489	5.489	(0.801)	263931	50.0000	52.2	
	36	2-Butanone	43	5.496	5.496	(0.906)	363016	250.000	249	
	38	Benzene	78	5.875	5.875	(0.857)	752834	50.0000	52.4	
*	41	Pentafluorobenzene	168	6.068	6.068	(1.000)	370405	50.0000		
	30	Cyclohexane	56	4.824	4.824	(0.795)	268416	50.0000	47.2	
	53	Ethyl Methacrylate	69	9.744	9.744	(1.421)	235194	50.0000	48.9	
$	42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	264015	50.0000	52.0	
	43	Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	461307	50.0000	48.4	
	44	1,2-Dichloroethane	62	6.204	6.204	(0.905)	280107	50.0000	52.2	
	47	Trichloroethene	95	6.769	6.776	(0.987)	207701	50.0000	52.5	
*	48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	572458	50.0000		
	49	Dibromomethane	93	7.377	7.384	(1.076)	125036	50.0000	53.8	
	50	1,2-Dichloropropane	63	7.534	7.534	(1.099)	190019	50.0000	54.4	
	51	Bromodichloromethane	83	7.649	7.649	(1.116)	253738	50.0000	55.5	
	57	cis-1,3-dichloropropene	75	8.550	8.550	(1.247)	328510	50.0000	50.8	
	54	1,4-Dioxane	88	7.949	7.956	(1.160)	20744	1000.00	625	
$	58	Toluene-D8	98	8.800	8.800	(1.284)	703482	50.0000	52.4	
	59	Toluene	92	8.864	8.864	(1.293)	464339	50.0000	53.6	
	61	4-methyl-2-pentanone	43	9.436	9.436	(1.377)	767408	250.000	268	
	60	Tetrachloroethene	164	9.372	9.372	(0.861)	124851	50.0000	46.5	
	62	trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	288771	50.0000	51.9	
	63	1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	143333	50.0000	55.2	
	64	Dibromochloromethane	129	9.894	9.894	(0.909)	165768	50.0000	53.5	
	65	1,3-Dichloropropane	76	10.030	10.030	(0.921)	326272	50.0000	51.5	
	66	1,2-Dibromoethane	107	10.180	10.180	(1.485)	161645	50.0000	55.4	
	67	2-Hexanone	43	10.580	10.580	(0.972)	507100	250.000	238	
*	68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	494811	50.0000		
	69	Chlorobenzene	112	10.909	10.909	(1.002)	479897	50.0000	51.9	
	70	1-Chlorohexane	91	10.931	10.931	(1.004)	240679	50.0000	47.3	
	71	Ethylbenzene	106	10.974	10.974	(1.008)	261515	50.0000	53.6	
	72	1,1,1,2-Tetrachloroethane	131	11.009	11.016	(1.011)	158510	50.0000	54.0	
M	106	Xylenes (total)	106				882233	150.000	160	
	73	m+p-Xylenes	106	11.181	11.181	(1.027)	604550	100.000	112	
	74	o-Xylene	106	11.739	11.739	(1.078)	277683	50.0000	48.8	
	75	Styrene	104	11.817	11.817	(1.085)	475146	50.0000	51.7	
	76	Bromoform	173	11.824	11.817	(1.086)	105642	50.0000	49.9	
	77	Isopropylbenzene	105	12.168	12.168	(0.871)	692958	50.0000	49.7	
$	78	P-Bromofluorobenzene	95	12.511	12.511	(1.825)	234896	50.0000	54.1	
	79	cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.905)	55486	50.0000	47.3	

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4731.D
Report Date: 04-Apr-2018 05:29

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	86	trans-1,4-Dichloro-2-Butene	53	13.054	13.047	(0.935)	42144	50.0000	53.5	
	80	Bromobenzene	156	12.625	12.625	(0.904)	173326	50.0000	50.1	
	81	N-Propylbenzene	91	12.711	12.711	(0.910)	917556	50.0000	54.3	
	82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.919)	191302	50.0000	47.7	
	85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.930)	574777	50.0000	50.0	
	83	2-Chlorotoluene	91	12.883	12.883	(0.923)	532792	50.0000	52.9	
	84	1,2,3-Trichloropropane	75	12.976	12.976	(0.929)	179066	50.0000	50.2	
	87	4-Chlorotoluene	91	13.104	13.104	(0.939)	566848	50.0000	53.6	
	88	tert-Butylbenzene	119	13.383	13.383	(0.959)	505721	50.0000	49.7	
	89	Pentachloroethane	165	13.397	13.397	(0.960)	71834	50.0000	55.7	
	90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.966)	595334	50.0000	50.4	
	92	P-Isopropyltoluene	119	13.383	13.383	(0.959)	505721	50.0000	49.7	
	93	1,3-Dichlorobenzene	146	13.862	13.862	(0.993)	296460	50.0000	51.0	
*	94	1,4-Dichlorobenzene-D4	152	13.962	13.969	(1.000)	224233	50.0000		
	95	1,4-Dichlorobenzene	146	13.984	13.984	(1.002)	308527	50.0000	49.8	
	97	N-Butylbenzene	91	14.363	14.363	(1.029)	561371	50.0000	50.8	
	91	sec-Butylbenzene	105	13.619	13.619	(0.975)	719217	50.0000	50.9	
	99	1,2-Dichlorobenzene	146	14.520	14.527	(1.040)	285823	50.0000	52.4	
	100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.116)	31812	50.0000	46.1	
	101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	205973	50.0000	47.1	
	102	Hexachlorobutadiene	225	16.443	16.443	(1.178)	79135	50.0000	47.6	
	103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.179)	172527	50.0000	45.4	
	96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.006)	627969	50.0000	54.5	
	104	Naphthalene	128	16.887	16.887	(1.209)	363819	50.0000	43.2	
	105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	156228	50.0000	46.2	
	17	Methyl Acetate	43	3.158	3.158	(0.520)	148494	50.0000	47.3	
	46	Methylcyclohexane	83	6.733	6.733	(1.110)	291300	50.0000	52.4	
M	55	Total Alkylbenzenes	100				4379697	50.0000	356	


Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4731.D
Date : 26-MAR-2018 19:33
Client ID:
Sample Info: WG225399-5,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-t.i\T032618.b\T4731.D
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl Chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.950)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.766)
-Allyl Chloride (2.887)
-Acetone (3.087)
-Methylene Chloride (2.987)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.531)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.146)+
-cis-1,2-Dichloroethene (4.546)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.490)+
-Benzene (5.876)
-Pentafluorobenzene (6.090)+
Propionitrile (5.976)+
-1,2-Dichloroethane (6.198)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.763)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.377)
-1,2-Dichloropropane (7.528)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.865)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Alkylbenzenes (10.100)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.739)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.626)+
-N-Propylbenzene (12.712)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.048)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.384)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.521)
-1,2-Dibromo-3-Chloropropa (15.615)+
-Hexachlorobutadiene (16.458)+
-Naphthalene (16.880)
-Naphthalene (16.880) (tot (16.880)
-1,2,3-Trichlorobenzene (17.123)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225462-4
Analytical Date: 03/27/18 11:57
Lab File ID : T4740.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.45216	0.46461	0.46461	0.010	2.75266	20.00000	Averaged	
2	Chloromethane	50.00000	55.16874	0.66764	0.100	10.33748	20.00000	Linear	
3	Vinyl chloride	0.37165	0.44540	0.44540	0.010	19.84226	20.00000	Averaged	
4	Bromomethane	50.00000	51.23861	0.13270	0.010	2.47722	20.00000	Linear	
5	Chloroethane	0.17348	0.20476	0.20476	0.010	18.02925	20.00000	Averaged	
6	Trichlorofluoromethane	0.56705	0.67639	0.67639	0.010	19.28307	20.00000	Averaged	
8	1,1-Dichloroethene	0.28199	0.30079	0.30079	0.100	6.66885	20.00000	Averaged	
9	Freon-113	0.24040	0.27126	0.27126	0.010	12.83831	20.00000	Averaged	
10	Carbon Disulfide	0.84219	0.92334	0.92334	0.010	9.63512	20.00000	Averaged	
14	Methylene Chloride	50.00000	52.00482	0.54506	0.010	4.00964	20.00000	Linear	
15	Acetone	250	350	0.17307	0.010	39.94362	20.00000	Linear	*
16	trans-1,2-Dichloroethene	0.51884	0.54216	0.54216	0.010	4.49526	20.00000	Averaged	
18	Methyl tert-butyl ether	1.43894	1.52332	1.52332	0.010	5.86427	20.00000	Averaged	
23	1,1-Dichloroethane	0.89556	0.95579	0.95579	0.100	6.72565	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.51245	0.55055	0.55055	0.010	7.43492	20.00000	Averaged	
28	2,2-Dichloropropane	0.68633	0.79676	0.79676	0.010	16.09041	20.00000	Averaged	
29	Bromochloromethane	0.23740	0.25624	0.25624	0.010	7.93652	20.00000	Averaged	
31	Chloroform	0.89941	0.94716	0.94716	0.010	5.30955	20.00000	Averaged	
32	Carbon Tetrachloride	50.00000	53.17274	0.40325	0.010	6.34548	20.00000	Linear	
35	1,1,1-Trichloroethane	0.75780	0.80545	0.80545	0.010	6.28885	20.00000	Averaged	
36	2-Butanone	0.19655	0.23246	0.23246	0.010	18.27095	20.00000	Averaged	
37	1,1-Dichloropropene	0.44172	0.48923	0.48923	0.010	10.75563	20.00000	Averaged	
38	Benzene	1.25602	1.35402	1.35402	0.010	7.80288	20.00000	Averaged	
44	1,2-Dichloroethane	0.46845	0.49284	0.49284	0.010	5.20627	20.00000	Averaged	
47	Trichloroethene	0.34548	0.36157	0.36157	0.010	4.65649	20.00000	Averaged	
49	Dibromomethane	0.20280	0.21553	0.21553	0.010	6.27486	20.00000	Averaged	
50	1,2-Dichloropropane	0.30477	0.34140	0.34140	0.010	12.01952	20.00000	Averaged	
51	Bromodichloromethane	0.39921	0.44596	0.44596	0.010	11.71136	20.00000	Averaged	
57	cis-1,3-dichloropropene	50.00000	53.17287	0.60145	0.010	6.34574	20.00000	Linear	
59	Toluene	0.75610	0.81032	0.81032	0.010	7.17110	20.00000	Averaged	
60	Tetrachloroethene	0.27104	0.27103	0.27103	0.010	-0.00399	20.00000	Averaged	
61	4-methyl-2-pentanone	250	274	0.27436	0.010	9.64273	20.00000	Linear	
62	trans-1,3-Dichloropropene	50.00000	52.64086	0.51190	0.010	5.28172	20.00000	Linear	
63	1,1,2-Trichloroethane	0.22692	0.24941	0.24941	0.010	9.90699	20.00000	Averaged	
64	Dibromochloromethane	0.31292	0.34845	0.34845	0.010	11.35589	20.00000	Averaged	
65	1,3-Dichloropropane	0.64044	0.69396	0.69396	0.010	8.35663	20.00000	Averaged	
66	1,2-Dibromoethane	0.25465	0.28197	0.28197	0.010	10.72693	20.00000	Averaged	
67	2-Hexanone	250	265	0.22811	0.010	5.91557	20.00000	Linear	
69	Chlorobenzene	0.93369	0.98190	0.98190	0.300	5.16384	20.00000	Averaged	
71	Ethylbenzene	0.49318	0.54242	0.54242	0.010	9.98316	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	0.29678	0.31983	0.31983	0.010	7.76481	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225462-4
Analytical Date: 03/27/18 11:57
Lab File ID : T4740.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.54774	0.63492	0.63492	0.010	15.91572	20.00000	Averaged
74 o-Xylene	50.00000	50.79187	0.58514	0.010	1.58373	20.00000	Linear
75 Styrene	50.00000	52.13258	0.96818	0.010	4.26516	20.00000	Linear
76 Bromoform	50.00000	50.26632	0.21522	0.100	0.53264	20.00000	Linear
77 Isopropylbenzene	50.00000	53.98457	3.35940	0.010	7.96915	20.00000	Linear
80 Bromobenzene	0.77129	0.82315	0.82315	0.010	6.72481	20.00000	Averaged
81 N-Propylbenzene	3.76550	4.31711	4.31711	0.010	14.64921	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.89343	0.90836	0.90836	0.300	1.67170	20.00000	Averaged
83 2-Chlorotoluene	2.24454	2.49995	2.49995	0.010	11.37911	20.00000	Averaged
84 1,2,3-Trichloropropane	0.79536	0.82956	0.82956	0.010	4.30024	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	53.54760	2.74371	0.010	7.09519	20.00000	Linear
87 4-Chlorotoluene	2.35872	2.64834	2.64834	0.010	12.27849	20.00000	Averaged
88 tert-Butylbenzene	50.00000	52.84808	2.39662	0.010	5.69616	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	53.15503	2.80308	0.010	6.31005	20.00000	Linear
91 sec-Butylbenzene	50.00000	54.11517	3.40604	0.010	8.23033	20.00000	Linear
92 P-Isopropyltoluene	50.00000	52.84808	2.39662	0.010	5.69616	20.00000	Linear
93 1,3-Dichlorobenzene	1.29740	1.40563	1.40563	0.010	8.34210	20.00000	Averaged
95 1,4-Dichlorobenzene	1.38019	1.43663	1.43663	0.010	4.08954	20.00000	Averaged
97 N-Butylbenzene	50.00000	53.57591	2.64091	0.010	7.15182	20.00000	Linear
99 1,2-Dichlorobenzene	1.21598	1.32152	1.32152	0.010	8.67974	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	0.15390	0.15552	0.15552	0.010	1.05532	20.00000	Averaged
102 Hexachlorobutadiene	0.37074	0.39691	0.39691	0.010	7.06028	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	49.93901	0.84912	0.010	-0.12198	20.00000	Linear
104 Naphthalene	50.00000	47.28255	1.78710	0.010	-5.43491	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	49.60817	0.75058	0.010	-0.78365	20.00000	Linear
34 Dibromofluoromethane	0.50309	0.49930	0.49930	0.010	-0.75326	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68515	0.67504	0.67504	0.010	-1.47592	20.00000	Averaged
58 Toluene-D8	1.17326	1.18094	1.18094	0.010	0.65423	20.00000	Averaged
78 P-Bromofluorobenzene	0.37925	0.40155	0.40155	0.010	5.88098	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225462-4
Lab File ID : T4740.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/27/18 11:57
Instrument ID: GCMS-T
Column ID:

*** = Compound out of QC criteria**

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4740.D
Report Date: 04-Apr-2018 05:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4740.D
Lab Smp Id: WG225462-4
Inj Date : 27-MAR-2018 11:57
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225462-4,SL2295
Misc Info : WG225462,WG225352-4,SL2295-1
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 04-Apr-2018 05:36 gcms-t.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 2   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

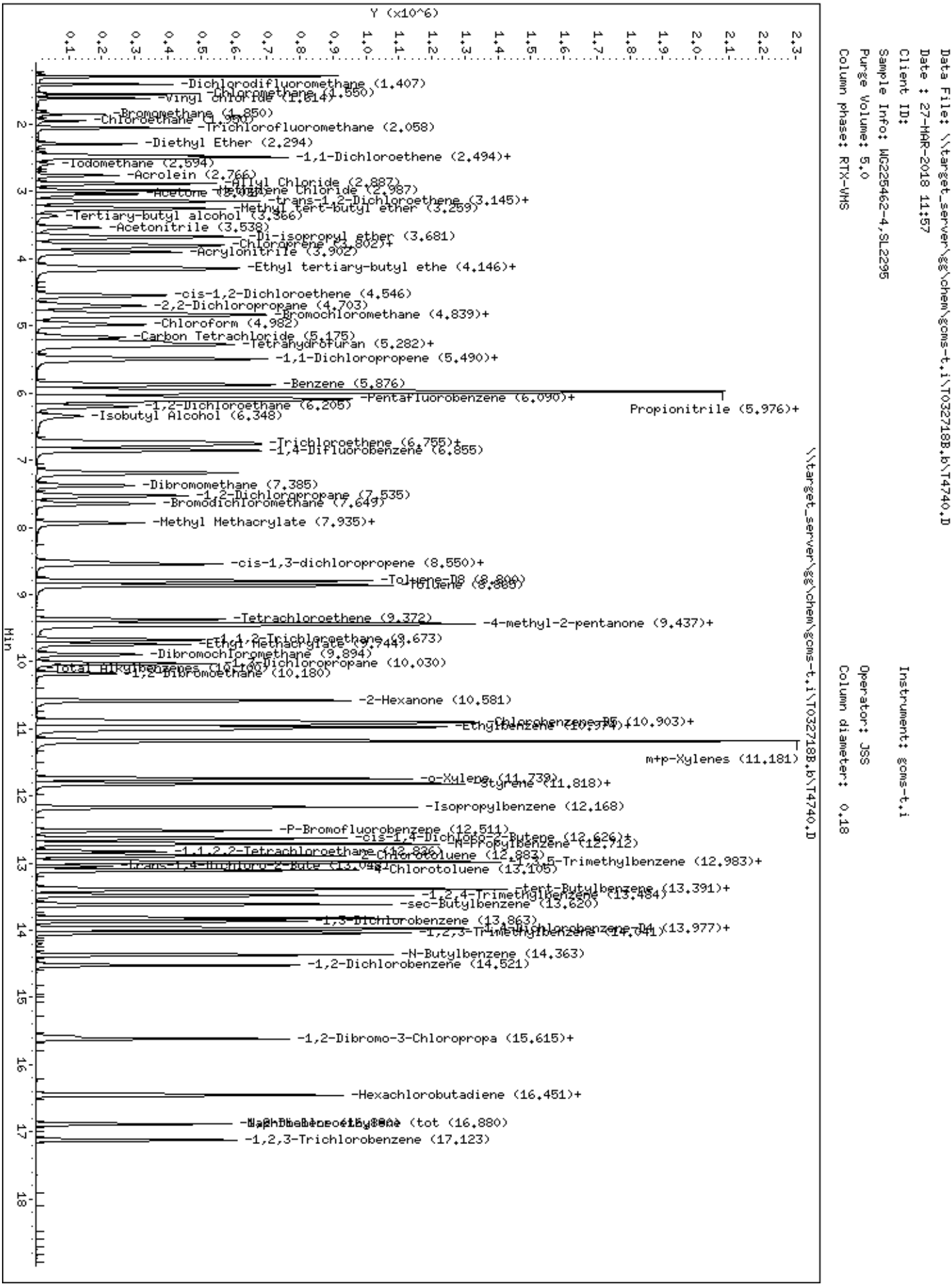
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	217306	50.0000	51.4	
2	Chloromethane	50	1.550	1.549	(0.255)	312268	50.0000	55.2	
3	Vinyl chloride	62	1.614	1.614	(0.266)	208322	50.0000	59.9	
4	Bromomethane	94	1.850	1.850	(0.305)	62067	50.0000	51.2	
5	Chloroethane	64	1.950	1.943	(0.321)	95771	50.0000	59.0	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	316364	50.0000	59.6	
7	Diethyl Ether	59	2.293	2.293	(0.378)	133960	50.0000	55.8	
19	Tertiary-butyl alcohol	59	3.366	3.373	(0.555)	85304	250.000	252	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	140687	50.0000	53.3	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	431865	50.0000	54.8	
9	Freon-113	151	2.493	2.486	(0.411)	126873	50.0000	56.4	
11	Iodomethane	142	2.593	2.593	(0.427)	53020	50.0000	48.0	
12	Acrolein	56	2.765	2.765	(0.456)	220343	250.000	254	
14	Methylene Chloride	84	2.987	2.987	(0.492)	254937	50.0000	52.0	
15	Acetone	43	3.044	3.044	(0.502)	404736	250.000	350	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	139582	1000.00	967	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	253581	50.0000	52.2	
13	Allyl Chloride	41	2.887	2.887	(0.476)	344578	50.0000	54.7	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	712488	50.0000	52.9	
20	Acetonitrile	41	3.537	3.537	(0.583)	270415	500.000	510	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	708390	50.0000	55.9	
22	Chloroprene	53	3.795	3.802	(0.625)	353549	50.0000	55.9	
39	Propionitrile	54	5.954	5.954	(0.981)	330795	500.000	546	
40	Methacrylonitrile	41	5.976	5.983	(0.985)	1391753	500.000	559	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4740.D
Report Date: 04-Apr-2018 05:36

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	447042	50.0000	53.4	
	24 Acrylonitrile	52	3.902	3.909	(0.643)	366978	250.000	267	
	25 Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	686170	50.0000	51.5	
	26 Vinyl Acetate	43	4.159	4.166	(0.607)	484777	50.0000	53.0	
	27 cis-1,2-Dichloroethene	96	4.545	4.553	(0.749)	257502	50.0000	53.7	
	52 Methyl Methacrylate	41	7.935	7.935	(1.157)	183341	50.0000	49.2	
	28 2,2-Dichloropropane	77	4.710	4.703	(0.776)	372661	50.0000	58.0	
	29 Bromochloromethane	128	4.846	4.853	(0.799)	119849	50.0000	54.0	
	31 Chloroform	83	4.982	4.982	(0.821)	443007	50.0000	52.6	
	32 Carbon Tetrachloride	117	5.168	5.168	(0.754)	294470	50.0000	53.2	
	33 Tetrahydrofuran	42	5.232	5.232	(0.862)	310471	250.000	250	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	233535	50.0000	49.6	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	376727	50.0000	53.1	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	357252	50.0000	55.4	
	36 2-Butanone	43	5.496	5.496	(0.906)	543629	250.000	296	
	38 Benzene	78	5.875	5.875	(0.857)	988757	50.0000	53.9	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	467721	50.0000		
	30 Cyclohexane	56	4.824	4.824	(0.795)	382497	50.0000	53.2	
	53 Ethyl Methacrylate	69	9.744	9.744	(1.421)	312717	50.0000	50.9	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	315731	50.0000	49.3	
	43 Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	636235	50.0000	52.9	
	44 1,2-Dichloroethane	62	6.197	6.204	(0.904)	359890	50.0000	52.6	
	47 Trichloroethene	95	6.776	6.776	(0.989)	264032	50.0000	52.3	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	730236	50.0000		
	49 Dibromomethane	93	7.384	7.384	(1.077)	157387	50.0000	53.1	
	50 1,2-Dichloropropane	63	7.534	7.534	(1.099)	249304	50.0000	56.0	
	51 Bromodichloromethane	83	7.649	7.649	(1.116)	325657	50.0000	55.8	
	57 cis-1,3-dichloropropene	75	8.550	8.550	(1.247)	439203	50.0000	53.2	
	54 1,4-Dioxane	88	7.956	7.956	(1.161)	42122	1000.00	995	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	862363	50.0000	50.3	
	59 Toluene	92	8.864	8.864	(1.293)	591722	50.0000	53.6	
	61 4-methyl-2-pentanone	43	9.436	9.436	(1.377)	1001753	250.000	274	
	60 Tetrachloroethene	164	9.372	9.372	(0.861)	163557	50.0000	50.0	
	62 trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	373805	50.0000	52.6	
	63 1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	182125	50.0000	55.0	
	64 Dibromochloromethane	129	9.894	9.894	(0.909)	210281	50.0000	55.7	
	65 1,3-Dichloropropane	76	10.030	10.030	(0.921)	418784	50.0000	54.2	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	205903	50.0000	55.4	
	67 2-Hexanone	43	10.580	10.580	(0.972)	688280	250.000	265	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	603468	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	592545	50.0000	52.6	
	70 1-Chlorohexane	91	10.931	10.931	(1.004)	306321	50.0000	49.3	
	71 Ethylbenzene	106	10.974	10.974	(1.008)	327333	50.0000	55.0	
	72 1,1,1,2-Tetrachloroethane	131	11.009	11.016	(1.011)	193006	50.0000	53.9	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	766304	100.000	116	
	74 o-Xylene	106	11.739	11.739	(1.078)	353113	50.0000	50.8	
	75 Styrene	104	11.817	11.817	(1.085)	584264	50.0000	52.1	
	76 Bromoform	173	11.817	11.817	(1.085)	129879	50.0000	50.3	
	77 Isopropylbenzene	105	12.168	12.168	(0.871)	875232	50.0000	54.0	
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	293227	50.0000	52.9	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	72582	50.0000	53.1	
	86 trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	55457	50.0000	60.6	
	80 Bromobenzene	156	12.625	12.625	(0.904)	214458	50.0000	53.4	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	1124746	50.0000	57.3	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4740.D
Report Date: 04-Apr-2018 05:36

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	236658	50.0000	50.8	
85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.929)	714825	50.0000	53.5	
83	2-Chlorotoluene	91	12.883	12.883	(0.922)	651318	50.0000	55.7	
84	1,2,3-Trichloropropane	75	12.976	12.976	(0.929)	216128	50.0000	52.2	
87	4-Chlorotoluene	91	13.104	13.104	(0.938)	689977	50.0000	56.1	
88	tert-Butylbenzene	119	13.383	13.383	(0.958)	624396	50.0000	52.8	
89	Pentachloroethane	165	13.397	13.397	(0.959)	89414	50.0000	59.7	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	730292	50.0000	53.2	
92	P-Isopropyltoluene	119	13.383	13.383	(0.958)	624396	50.0000	52.8	
93	1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	366211	50.0000	54.2	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	260532	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	374288	50.0000	52.0	
97	N-Butylbenzene	91	14.363	14.363	(1.028)	688042	50.0000	53.6	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	887383	50.0000	54.1	
99	1,2-Dichlorobenzene	146	14.520	14.527	(1.039)	344299	50.0000	54.3	
100	1,2-Dibromo-3-Chloropropane	75	15.571	15.578	(1.115)	40518	50.0000	50.5	
101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	256532	50.0000	50.4	
102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	103409	50.0000	53.5	
103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	221224	50.0000	49.9	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	751408	50.0000	56.1	
104	Naphthalene	128	16.880	16.887	(1.208)	465596	50.0000	47.3	
105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	195551	50.0000	49.6	
17	Methyl Acetate	43	3.158	3.158	(0.520)	202694	50.0000	51.1	
46	Methylcyclohexane	83	6.741	6.733	(1.111)	398162	50.0000	56.7	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Date : 27-MAR-2018 11:57
Client ID:
Sample Info: WG225462-4,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4740.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.950)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.766)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-trans-1,2-Dichloroethene (3.145)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.146)+
-cis-1,2-Dichloroethene (4.546)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.490)+
-Benzene (5.876)
-Pentafluorobenzene (6.090)+
Propionitrile (5.976)+
-1,2-Dichloroethane (6.205)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.755)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.385)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.865)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Alkylbenzenes (10.100)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.903)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.739)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.626)+
-N-Propylbenzene (12.712)
-1,1,2,2-Tetrachloroethane (12.836)
-2-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.048)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.521)
-1,2-Dibromo-3-Chloropropa (15.615)+
-Hexachlorobutadiene (16.451)+
-1,2,3-Trichlorobenzene (17.123)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225462-5
Analytical Date: 03/27/18 22:25
Lab File ID : T4757.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.45216	0.45569	0.45569	0.010	0.78169	20.00000	Averaged	
2	Chloromethane	50.00000	54.04041	0.65474	0.100	8.08083	20.00000	Linear	
3	Vinyl chloride	0.37165	0.44421	0.44421	0.010	19.52198	20.00000	Averaged	
4	Bromomethane	50.00000	55.58192	0.14368	0.010	11.16384	20.00000	Linear	
5	Chloroethane	0.17348	0.22091	0.22091	0.010	27.33677	20.00000	Averaged	*
6	Trichlorofluoromethane	0.56705	0.73754	0.73754	0.010	30.06543	20.00000	Averaged	*
8	1,1-Dichloroethene	0.28199	0.30866	0.30866	0.100	9.45915	20.00000	Averaged	
9	Freon-113	0.24040	0.44118	0.44118	0.010	83.52427	20.00000	Averaged	*
10	Carbon Disulfide	0.84219	0.94361	0.94361	0.010	12.04159	20.00000	Averaged	
14	Methylene Chloride	50.00000	49.72358	0.52133	0.010	-0.55283	20.00000	Linear	
15	Acetone	250	241	0.12075	0.010	-3.64358	20.00000	Linear	
16	trans-1,2-Dichloroethene	0.51884	0.49792	0.49792	0.010	-4.03165	20.00000	Averaged	
18	Methyl tert-butyl ether	1.43894	1.42184	1.42184	0.010	-1.18788	20.00000	Averaged	
23	1,1-Dichloroethane	0.89556	0.89126	0.89126	0.100	-0.47942	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.51245	0.51803	0.51803	0.010	1.08881	20.00000	Averaged	
28	2,2-Dichloropropane	0.68633	0.59233	0.59233	0.010	-13.69508	20.00000	Averaged	
29	Bromochloromethane	0.23740	0.23996	0.23996	0.010	1.07811	20.00000	Averaged	
31	Chloroform	0.89941	0.88629	0.88629	0.010	-1.45869	20.00000	Averaged	
32	Carbon Tetrachloride	50.00000	49.78286	0.37696	0.010	-0.43428	20.00000	Linear	
35	1,1,1-Trichloroethane	0.75780	0.74901	0.74901	0.010	-1.15969	20.00000	Averaged	
36	2-Butanone	0.19655	0.20173	0.20173	0.010	2.63591	20.00000	Averaged	
37	1,1-Dichloropropene	0.44172	0.45293	0.45293	0.010	2.53760	20.00000	Averaged	
38	Benzene	1.25602	1.28362	1.28362	0.010	2.19761	20.00000	Averaged	
44	1,2-Dichloroethane	0.46845	0.47074	0.47074	0.010	0.48945	20.00000	Averaged	
47	Trichloroethene	0.34548	0.33755	0.33755	0.010	-2.29739	20.00000	Averaged	
49	Dibromomethane	0.20280	0.21186	0.21186	0.010	4.46761	20.00000	Averaged	
50	1,2-Dichloropropane	0.30477	0.31910	0.31910	0.010	4.70128	20.00000	Averaged	
51	Bromodichloromethane	0.39921	0.43079	0.43079	0.010	7.91130	20.00000	Averaged	
57	cis-1,3-dichloropropene	50.00000	48.07854	0.54286	0.010	-3.84291	20.00000	Linear	
59	Toluene	0.75610	0.78979	0.78979	0.010	4.45580	20.00000	Averaged	
60	Tetrachloroethene	0.27104	0.24447	0.24447	0.010	-9.80223	20.00000	Averaged	
61	4-methyl-2-pentanone	250	269	0.26909	0.010	7.51740	20.00000	Linear	
62	trans-1,3-Dichloropropene	50.00000	49.10841	0.47708	0.010	-1.78317	20.00000	Linear	
63	1,1,2-Trichloroethane	0.22692	0.24559	0.24559	0.010	8.22500	20.00000	Averaged	
64	Dibromochloromethane	0.31292	0.32932	0.32932	0.010	5.24066	20.00000	Averaged	
65	1,3-Dichloropropane	0.64044	0.64517	0.64517	0.010	0.73745	20.00000	Averaged	
66	1,2-Dibromoethane	0.25465	0.27610	0.27610	0.010	8.42272	20.00000	Averaged	
67	2-Hexanone	250	244	0.20991	0.010	-2.46660	20.00000	Linear	
69	Chlorobenzene	0.93369	0.92057	0.92057	0.300	-1.40499	20.00000	Averaged	
71	Ethylbenzene	0.49318	0.50658	0.50658	0.010	2.71534	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	0.29678	0.30718	0.30718	0.010	3.50181	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225462-5
Lab File ID : T4757.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/27/18 22:25
Instrument ID: GCMS-T
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.54774	0.59139	0.59139	0.010	7.96890	20.00000	Averaged
74 o-Xylene	50.00000	47.27655	0.54374	0.010	-5.44691	20.00000	Linear
75 Styrene	50.00000	49.39385	0.91654	0.010	-1.21229	20.00000	Linear
76 Bromoform	50.00000	47.34955	0.20227	0.100	-5.30089	20.00000	Linear
77 Isopropylbenzene	50.00000	48.28002	3.00445	0.010	-3.43996	20.00000	Linear
80 Bromobenzene	0.77129	0.74394	0.74394	0.010	-3.54594	20.00000	Averaged
81 N-Propylbenzene	3.76550	3.95130	3.95130	0.010	4.93435	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.89343	0.86160	0.86160	0.300	-3.56293	20.00000	Averaged
83 2-Chlorotoluene	2.24454	2.32306	2.32306	0.010	3.49806	20.00000	Averaged
84 1,2,3-Trichloropropane	0.79536	0.80249	0.80249	0.010	0.89612	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	49.02983	2.51210	0.010	-1.94035	20.00000	Linear
87 4-Chlorotoluene	2.35872	2.47003	2.47003	0.010	4.71901	20.00000	Averaged
88 tert-Butylbenzene	50.00000	49.02144	2.22239	0.010	-1.95713	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	49.20760	2.59436	0.010	-1.58481	20.00000	Linear
91 sec-Butylbenzene	50.00000	48.87798	3.07777	0.010	-2.24405	20.00000	Linear
92 P-Isopropyltoluene	50.00000	49.02144	2.22239	0.010	-1.95713	20.00000	Linear
93 1,3-Dichlorobenzene	1.29740	1.28548	1.28548	0.010	-0.91827	20.00000	Averaged
95 1,4-Dichlorobenzene	1.38019	1.33396	1.33396	0.010	-3.34893	20.00000	Averaged
97 N-Butylbenzene	50.00000	48.79079	2.40318	0.010	-2.41841	20.00000	Linear
99 1,2-Dichlorobenzene	1.21598	1.23078	1.23078	0.010	1.21688	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	0.15390	0.14352	0.14352	0.010	-6.74312	20.00000	Averaged
102 Hexachlorobutadiene	0.37074	0.34538	0.34538	0.010	-6.83943	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	43.96918	0.74515	0.010	-12.06164	20.00000	Linear
104 Naphthalene	50.00000	44.99625	1.69539	0.010	-10.00751	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	45.95307	0.69343	0.010	-8.09387	20.00000	Linear
34 Dibromofluoromethane	0.50309	0.49515	0.49515	0.010	-1.57823	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68515	0.70236	0.70236	0.010	2.51140	20.00000	Averaged
58 Toluene-D8	1.17326	1.19598	1.19598	0.010	1.93658	20.00000	Averaged
78 P-Bromofluorobenzene	0.37925	0.40065	0.40065	0.010	5.64216	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225462-5
Lab File ID : T4757.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/27/18 22:25
Instrument ID: GCMS-T
Column ID:

*** = Compound out of QC criteria**

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sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4757.D
Report Date: 04-Apr-2018 05:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4757.D
Lab Smp Id: WG225462-5
Inj Date : 27-MAR-2018 22:25
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225462-5,SL2295
Misc Info : WG225462,WG225352-4,SL2295-1
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 04-Apr-2018 05:36 gcms-t.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 19   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

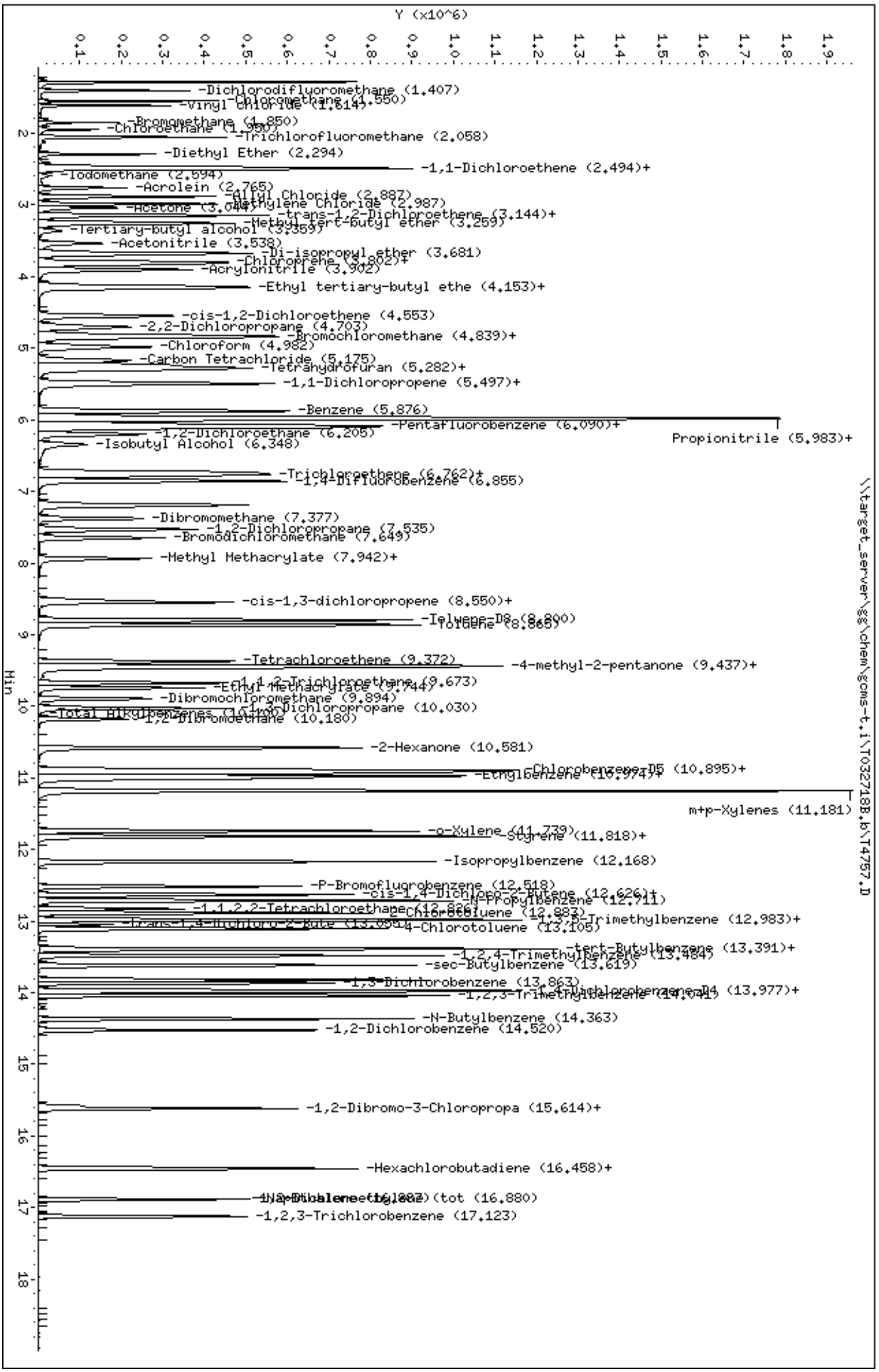
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	185190	50.0000	50.4	
2	Chloromethane	50	1.549	1.549	(0.255)	266082	50.0000	54.0	
3	Vinyl chloride	62	1.614	1.614	(0.266)	180522	50.0000	59.8	
4	Bromomethane	94	1.850	1.850	(0.305)	58391	50.0000	55.6	
5	Chloroethane	64	1.950	1.943	(0.321)	89775	50.0000	63.7	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	299728	50.0000	65.0	
7	Diethyl Ether	59	2.293	2.293	(0.378)	126474	50.0000	60.6	
19	Tertiary-butyl alcohol	59	3.358	3.373	(0.553)	67459	250.000	229	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	125437	50.0000	54.7	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	383473	50.0000	56.0	
9	Freon-113	151	2.493	2.486	(0.411)	179293	50.0000	91.8	
11	Iodomethane	142	2.593	2.593	(0.427)	33777	50.0000	36.6	
12	Acrolein	56	2.765	2.765	(0.456)	174567	250.000	232	
14	Methylene Chloride	84	2.987	2.987	(0.492)	211862	50.0000	49.7	
15	Acetone	43	3.044	3.044	(0.502)	245356	250.000	241	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	111681	1000.00	892	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	202351	50.0000	48.0	
13	Allyl Chloride	41	2.886	2.887	(0.476)	268032	50.0000	49.0	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	577824	50.0000	49.4	
20	Acetonitrile	41	3.537	3.537	(0.583)	217632	500.000	473	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	564446	50.0000	51.2	
22	Chloroprene	53	3.802	3.802	(0.627)	286692	50.0000	52.2	
39	Propionitrile	54	5.954	5.954	(0.981)	287481	500.000	547	
40	Methacrylonitrile	41	5.983	5.983	(0.986)	1185685	500.000	548	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4757.D
Report Date: 04-Apr-2018 05:36

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	362201	50.0000	49.8	
	24 Acrylonitrile	52	3.902	3.909	(0.643)	313841	250.000	262	
	25 Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	548453	50.0000	47.4	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	398788	50.0000	50.3	
	27 cis-1,2-Dichloroethene	96	4.552	4.553	(0.750)	210521	50.0000	50.5	
	52 Methyl Methacrylate	41	7.935	7.935	(1.157)	150029	50.0000	46.6	
	28 2,2-Dichloropropane	77	4.703	4.703	(0.775)	240719	50.0000	43.2	
	29 Bromochloromethane	128	4.853	4.853	(0.800)	97517	50.0000	50.5	
	31 Chloroform	83	4.982	4.982	(0.821)	360179	50.0000	49.3	
	32 Carbon Tetrachloride	117	5.175	5.168	(0.755)	238339	50.0000	49.8	
	33 Tetrahydrofuran	42	5.232	5.232	(0.862)	258549	250.000	239	
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	201226	50.0000	49.2	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	304390	50.0000	49.4	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	286368	50.0000	51.3	
	36 2-Butanone	43	5.496	5.496	(0.906)	409903	250.000	256	
	38 Benzene	78	5.875	5.875	(0.857)	811582	50.0000	51.1	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	406391	50.0000		
	30 Cyclohexane	56	4.824	4.824	(0.795)	309013	50.0000	49.5	
	53 Ethyl Methacrylate	69	9.744	9.744	(1.421)	262531	50.0000	49.4	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	285433	50.0000	51.2	
	43 Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	516593	50.0000	49.4	
	44 1,2-Dichloroethane	62	6.204	6.204	(0.905)	297633	50.0000	50.2	
	47 Trichloroethene	95	6.776	6.776	(0.989)	213417	50.0000	48.8	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	632260	50.0000		
	49 Dibromomethane	93	7.377	7.384	(1.076)	133953	50.0000	52.2	
	50 1,2-Dichloropropane	63	7.534	7.534	(1.099)	201753	50.0000	52.4	
	51 Bromodichloromethane	83	7.649	7.649	(1.116)	272372	50.0000	54.0	
	57 cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	343227	50.0000	48.1	
	54 1,4-Dioxane	88	7.949	7.956	(1.160)	33430	1000.00	912	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	756172	50.0000	51.0	
	59 Toluene	92	8.864	8.864	(1.293)	499350	50.0000	52.2	
	61 4-methyl-2-pentanone	43	9.436	9.436	(1.377)	850680	250.000	269	
	60 Tetrachloroethene	164	9.372	9.372	(0.861)	131751	50.0000	45.1	
	62 trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	301641	50.0000	49.1	
	63 1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	155276	50.0000	54.1	
	64 Dibromochloromethane	129	9.894	9.894	(0.909)	177477	50.0000	52.6	
	65 1,3-Dichloropropane	76	10.030	10.030	(0.921)	347694	50.0000	50.4	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	174567	50.0000	54.2	
	67 2-Hexanone	43	10.580	10.580	(0.972)	565627	250.000	244	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	538922	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	496114	50.0000	49.3	
	70 1-Chlorohexane	91	10.931	10.931	(1.004)	243424	50.0000	44.1	
	71 Ethylbenzene	106	10.973	10.974	(1.008)	273005	50.0000	51.4	
	72 1,1,1,2-Tetrachloroethane	131	11.009	11.016	(1.011)	165544	50.0000	51.8	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	637425	100.000	108	
	74 o-Xylene	106	11.746	11.739	(1.079)	293036	50.0000	47.3	
	75 Styrene	104	11.817	11.817	(1.085)	493946	50.0000	49.4	
	76 Bromoform	173	11.817	11.817	(1.085)	109010	50.0000	47.3	
	77 Isopropylbenzene	105	12.167	12.168	(0.871)	713606	50.0000	48.3	
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	253312	50.0000	52.8	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	52765	50.0000	42.6	
	86 trans-1,4-Dichloro-2-Butene	53	13.054	13.047	(0.934)	42270	50.0000	50.7	
	80 Bromobenzene	156	12.625	12.625	(0.904)	176697	50.0000	48.2	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	938497	50.0000	52.5	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4757.D
Report Date: 04-Apr-2018 05:36

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	204643	50.0000	48.2	
85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.929)	596665	50.0000	49.0	
83	2-Chlorotoluene	91	12.883	12.883	(0.922)	551764	50.0000	51.7	
84	1,2,3-Trichloropropane	75	12.975	12.976	(0.929)	190604	50.0000	50.4	
87	4-Chlorotoluene	91	13.104	13.104	(0.938)	586672	50.0000	52.4	
88	tert-Butylbenzene	119	13.383	13.383	(0.958)	527852	50.0000	49.0	
89	Pentachloroethane	165	13.397	13.397	(0.959)	78653	50.0000	57.6	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	616203	50.0000	49.2	
92	P-Isopropyltoluene	119	13.383	13.383	(0.958)	527852	50.0000	49.0	
93	1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	305323	50.0000	49.5	
* 94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	237516	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	316838	50.0000	48.3	
97	N-Butylbenzene	91	14.363	14.363	(1.028)	570793	50.0000	48.8	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	731020	50.0000	48.9	
99	1,2-Dichlorobenzene	146	14.527	14.527	(1.040)	292329	50.0000	50.6	
100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.115)	34088	50.0000	46.6	
101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	209891	50.0000	45.3	
102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	82034	50.0000	46.6	
103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	176986	50.0000	44.0	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	641774	50.0000	52.6	
104	Naphthalene	128	16.887	16.887	(1.209)	402682	50.0000	45.0	
105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	164701	50.0000	46.0	
17	Methyl Acetate	43	3.158	3.158	(0.520)	171312	50.0000	49.7	
46	Methylcyclohexane	83	6.733	6.733	(1.110)	325248	50.0000	53.3	


Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4757.D
Date : 27-MAR-2018 22:25
Client ID:
Sample Info: WG225462-5,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4757.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl Chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.990)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.369)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.153)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Pentafluorobenzene (6.090)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.205)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.377)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.942)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.890)
Toluene (8.965)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Xylenes (11.181)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.895)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.518)
-cis-1,4-Dichloro-2-Butene (12.626)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-Chlorotoluene (12.883)
-2-Chlorotoluene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.054)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.619)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.458)+
-1,2,4-Trichlorobenzene (16.887)(tot (16.880)
-1,2,3-Trichlorobenzene (17.123)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225462-8
Analytical Date: 03/27/18 23:01
Lab File ID : T4758.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1 Dichlorodifluoromethane	0.45216	0.47273	0.47273	0.010	4.54993	20.00000	Averaged	
2 Chloromethane	50.00000	57.43616	0.69355	0.100	14.87233	20.00000	Linear	
3 Vinyl chloride	0.37165	0.45916	0.45916	0.010	23.54506	20.00000	Averaged	*
4 Bromomethane	50.00000	58.50320	0.15107	0.010	17.00640	20.00000	Linear	
5 Chloroethane	0.17348	0.22302	0.22302	0.010	28.55241	20.00000	Averaged	*
6 Trichlorofluoromethane	0.56705	0.72779	0.72779	0.010	28.34671	20.00000	Averaged	*
8 1,1-Dichloroethene	0.28199	0.32920	0.32920	0.100	16.74344	20.00000	Averaged	
9 Freon-113	0.24040	0.33163	0.33163	0.010	37.95189	20.00000	Averaged	*
10 Carbon Disulfide	0.84219	1.00983	1.00983	0.010	19.90515	20.00000	Averaged	
14 Methylene Chloride	50.00000	52.72425	0.55255	0.010	5.44850	20.00000	Linear	
15 Acetone	250	259	0.12921	0.010	3.40186	20.00000	Linear	
16 trans-1,2-Dichloroethene	0.51884	0.52575	0.52575	0.010	1.33195	20.00000	Averaged	
18 Methyl tert-butyl ether	1.43894	1.47381	1.47381	0.010	2.42361	20.00000	Averaged	
23 1,1-Dichloroethane	0.89556	0.94393	0.94393	0.100	5.40175	20.00000	Averaged	
27 cis-1,2-Dichloroethene	0.51245	0.55901	0.55901	0.010	9.08654	20.00000	Averaged	
28 2,2-Dichloropropane	0.68633	0.62427	0.62427	0.010	-9.04129	20.00000	Averaged	
29 Bromochloromethane	0.23740	0.26000	0.26000	0.010	9.52123	20.00000	Averaged	
31 Chloroform	0.89941	0.94175	0.94175	0.010	4.70780	20.00000	Averaged	
32 Carbon Tetrachloride	50.00000	53.04208	0.40224	0.010	6.08415	20.00000	Linear	
35 1,1,1-Trichloroethane	0.75780	0.81411	0.81411	0.010	7.43139	20.00000	Averaged	
36 2-Butanone	0.19655	0.21473	0.21473	0.010	9.24959	20.00000	Averaged	
37 1,1-Dichloropropene	0.44172	0.48141	0.48141	0.010	8.98617	20.00000	Averaged	
38 Benzene	1.25602	1.36137	1.36137	0.010	8.38749	20.00000	Averaged	
44 1,2-Dichloroethane	0.46845	0.48943	0.48943	0.010	4.47814	20.00000	Averaged	
47 Trichloroethene	0.34548	0.35730	0.35730	0.010	3.42090	20.00000	Averaged	
49 Dibromomethane	0.20280	0.21374	0.21374	0.010	5.39093	20.00000	Averaged	
50 1,2-Dichloropropane	0.30477	0.32881	0.32881	0.010	7.88724	20.00000	Averaged	
51 Bromodichloromethane	0.39921	0.44228	0.44228	0.010	10.78857	20.00000	Averaged	
57 cis-1,3-dichloropropene	50.00000	50.24240	0.56775	0.010	0.48479	20.00000	Linear	
59 Toluene	0.75610	0.81875	0.81875	0.010	8.28600	20.00000	Averaged	
60 Tetrachloroethene	0.27104	0.26563	0.26563	0.010	-1.99676	20.00000	Averaged	
61 4-methyl-2-pentanone	250	280	0.28005	0.010	11.93637	20.00000	Linear	
62 trans-1,3-Dichloropropene	50.00000	51.28094	0.49849	0.010	2.56188	20.00000	Linear	
63 1,1,2-Trichloroethane	0.22692	0.25095	0.25095	0.010	10.58635	20.00000	Averaged	
64 Dibromochloromethane	0.31292	0.33080	0.33080	0.010	5.71394	20.00000	Averaged	
65 1,3-Dichloropropane	0.64044	0.67392	0.67392	0.010	5.22741	20.00000	Averaged	
66 1,2-Dibromoethane	0.25465	0.28495	0.28495	0.010	11.89889	20.00000	Averaged	
67 2-Hexanone	250	255	0.21998	0.010	2.17227	20.00000	Linear	
69 Chlorobenzene	0.93369	0.96997	0.96997	0.300	3.88568	20.00000	Averaged	
71 Ethylbenzene	0.49318	0.53466	0.53466	0.010	8.40921	20.00000	Averaged	
72 1,1,1,2-Tetrachloroethane	0.29678	0.31816	0.31816	0.010	7.20334	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225462-8
Lab File ID : T4758.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/27/18 23:01
Instrument ID: GCMS-T
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.54774	0.61957	0.61957	0.010	13.11344	20.00000	Averaged
74 o-Xylene	50.00000	50.09907	0.57698	0.010	0.19814	20.00000	Linear
75 Styrene	50.00000	51.19870	0.95057	0.010	2.39741	20.00000	Linear
76 Bromoform	50.00000	49.18811	0.21044	0.100	-1.62378	20.00000	Linear
77 Isopropylbenzene	50.00000	53.49819	3.32914	0.010	6.99638	20.00000	Linear
80 Bromobenzene	0.77129	0.80817	0.80817	0.010	4.78185	20.00000	Averaged
81 N-Propylbenzene	3.76550	4.31894	4.31894	0.010	14.69786	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.89343	0.91776	0.91776	0.300	2.72309	20.00000	Averaged
83 2-Chlorotoluene	2.24454	2.47883	2.47883	0.010	10.43793	20.00000	Averaged
84 1,2,3-Trichloropropane	0.79536	0.84941	0.84941	0.010	6.79556	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	53.59886	2.74634	0.010	7.19771	20.00000	Linear
87 4-Chlorotoluene	2.35872	2.65951	2.65951	0.010	12.75214	20.00000	Averaged
88 tert-Butylbenzene	50.00000	53.54190	2.42821	0.010	7.08380	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	53.14627	2.80262	0.010	6.29254	20.00000	Linear
91 sec-Butylbenzene	50.00000	53.97206	3.39707	0.010	7.94413	20.00000	Linear
92 P-Isopropyltoluene	50.00000	53.54190	2.42821	0.010	7.08380	20.00000	Linear
93 1,3-Dichlorobenzene	1.29740	1.38613	1.38613	0.010	6.83942	20.00000	Averaged
95 1,4-Dichlorobenzene	1.38019	1.42451	1.42451	0.010	3.21169	20.00000	Averaged
97 N-Butylbenzene	50.00000	53.40017	2.63218	0.010	6.80034	20.00000	Linear
99 1,2-Dichlorobenzene	1.21598	1.32332	1.32332	0.010	8.82713	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	0.15390	0.16075	0.16075	0.010	4.45039	20.00000	Averaged
102 Hexachlorobutadiene	0.37074	0.39211	0.39211	0.010	5.76533	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	48.74144	0.82827	0.010	-2.51711	20.00000	Linear
104 Naphthalene	50.00000	48.48251	1.83523	0.010	-3.03499	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	49.55034	0.74968	0.010	-0.89932	20.00000	Linear
34 Dibromofluoromethane	0.50309	0.51456	0.51456	0.010	2.27961	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68515	0.69913	0.69913	0.010	2.03982	20.00000	Averaged
58 Toluene-D8	1.17326	1.21930	1.21930	0.010	3.92390	20.00000	Averaged
78 P-Bromofluorobenzene	0.37925	0.39909	0.39909	0.010	5.23336	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225462-8
Lab File ID : T4758.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/27/18 23:01
Instrument ID: GCMS-T
Column ID:

*** = Compound out of QC criteria**

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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4758.D
Report Date: 05-Apr-2018 12:02

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4758.D
Lab Smp Id: WG225462-8
Inj Date : 27-MAR-2018 23:01
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225462-8,SL2295
Misc Info : WG225462,WG225352-4,SL2295-1
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 05-Apr-2018 12:01 gcms-t.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 20   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

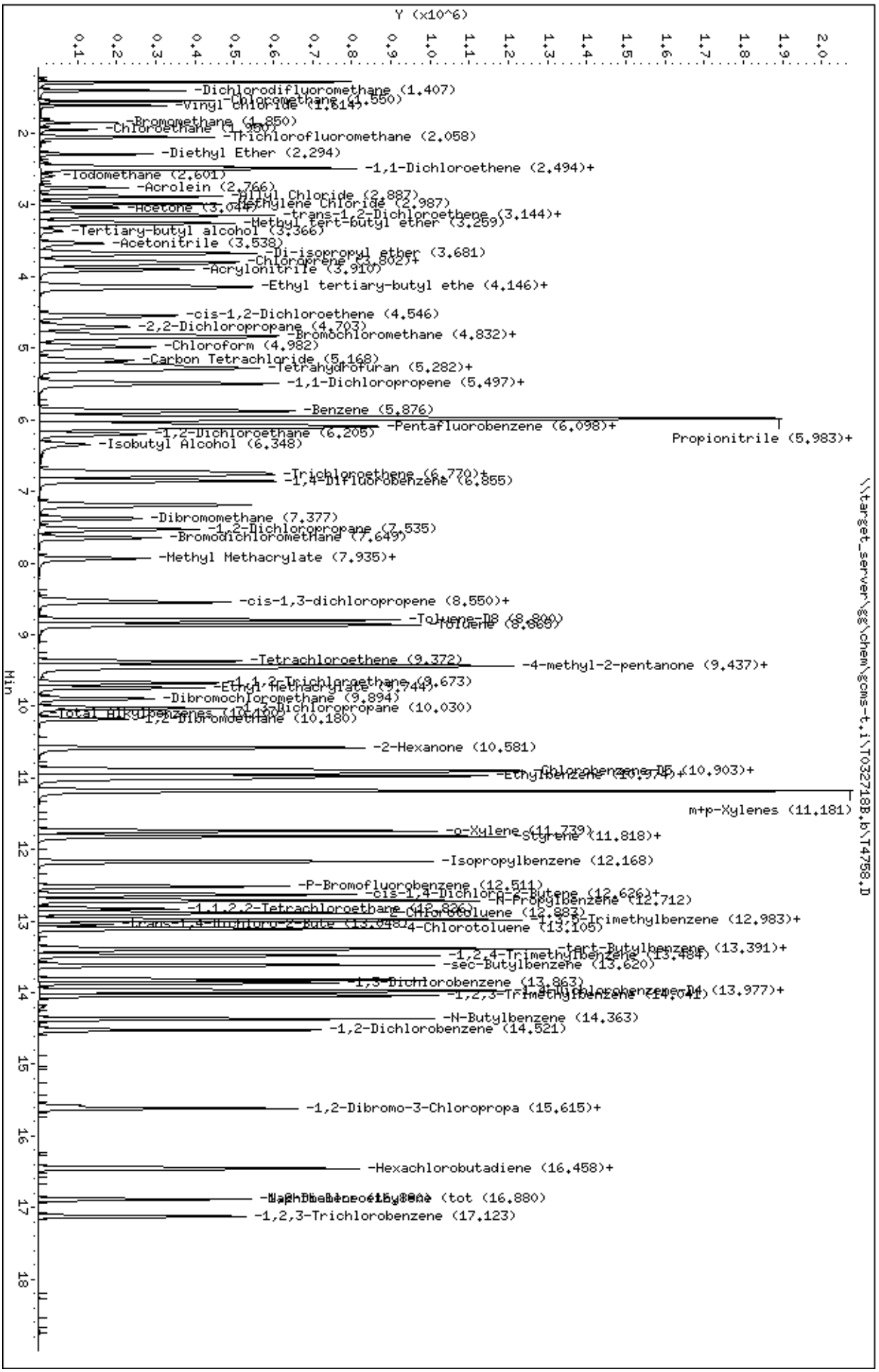
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	196644	50.0000	52.3	
2	Chloromethane	50	1.549	1.549	(0.255)	288497	50.0000	57.4	
3	Vinyl chloride	62	1.614	1.614	(0.266)	190998	50.0000	61.8	
4	Bromomethane	94	1.850	1.850	(0.305)	62840	50.0000	58.5	
5	Chloroethane	64	1.950	1.943	(0.321)	92769	50.0000	64.3	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	302741	50.0000	64.2	
7	Diethyl Ether	59	2.293	2.293	(0.378)	127658	50.0000	59.8	
19	Tertiary-butyl alcohol	59	3.366	3.373	(0.555)	74996	250.000	249	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	136939	50.0000	58.4	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	420063	50.0000	60.0	
9	Freon-113	151	2.493	2.486	(0.411)	137949	50.0000	69.0	
11	Iodomethane	142	2.601	2.593	(0.429)	41841	50.0000	43.2	
12	Acrolein	56	2.765	2.765	(0.456)	191566	250.000	248	
14	Methylene Chloride	84	2.987	2.987	(0.492)	229845	50.0000	52.7	
15	Acetone	43	3.044	3.044	(0.502)	268730	250.000	258	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	116696	1000.00	910	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	218698	50.0000	50.7	
13	Allyl Chloride	41	2.887	2.887	(0.476)	293044	50.0000	52.4	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	613065	50.0000	51.2	
20	Acetonitrile	41	3.537	3.537	(0.583)	238307	500.000	506	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	621097	50.0000	55.1	
22	Chloroprene	53	3.795	3.802	(0.625)	318824	50.0000	56.7	
39	Propionitrile	54	5.954	5.954	(0.981)	283103	500.000	526	
40	Methacrylonitrile	41	5.983	5.983	(0.986)	1251637	500.000	565	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4758.D
Report Date: 05-Apr-2018 12:02

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	392650	50.0000	52.7	
	24 Acrylonitrile	52	3.909	3.909	(0.644)	333064	250.000	272	
	25 Ethyl tertiary-butyl ether	59	4.145	4.138	(0.683)	590842	50.0000	49.8	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	428661	50.0000	52.4	
	27 cis-1,2-Dichloroethene	96	4.545	4.553	(0.749)	232533	50.0000	54.5	
	52 Methyl Methacrylate	41	7.935	7.935	(1.157)	163524	50.0000	49.1	
	28 2,2-Dichloropropane	77	4.703	4.703	(0.775)	259681	50.0000	45.5	
	29 Bromochloromethane	128	4.853	4.853	(0.800)	108154	50.0000	54.8	
	31 Chloroform	83	4.982	4.982	(0.821)	391742	50.0000	52.4	
	32 Carbon Tetrachloride	117	5.168	5.168	(0.754)	262838	50.0000	53.0	
	33 Tetrahydrofuran	42	5.232	5.232	(0.862)	280262	250.000	253	
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	214044	50.0000	51.1	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	338648	50.0000	53.7	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	314572	50.0000	54.5	
	36 2-Butanone	43	5.496	5.496	(0.906)	446604	250.000	273	
	38 Benzene	78	5.875	5.875	(0.857)	889566	50.0000	54.2	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	415973	50.0000		
	30 Cyclohexane	56	4.824	4.824	(0.795)	332147	50.0000	51.9	
	53 Ethyl Methacrylate	69	9.744	9.744	(1.421)	276619	50.0000	50.4	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	290819	50.0000	51.0	
	43 Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	543382	50.0000	50.8	
	44 1,2-Dichloroethane	62	6.204	6.204	(0.905)	319811	50.0000	52.2	
	47 Trichloroethene	95	6.776	6.776	(0.989)	233474	50.0000	51.7	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	653436	50.0000		
	49 Dibromomethane	93	7.377	7.384	(1.076)	139663	50.0000	52.7	
	50 1,2-Dichloropropane	63	7.527	7.534	(1.098)	214855	50.0000	53.9	
	51 Bromodichloromethane	83	7.649	7.649	(1.116)	289000	50.0000	55.4	
	57 cis-1,3-dichloropropene	75	8.550	8.550	(1.247)	370986	50.0000	50.2	
	54 1,4-Dioxane	88	7.956	7.956	(1.161)	36313	1000.00	959	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	796734	50.0000	52.0	
	59 Toluene	92	8.864	8.864	(1.293)	534998	50.0000	54.1	
	61 4-methyl-2-pentanone	43	9.436	9.436	(1.377)	914987	250.000	280	
	60 Tetrachloroethene	164	9.372	9.372	(0.861)	146520	50.0000	49.0	
	62 trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	325734	50.0000	51.3	
	63 1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	163978	50.0000	55.3	
	64 Dibromochloromethane	129	9.894	9.894	(0.909)	182469	50.0000	52.8	
	65 1,3-Dichloropropane	76	10.030	10.030	(0.921)	371735	50.0000	52.6	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	186198	50.0000	55.9	
	67 2-Hexanone	43	10.580	10.580	(0.972)	606709	250.000	255	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	551600	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	535033	50.0000	51.9	
	70 1-Chlorohexane	91	10.931	10.931	(1.004)	269632	50.0000	47.6	
	71 Ethylbenzene	106	10.974	10.974	(1.008)	294917	50.0000	54.2	
	72 1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	175498	50.0000	53.6	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	683507	100.000	113	
	74 o-Xylene	106	11.739	11.739	(1.078)	318263	50.0000	50.1	
	75 Styrene	104	11.817	11.817	(1.085)	524335	50.0000	51.2	
	76 Bromoform	173	11.817	11.817	(1.085)	116076	50.0000	49.2	
	77 Isopropylbenzene	105	12.168	12.168	(0.871)	780813	50.0000	53.5	
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	260783	50.0000	52.6	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.905)	55590	50.0000	45.4	
	86 trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	43896	50.0000	53.3	
	80 Bromobenzene	156	12.625	12.625	(0.904)	189547	50.0000	52.4	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	1012961	50.0000	57.3	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4758.D
Report Date: 05-Apr-2018 12:02

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.919)	215250	50.0000	51.4	
85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.930)	644124	50.0000	53.6	
83	2-Chlorotoluene	91	12.883	12.883	(0.923)	581382	50.0000	55.2	
84	1,2,3-Trichloropropane	75	12.976	12.976	(0.929)	199220	50.0000	53.4	
87	4-Chlorotoluene	91	13.104	13.104	(0.939)	623759	50.0000	56.4	
88	tert-Butylbenzene	119	13.383	13.383	(0.959)	569510	50.0000	53.5	
89	Pentachloroethane	165	13.397	13.397	(0.960)	80716	50.0000	59.8	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.966)	657323	50.0000	53.1	
92	P-Isopropyltoluene	119	13.383	13.383	(0.959)	569510	50.0000	53.5	
93	1,3-Dichlorobenzene	146	13.862	13.862	(0.993)	325102	50.0000	53.4	
* 94	1,4-Dichlorobenzene-D4	152	13.962	13.969	(1.000)	234539	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.002)	334104	50.0000	51.6	
97	N-Butylbenzene	91	14.363	14.363	(1.029)	617349	50.0000	53.4	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	796746	50.0000	54.0	
99	1,2-Dichlorobenzene	146	14.520	14.527	(1.040)	310369	50.0000	54.4	
100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.116)	37701	50.0000	52.2	
101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	224551	50.0000	49.1	
102	Hexachlorobutadiene	225	16.443	16.443	(1.178)	91966	50.0000	52.9	
103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.179)	194261	50.0000	48.7	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.006)	673175	50.0000	55.8	
104	Naphthalene	128	16.880	16.887	(1.209)	430433	50.0000	48.5	
105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	175829	50.0000	49.6	
17	Methyl Acetate	43	3.158	3.158	(0.520)	184929	50.0000	52.4	
46	Methylcyclohexane	83	6.733	6.733	(1.110)	344980	50.0000	55.3	


Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4758.D
Date : 27-MAR-2018 23:01
Client ID:
Sample Info: WG225462-8,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4758.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl Chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.960)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.601)
-Acrolein (2.766)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.910)
-Ethyl tertiary-butyl ethe (4.146)+
-cis-1,2-Dichloroethene (4.546)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.832)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.168)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Pentafluorobenzene (6.098)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.205)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.770)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.377)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.865)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Tetrachloroate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Hydrocarbons (TO-12)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.903)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.729)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.626)+
-N-Propylbenzene (12.712)
-1,1,2,2-Tetrachloroethane (12.826)
-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.048)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.454)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.521)
-1,2-Dibromo-3-Chloropropa (15.615)+
-Hexachlorobutadiene (16.458)+
-Naphthalene (16.880)
-1,2,3-Trichlorobenzene (17.123)

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225462-9
Analytical Date: 03/27/18 23:38
Lab File ID : T4759.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

	Compound	$\overline{\text{RRF}}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.45216	0.48116	0.48116	0.010	6.41382	20.00000	Averaged	
2	Chloromethane	50.00000	56.97813	0.68831	0.100	13.95626	20.00000	Linear	
3	Vinyl chloride	0.37165	0.45664	0.45664	0.010	22.86740	20.00000	Averaged	*
4	Bromomethane	50.00000	53.80588	0.13919	0.010	7.61177	20.00000	Linear	
5	Chloroethane	0.17348	0.21461	0.21461	0.010	23.70934	20.00000	Averaged	*
6	Trichlorofluoromethane	0.56705	0.73838	0.73838	0.010	30.21356	20.00000	Averaged	*
8	1,1-Dichloroethene	0.28199	0.31563	0.31563	0.100	11.93148	20.00000	Averaged	
9	Freon-113	0.24040	0.33008	0.33008	0.010	37.30634	20.00000	Averaged	*
10	Carbon Disulfide	0.84219	0.95830	0.95830	0.010	13.78668	20.00000	Averaged	
14	Methylene Chloride	50.00000	52.28768	0.54801	0.010	4.57536	20.00000	Linear	
15	Acetone	250	265	0.13212	0.010	5.82987	20.00000	Linear	
16	trans-1,2-Dichloroethene	0.51884	0.53329	0.53329	0.010	2.78502	20.00000	Averaged	
18	Methyl tert-butyl ether	1.43894	1.54292	1.54292	0.010	7.22664	20.00000	Averaged	
23	1,1-Dichloroethane	0.89556	0.95195	0.95195	0.100	6.29720	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.51245	0.55968	0.55968	0.010	9.21667	20.00000	Averaged	
28	2,2-Dichloropropane	0.68633	0.58270	0.58270	0.010	-15.09934	20.00000	Averaged	
29	Bromochloromethane	0.23740	0.25866	0.25866	0.010	8.95594	20.00000	Averaged	
31	Chloroform	0.89941	0.95586	0.95586	0.010	6.27724	20.00000	Averaged	
32	Carbon Tetrachloride	50.00000	51.98513	0.39404	0.010	3.97027	20.00000	Linear	
35	1,1,1-Trichloroethane	0.75780	0.81275	0.81275	0.010	7.25123	20.00000	Averaged	
36	2-Butanone	0.19655	0.21720	0.21720	0.010	10.50844	20.00000	Averaged	
37	1,1-Dichloropropene	0.44172	0.47150	0.47150	0.010	6.74199	20.00000	Averaged	
38	Benzene	1.25602	1.35094	1.35094	0.010	7.55714	20.00000	Averaged	
44	1,2-Dichloroethane	0.46845	0.48582	0.48582	0.010	3.70736	20.00000	Averaged	
47	Trichloroethene	0.34548	0.35303	0.35303	0.010	2.18563	20.00000	Averaged	
49	Dibromomethane	0.20280	0.21775	0.21775	0.010	7.37042	20.00000	Averaged	
50	1,2-Dichloropropane	0.30477	0.33686	0.33686	0.010	10.52781	20.00000	Averaged	
51	Bromodichloromethane	0.39921	0.44135	0.44135	0.010	10.55733	20.00000	Averaged	
57	cis-1,3-dichloropropene	50.00000	49.86866	0.56345	0.010	-0.26268	20.00000	Linear	
59	Toluene	0.75610	0.80280	0.80280	0.010	6.17745	20.00000	Averaged	
60	Tetrachloroethene	0.27104	0.29480	0.29480	0.010	8.76510	20.00000	Averaged	
61	4-methyl-2-pentanone	250	281	0.28128	0.010	12.43128	20.00000	Linear	
62	trans-1,3-Dichloropropene	50.00000	50.09339	0.48679	0.010	0.18679	20.00000	Linear	
63	1,1,2-Trichloroethane	0.22692	0.25140	0.25140	0.010	10.78776	20.00000	Averaged	
64	Dibromochloromethane	0.31292	0.34667	0.34667	0.010	10.78569	20.00000	Averaged	
65	1,3-Dichloropropane	0.64044	0.68643	0.68643	0.010	7.17994	20.00000	Averaged	
66	1,2-Dibromoethane	0.25465	0.28937	0.28937	0.010	13.63333	20.00000	Averaged	
67	2-Hexanone	250	263	0.22634	0.010	5.10263	20.00000	Linear	
69	Chlorobenzene	0.93369	0.97436	0.97436	0.300	4.35632	20.00000	Averaged	
71	Ethylbenzene	0.49318	0.54298	0.54298	0.010	10.09754	20.00000	Averaged	
72	1,1,1,2-Tetrachloroethane	0.29678	0.32033	0.32033	0.010	7.93389	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
SDG: SL2295
Lab ID : WG225462-9
Analytical Date: 03/27/18 23:38
Lab File ID : T4759.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39
Column ID:

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
73 m+p-Xylenes	0.54774	0.63294	0.63294	0.010	15.55408	20.00000	Averaged
74 o-Xylene	50.00000	50.05639	0.57648	0.010	0.11278	20.00000	Linear
75 Styrene	50.00000	52.33916	0.97207	0.010	4.67832	20.00000	Linear
76 Bromoform	50.00000	49.44339	0.21157	0.100	-1.11321	20.00000	Linear
77 Isopropylbenzene	50.00000	52.07402	3.24052	0.010	4.14804	20.00000	Linear
80 Bromobenzene	0.77129	0.80742	0.80742	0.010	4.68438	20.00000	Averaged
81 N-Propylbenzene	3.76550	4.20364	4.20364	0.010	11.63563	20.00000	Averaged
82 1,1,2,2-Tetrachloroethane	0.89343	0.90237	0.90237	0.300	1.00083	20.00000	Averaged
83 2-Chlorotoluene	2.24454	2.44733	2.44733	0.010	9.03462	20.00000	Averaged
84 1,2,3-Trichloropropane	0.79536	0.83992	0.83992	0.010	5.60165	20.00000	Averaged
85 1,3,5-Trimethylbenzene	50.00000	51.43316	2.63531	0.010	2.86632	20.00000	Linear
87 4-Chlorotoluene	2.35872	2.63062	2.63062	0.010	11.52747	20.00000	Averaged
88 tert-Butylbenzene	50.00000	51.34896	2.32836	0.010	2.69791	20.00000	Linear
90 1,2,4-Trimethylbenzene	50.00000	52.29484	2.75760	0.010	4.58969	20.00000	Linear
91 sec-Butylbenzene	50.00000	51.86813	3.26520	0.010	3.73626	20.00000	Linear
92 P-Isopropyltoluene	50.00000	51.34896	2.32836	0.010	2.69791	20.00000	Linear
93 1,3-Dichlorobenzene	1.29740	1.35586	1.35586	0.010	4.50600	20.00000	Averaged
95 1,4-Dichlorobenzene	1.38019	1.39986	1.39986	0.010	1.42571	20.00000	Averaged
97 N-Butylbenzene	50.00000	50.27972	2.47715	0.010	0.55944	20.00000	Linear
99 1,2-Dichlorobenzene	1.21598	1.30714	1.30714	0.010	7.49683	20.00000	Averaged
100 1,2-Dibromo-3-Chloropropane	0.15390	0.15506	0.15506	0.010	0.75560	20.00000	Averaged
102 Hexachlorobutadiene	0.37074	0.36624	0.36624	0.010	-1.21406	20.00000	Averaged
103 1,2,4-Trichlorobenzene	50.00000	47.59216	0.80825	0.010	-4.81568	20.00000	Linear
104 Naphthalene	50.00000	47.90794	1.81218	0.010	-4.18411	20.00000	Linear
105 1,2,3-Trichlorobenzene	50.00000	48.94038	0.74014	0.010	-2.11924	20.00000	Linear
34 Dibromofluoromethane	0.50309	0.51570	0.51570	0.010	2.50494	20.00000	Averaged
42 1,2-Dichloroethane-D4	0.68515	0.69334	0.69334	0.010	1.19533	20.00000	Averaged
58 Toluene-D8	1.17326	1.21086	1.21086	0.010	3.20440	20.00000	Averaged
78 P-Bromofluorobenzene	0.37925	0.39968	0.39968	0.010	5.38862	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab ID : WG225462-9
Lab File ID : T4759.D
Initial Calibration Date(s): 03/24/18 12:36 03/24/18 15:39

SDG: SL2295
Analytical Date: 03/27/18 23:38
Instrument ID: GCMS-T
Column ID:

*** = Compound out of QC criteria**

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sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4759.D
Report Date: 05-Apr-2018 12:02

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4759.D
Lab Smp Id: WG225462-9
Inj Date : 27-MAR-2018 23:38
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225462-9,SL2295
Misc Info : WG225462,WG225352-4,SL2295-1
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 05-Apr-2018 12:01 gcms-t.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 21   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

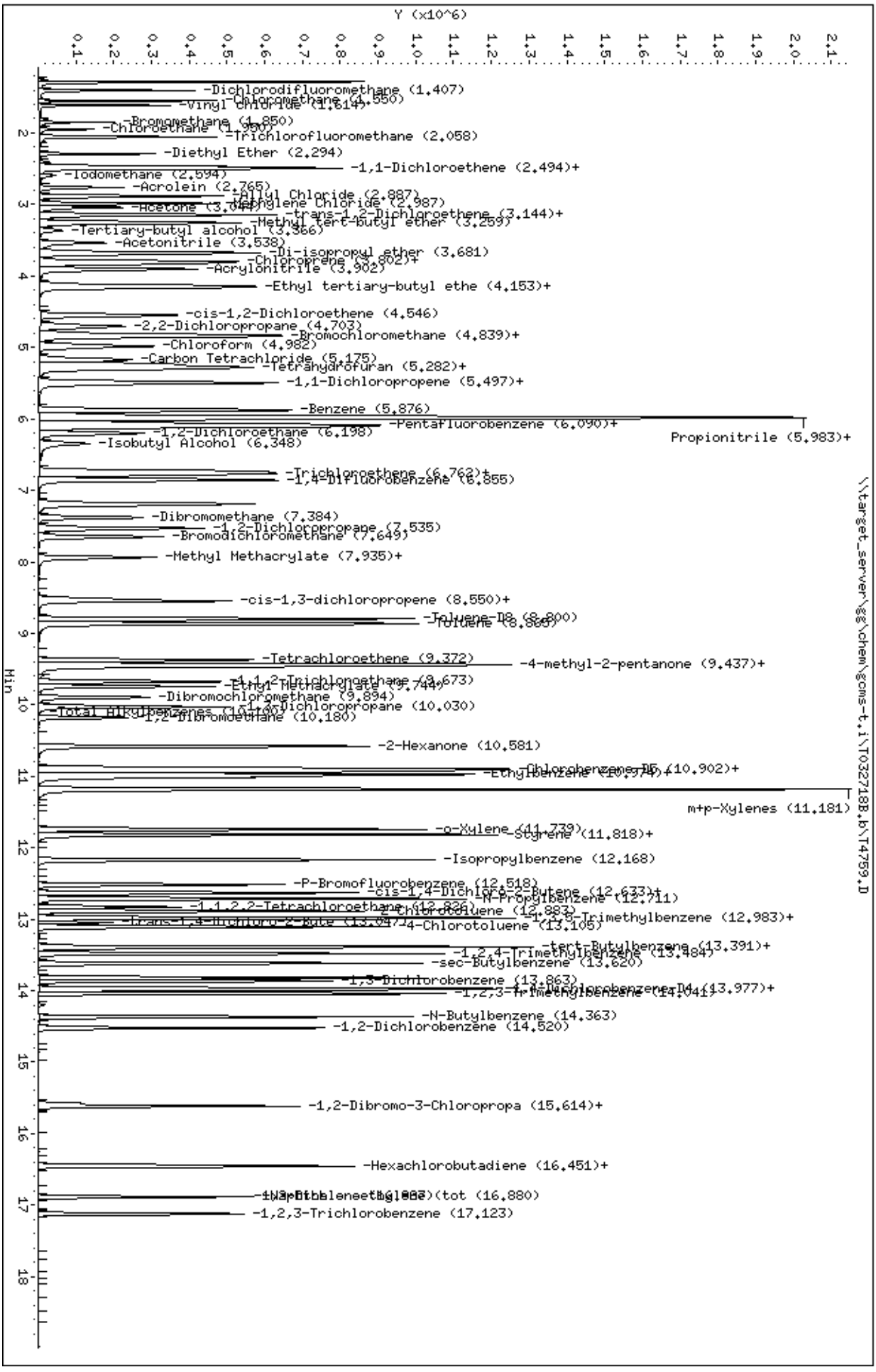
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	208149	50.0000	53.2	
2	Chloromethane	50	1.549	1.549	(0.255)	297763	50.0000	57.0	
3	Vinyl chloride	62	1.614	1.614	(0.266)	197542	50.0000	61.4	
4	Bromomethane	94	1.850	1.850	(0.305)	60214	50.0000	53.8	
5	Chloroethane	64	1.950	1.943	(0.321)	92842	50.0000	61.8	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	319420	50.0000	65.1	
7	Diethyl Ether	59	2.293	2.293	(0.378)	135021	50.0000	60.8	
19	Tertiary-butyl alcohol	59	3.366	3.373	(0.555)	81951	250.000	261	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	136542	50.0000	56.0	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	414560	50.0000	56.9	
9	Freon-113	151	2.493	2.486	(0.411)	142791	50.0000	68.6	
11	Iodomethane	142	2.593	2.593	(0.427)	48416	50.0000	47.5	
12	Acrolein	56	2.765	2.765	(0.456)	175140	250.000	218	
14	Methylene Chloride	84	2.987	2.987	(0.492)	237066	50.0000	52.3	
15	Acetone	43	3.044	3.044	(0.502)	285774	250.000	264	
45	Isobutyl Alcohol	43	6.340	6.347	(1.045)	135202	1000.00	1010	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	230700	50.0000	51.4	
13	Allyl Chloride	41	2.886	2.887	(0.476)	309119	50.0000	53.1	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	667465	50.0000	53.6	
20	Acetonitrile	41	3.537	3.537	(0.583)	249594	500.000	509	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	656919	50.0000	56.0	
22	Chloroprene	53	3.802	3.802	(0.627)	328847	50.0000	56.2	
39	Propionitrile	54	5.954	5.954	(0.981)	304084	500.000	543	
40	Methacrylonitrile	41	5.983	5.983	(0.986)	1339084	500.000	581	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4759.D
Report Date: 05-Apr-2018 12:02

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	411812	50.0000	53.1	
	24 Acrylonitrile	52	3.902	3.909	(0.643)	359093	250.000	282	
	25 Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	635403	50.0000	51.5	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	444677	50.0000	51.9	
	27 cis-1,2-Dichloroethene	96	4.545	4.553	(0.749)	242115	50.0000	54.6	
	52 Methyl Methacrylate	41	7.935	7.935	(1.157)	174768	50.0000	50.0	
	28 2,2-Dichloropropane	77	4.710	4.703	(0.776)	252073	50.0000	42.4	
	29 Bromochloromethane	128	4.853	4.853	(0.800)	111896	50.0000	54.5	
	31 Chloroform	83	4.989	4.982	(0.822)	413505	50.0000	53.1	
	32 Carbon Tetrachloride	117	5.167	5.168	(0.754)	269642	50.0000	52.0	
	33 Tetrahydrofuran	42	5.232	5.232	(0.862)	300430	250.000	261	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	223089	50.0000	51.2	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	351592	50.0000	53.6	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	322645	50.0000	53.4	
	36 2-Butanone	43	5.503	5.496	(0.907)	469805	250.000	276	
	38 Benzene	78	5.875	5.875	(0.857)	924441	50.0000	53.8	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	432598	50.0000		
	30 Cyclohexane	56	4.831	4.824	(0.796)	349287	50.0000	52.5	
	53 Ethyl Methacrylate	69	9.744	9.744	(1.421)	299263	50.0000	52.0	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	299939	50.0000	50.6	
	43 Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	594875	50.0000	53.5	
	44 1,2-Dichloroethane	62	6.204	6.204	(0.905)	332444	50.0000	51.8	
	47 Trichloroethene	95	6.776	6.776	(0.989)	241580	50.0000	51.1	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	684296	50.0000		
	49 Dibromomethane	93	7.384	7.384	(1.077)	149006	50.0000	53.7	
	50 1,2-Dichloropropane	63	7.534	7.534	(1.099)	230509	50.0000	55.3	
	51 Bromodichloromethane	83	7.649	7.649	(1.116)	302017	50.0000	55.3	
	57 cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	385565	50.0000	49.9	
	54 1,4-Dioxane	88	7.956	7.956	(1.161)	38826	1000.00	979	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	828585	50.0000	51.6	
	59 Toluene	92	8.864	8.864	(1.293)	549355	50.0000	53.1	
	61 4-methyl-2-pentanone	43	9.436	9.436	(1.377)	962400	250.000	281	
	60 Tetrachloroethene	164	9.372	9.372	(0.861)	166334	50.0000	54.4	
	62 trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	333109	50.0000	50.1	
	63 1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	172035	50.0000	55.4	
	64 Dibromochloromethane	129	9.901	9.894	(0.909)	195603	50.0000	55.4	
	65 1,3-Dichloropropane	76	10.030	10.030	(0.921)	387305	50.0000	53.6	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	198014	50.0000	56.8	
	67 2-Hexanone	43	10.580	10.580	(0.972)	638553	250.000	263	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	564234	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	549767	50.0000	52.2	
	70 1-Chlorohexane	91	10.931	10.931	(1.004)	275738	50.0000	47.5	
	71 Ethylbenzene	106	10.973	10.974	(1.008)	306370	50.0000	55.0	
	72 1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	180741	50.0000	54.0	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	714248	100.000	116	
	74 o-Xylene	106	11.738	11.739	(1.078)	325269	50.0000	50.0	
	75 Styrene	104	11.817	11.817	(1.085)	548476	50.0000	52.3	
	76 Bromoform	173	11.817	11.817	(1.085)	119374	50.0000	49.4	
	77 Isopropylbenzene	105	12.168	12.168	(0.871)	799499	50.0000	52.1	
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	273502	50.0000	52.7	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.905)	57696	50.0000	44.8	
	86 trans-1,4-Dichloro-2-Butene	53	13.054	13.047	(0.935)	45695	50.0000	52.7	
	80 Bromobenzene	156	12.625	12.625	(0.904)	199205	50.0000	52.3	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	1037117	50.0000	55.8	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4759.D
Report Date: 05-Apr-2018 12:02

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.919)	222632	50.0000	50.5	
85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.930)	650182	50.0000	51.4	
83	2-Chlorotoluene	91	12.883	12.883	(0.923)	603803	50.0000	54.5	
84	1,2,3-Trichloropropane	75	12.975	12.976	(0.929)	207223	50.0000	52.8	
87	4-Chlorotoluene	91	13.104	13.104	(0.939)	649025	50.0000	55.8	
88	tert-Butylbenzene	119	13.383	13.383	(0.959)	574451	50.0000	51.3	
89	Pentachloroethane	165	13.397	13.397	(0.960)	75192	50.0000	53.0	
90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.966)	680352	50.0000	52.3	
92	P-Isopropyltoluene	119	13.383	13.383	(0.959)	574451	50.0000	51.3	
93	1,3-Dichlorobenzene	146	13.862	13.862	(0.993)	334516	50.0000	52.2	
* 94	1,4-Dichlorobenzene-D4	152	13.962	13.969	(1.000)	246719	50.0000		
95	1,4-Dichlorobenzene	146	13.984	13.984	(1.002)	345373	50.0000	50.7	
97	N-Butylbenzene	91	14.363	14.363	(1.029)	611160	50.0000	50.3	
91	sec-Butylbenzene	105	13.619	13.619	(0.975)	805586	50.0000	51.9	
99	1,2-Dichlorobenzene	146	14.520	14.527	(1.040)	322496	50.0000	53.7	
100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.116)	38256	50.0000	50.4	
101	1,3,5-Trichlorobenzene	180	15.621	15.621	(1.119)	238464	50.0000	49.5	
102	Hexachlorobutadiene	225	16.443	16.443	(1.178)	90358	50.0000	49.4	
103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.179)	199411	50.0000	47.6	
96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.006)	708107	50.0000	55.8	
104	Naphthalene	128	16.887	16.887	(1.209)	447100	50.0000	47.9	
105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	182607	50.0000	48.9	
17	Methyl Acetate	43	3.158	3.158	(0.520)	198996	50.0000	54.2	
46	Methylcyclohexane	83	6.733	6.733	(1.110)	366256	50.0000	56.4	


Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4759.D
Date : 27-MAR-2018 23:38
Client ID:
Sample Info: WG225462-9,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4759.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.990)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.902)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.153)+
-cis-1,2-Dichloroethene (4.546)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.497)+
-Benzene (5.876)
-Pentafluorobenzene (6.090)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.198)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.384)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.868)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.437)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Xylenes (11.181)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.518)
-cis-1,4-Dichloro-2-Butene (12.633)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-Bromobenzene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.047)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.451)+
-1,2,4-Trichlorobenzene (16.880)
-1,2,3-Trichlorobenzene (17.123)

Data File: \\target_server\gg\chem\gcms-p.i\P031918B.b\PB983a.D

Date : 19-MAR-2018 14:29

Client ID:

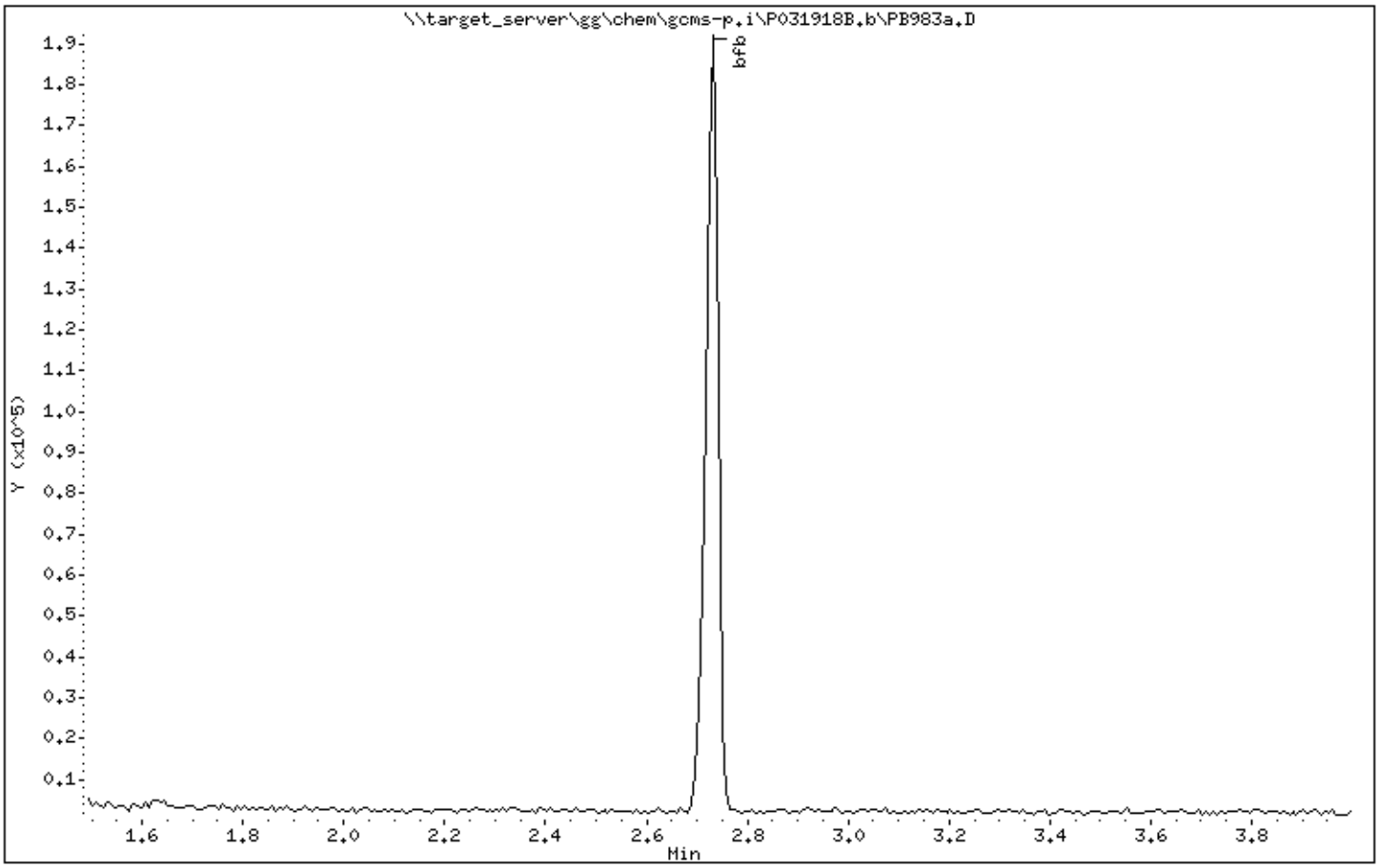
Instrument: gcms-p.i

Sample Info: WG225041-10,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



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Date : 19-MAR-2018 14:29

Client ID:

Instrument: gcms-p.i

Sample Info: WG225041-10,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

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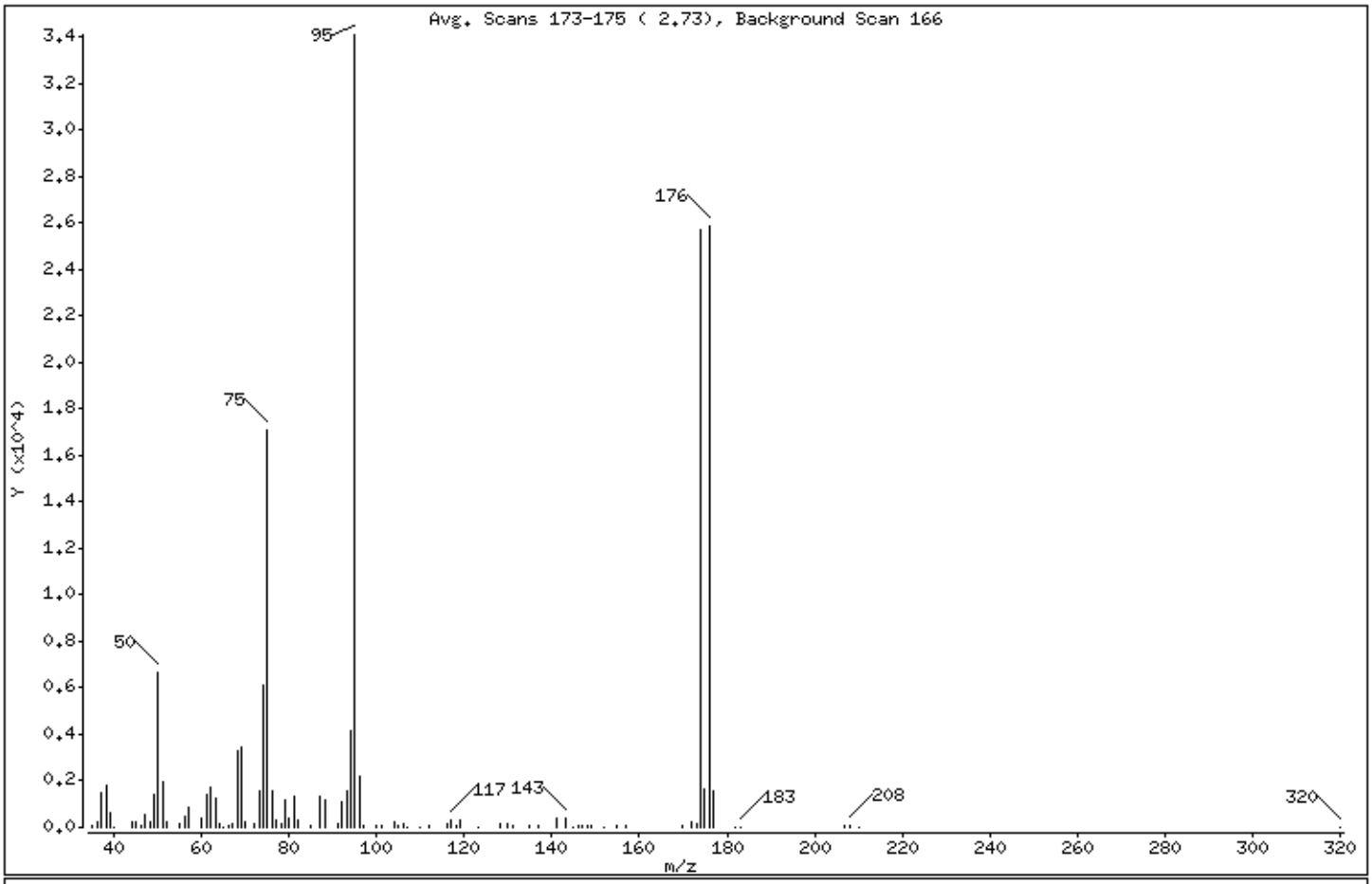


m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.55
75	30.00 - 60.00% of mass 95	50.07
96	5.00 - 9.00% of mass 95	6.50
173	Less than 2.00% of mass 174	0.52 (0.69)
174	Greater than 50.00% of mass 95	75.33
175	5.00 - 9.00% of mass 174	4.84 (6.43)
176	95.00 - 101.00% of mass 174	75.96 (100.84)
177	5.00 - 9.00% of mass 176	4.63 (6.10)

Date : 19-MAR-2018 14:29

Client ID: Instrument: gcms-p.i

Sample Info: WG225041-10,SL2295

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB983a.D
Spectrum: Avg. Scans 173-175 (2.73), Background Scan 166
Location of Maximum: 95.00
Number of points: 91

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	49	65.00	37	94.00	4165	143.00	429
36.00	269	66.00	71	95.00	34112	145.00	36
37.00	1517	67.00	141	96.00	2217	146.00	45
38.00	1791	68.00	3295	97.00	93	147.00	76
39.00	620	69.00	3442	100.00	41	148.00	92
40.00	18	70.00	208	101.00	41	149.00	45
44.00	213	72.00	186	104.00	250	152.00	34
45.00	212	73.00	1591	105.00	78	155.00	109
46.00	40	74.00	6118	106.00	137	157.00	51
47.00	587	75.00	17080	107.00	36	170.00	40
48.00	204	76.00	1600	110.00	36	172.00	215
49.00	1414	77.00	276	112.00	42	173.00	177
50.00	6668	78.00	149	116.00	187	174.00	25696
51.00	1947	79.00	1147	117.00	320	175.00	1651
52.00	204	80.00	397	118.00	55	176.00	25912
55.00	151	81.00	1315	119.00	287	177.00	1580
56.00	479	82.00	332	123.00	37	182.00	33
57.00	829	85.00	49	128.00	151	183.00	39
60.00	394	87.00	1320	130.00	195	207.00	43
61.00	1400	88.00	1159	131.00	88	208.00	53
62.00	1696	91.00	175	135.00	57	210.00	35
63.00	1291	92.00	1118	137.00	92	320.00	34
64.00	152	93.00	1538	141.00	376		

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\PB987a.D

Date : 23-MAR-2018 07:30

Client ID:

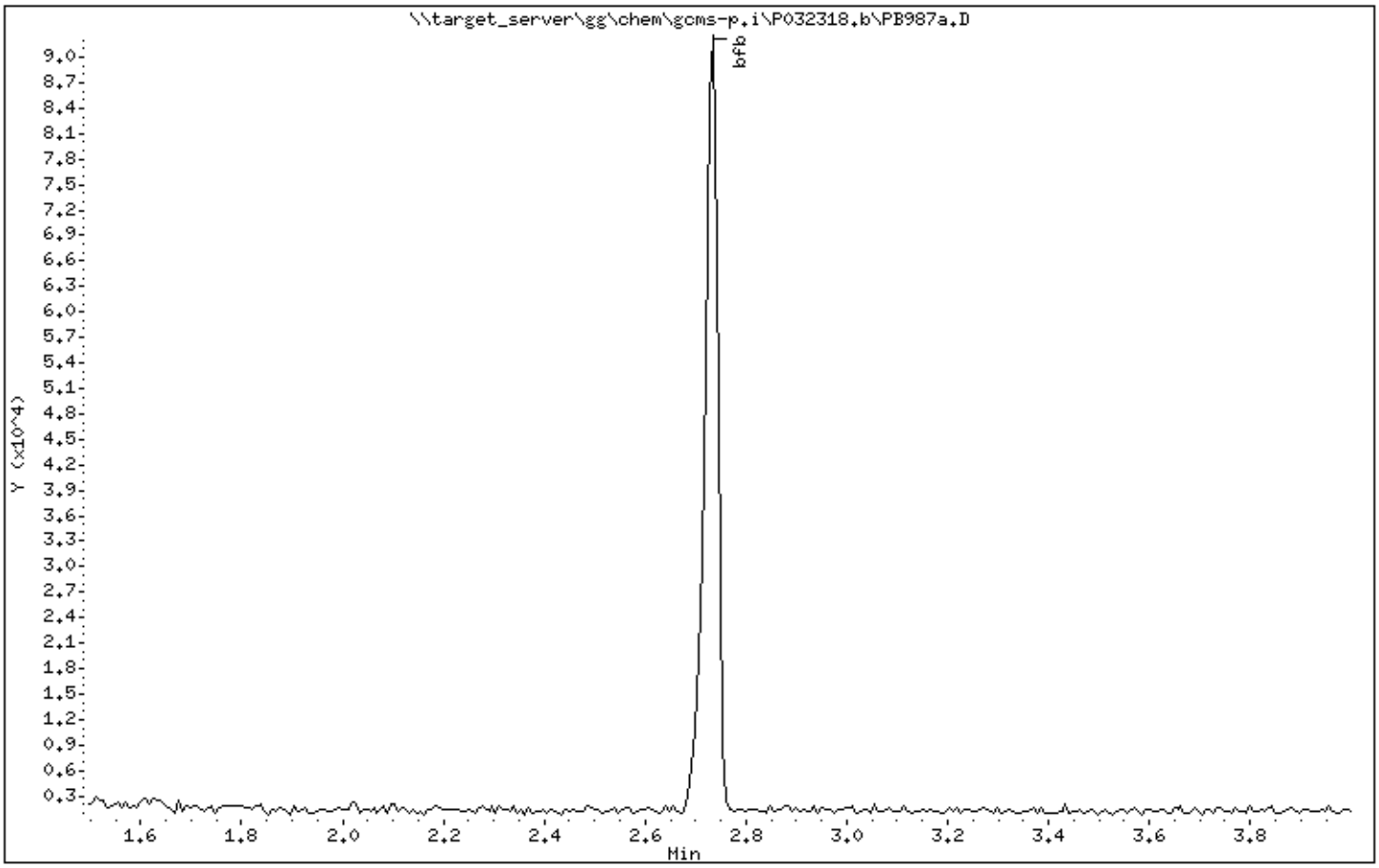
Instrument: gcms-p.i

Sample Info: WG225300-3,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\PB987a.D

Date : 23-MAR-2018 07:30

Client ID:

Instrument: gcms-p.i

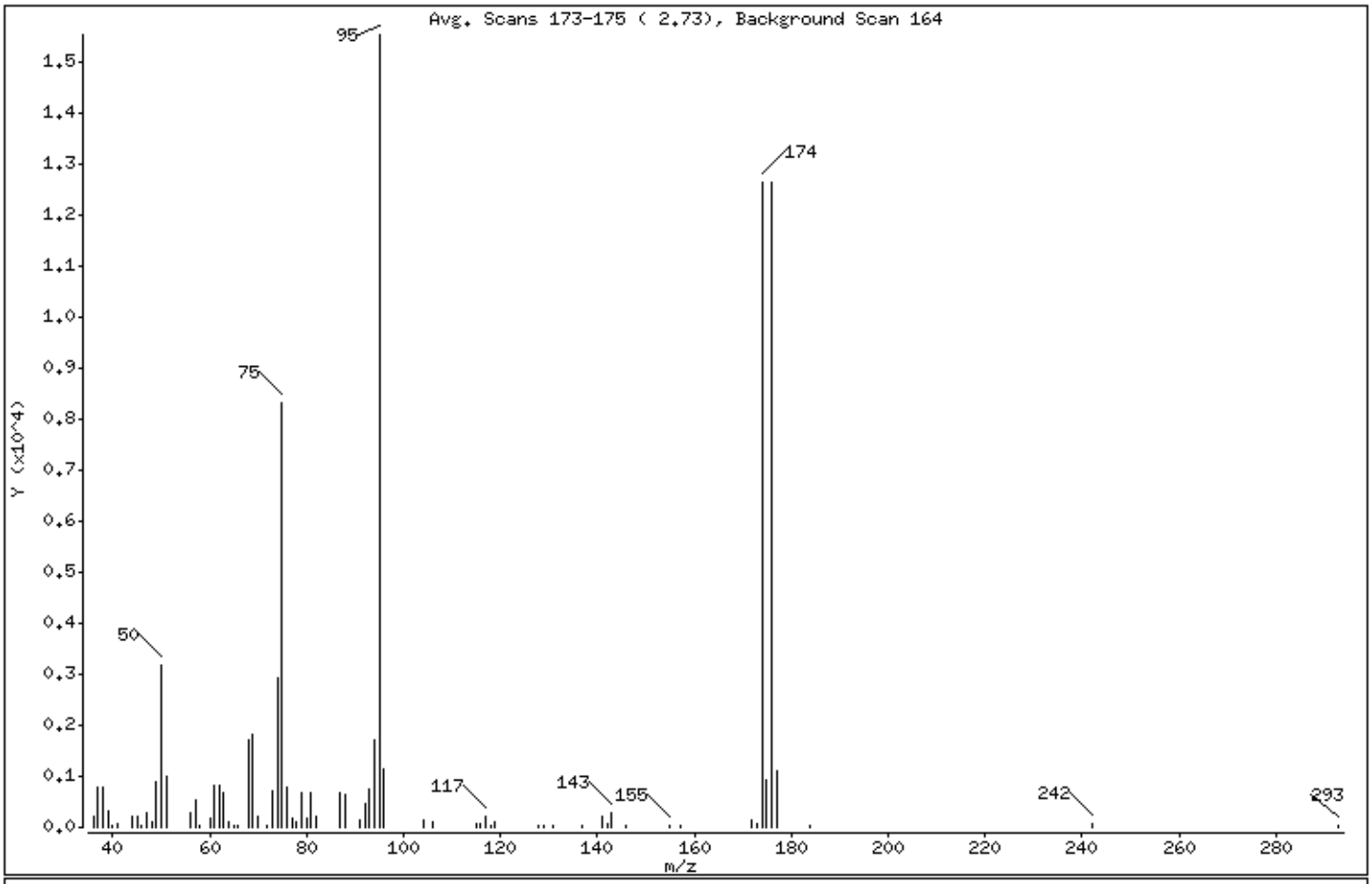
Sample Info: WG225300-3,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.55
75	30.00 - 60.00% of mass 95	53.63
96	5.00 - 9.00% of mass 95	7.44
173	Less than 2.00% of mass 174	0.55 (0.68)
174	Greater than 50.00% of mass 95	81.41
175	5.00 - 9.00% of mass 174	5.91 (7.26)
176	95.00 - 101.00% of mass 174	81.31 (99.88)
177	5.00 - 9.00% of mass 176	7.02 (8.63)

Date : 23-MAR-2018 07:30

Client ID: Instrument: gcms-p.i

Sample Info: WG225300-3,SL2295

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB987a.D
Spectrum: Avg. Scans 173-175 (2.73), Background Scan 164
Location of Maximum: 95.00
Number of points: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	206	62.00	830	87.00	687	141.00	230
37.00	784	63.00	686	88.00	638	142.00	78
38.00	781	64.00	98	91.00	138	143.00	269
39.00	307	65.00	45	92.00	461	146.00	34
40.00	37	66.00	35	93.00	764	155.00	50
41.00	75	68.00	1698	94.00	1728	157.00	34
44.00	208	69.00	1815	95.00	15521	172.00	159
45.00	228	70.00	202	96.00	1154	173.00	86
46.00	37	72.00	46	104.00	159	174.00	12635
47.00	269	73.00	729	106.00	116	175.00	917
48.00	116	74.00	2913	115.00	79	176.00	12620
49.00	902	75.00	8324	116.00	81	177.00	1089
50.00	3189	76.00	789	117.00	226	184.00	34
51.00	998	77.00	167	118.00	42	242.00	59
56.00	284	78.00	122	119.00	96	293.00	36
57.00	520	79.00	664	128.00	45		
58.00	37	80.00	172	129.00	35		
60.00	177	81.00	688	131.00	33		
61.00	821	82.00	197	137.00	45		

Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\PB988a.D

Date : 24-MAR-2018 08:01

Client ID:

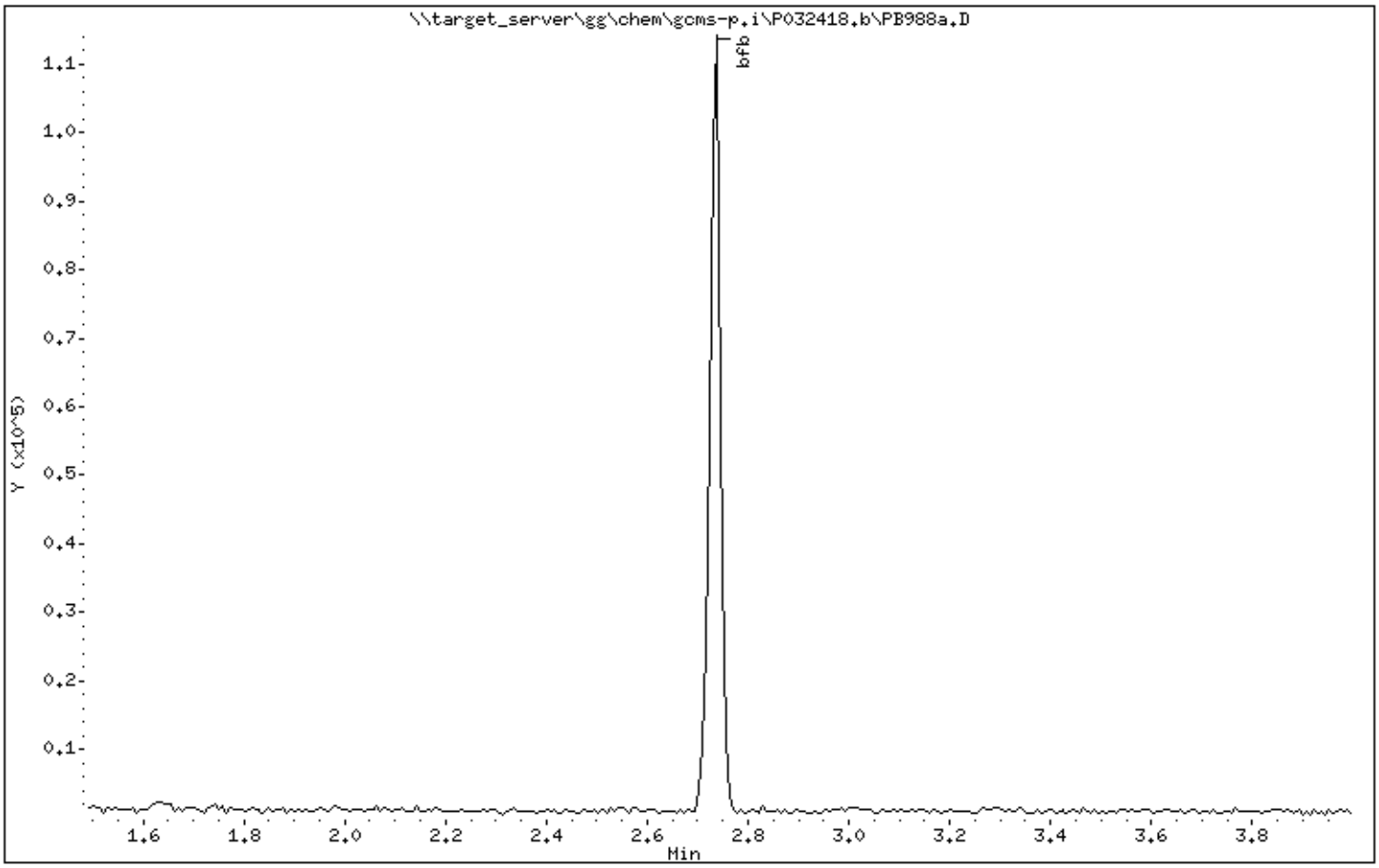
Instrument: gcms-p.i

Sample Info: WG225349-10,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P032418.b\PB988a.D

Date : 24-MAR-2018 08:01

Client ID:

Instrument: gcms-p.i

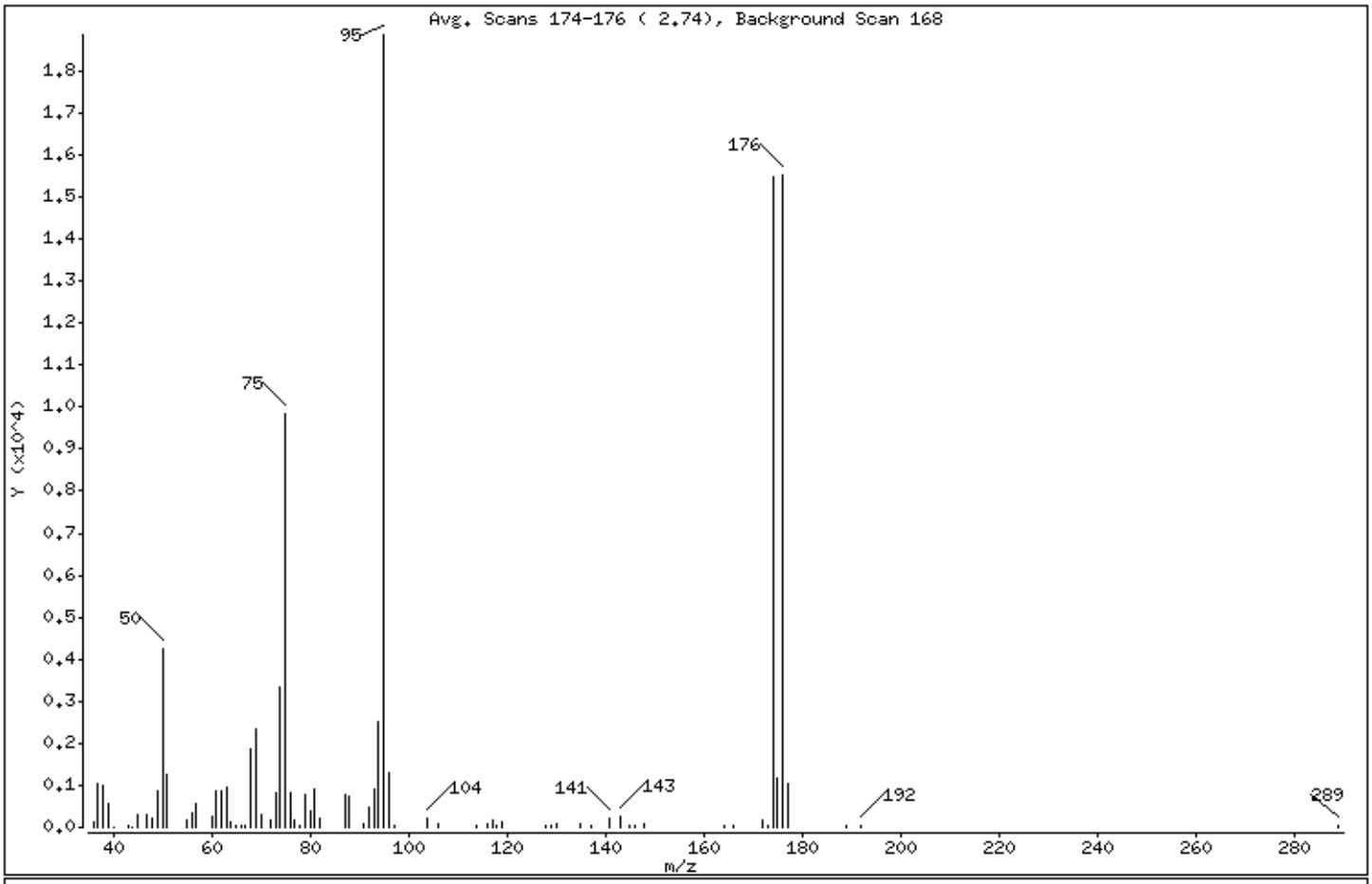
Sample Info: WG225349-10,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	22.63
75	30.00 - 60.00% of mass 95	52.22
96	5.00 - 9.00% of mass 95	6.91
173	Less than 2.00% of mass 174	0.22 (0.27)
174	Greater than 50.00% of mass 95	82.18
175	5.00 - 9.00% of mass 174	6.20 (7.54)
176	95.00 - 101.00% of mass 174	82.23 (100.06)
177	5.00 - 9.00% of mass 176	5.61 (6.82)

Date : 24-MAR-2018 08:01

Client ID:

Instrument: gcms-p.i

Sample Info: WG225349-10,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

Data File: PB988a.D
Spectrum: Avg. Scans 174-176 (2.74), Background Scan 168
Location of Maximum: 95.00
Number of points: 75

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	140	63.00	974	87.00	761	135.00	92
37.00	1027	64.00	132	88.00	754	137.00	46
38.00	990	65.00	42	91.00	77	141.00	206
39.00	546	66.00	41	92.00	480	143.00	269
40.00	17	67.00	59	93.00	913	145.00	62
43.00	41	68.00	1854	94.00	2534	146.00	36
44.00	15	69.00	2349	95.00	18856	148.00	75
45.00	291	70.00	287	96.00	1303	164.00	40
47.00	314	72.00	179	97.00	44	166.00	37
48.00	230	73.00	840	104.00	202	172.00	175
49.00	858	74.00	3337	106.00	107	173.00	42
50.00	4268	75.00	9847	114.00	37	174.00	15495
51.00	1246	76.00	826	116.00	82	175.00	1169
55.00	193	77.00	162	117.00	191	176.00	15505
56.00	352	78.00	58	118.00	43	177.00	1058
57.00	544	79.00	788	119.00	115	189.00	35
60.00	260	80.00	394	128.00	60	192.00	39
61.00	871	81.00	890	129.00	34	289.00	35
62.00	859	82.00	212	130.00	86		

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\PB990a.D

Date : 27-MAR-2018 07:37

Client ID:

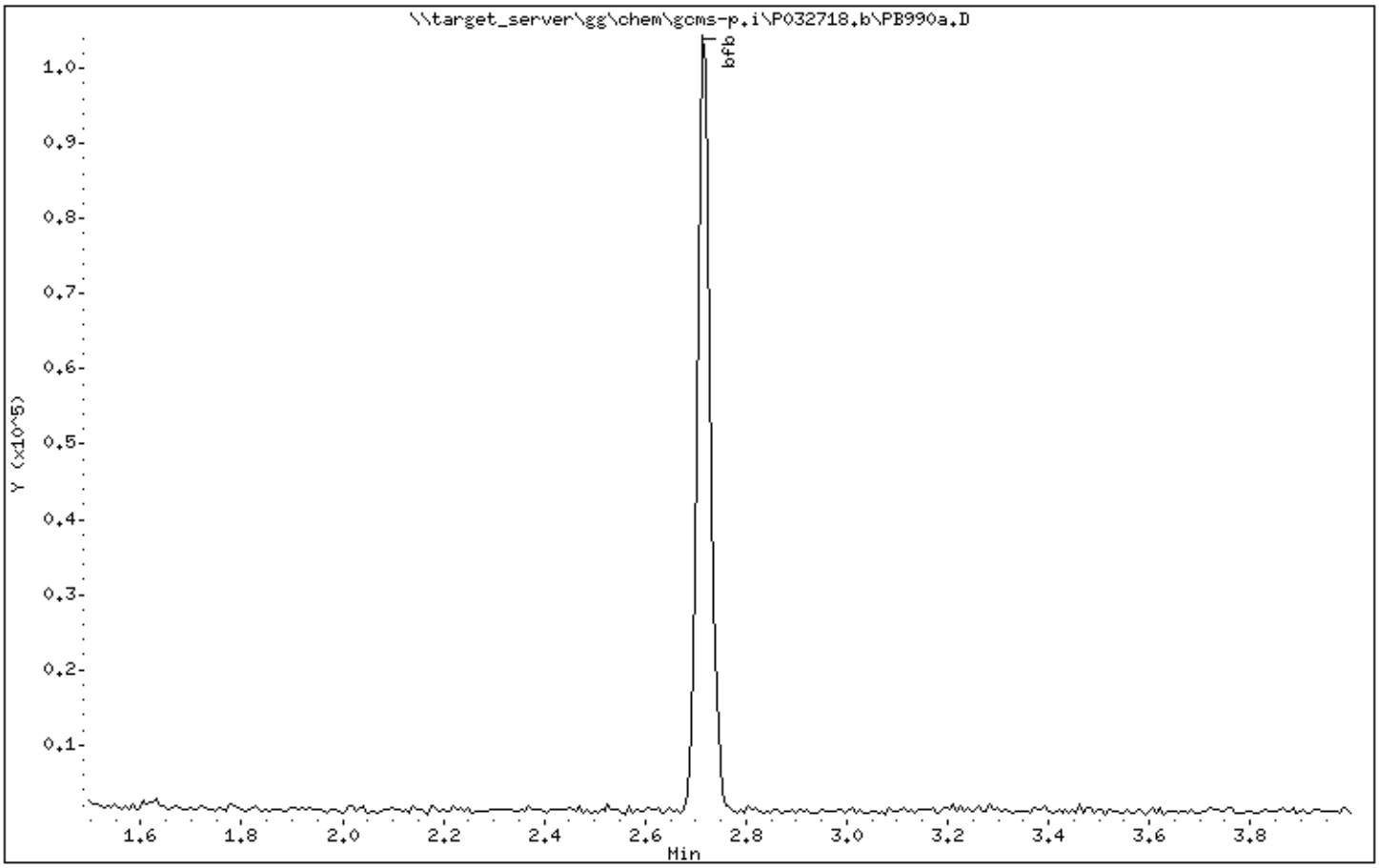
Instrument: gcms-p.i

Sample Info: WG225461-3,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\PB990a.D

Date : 27-MAR-2018 07:37

Client ID:

Instrument: gcms-p.i

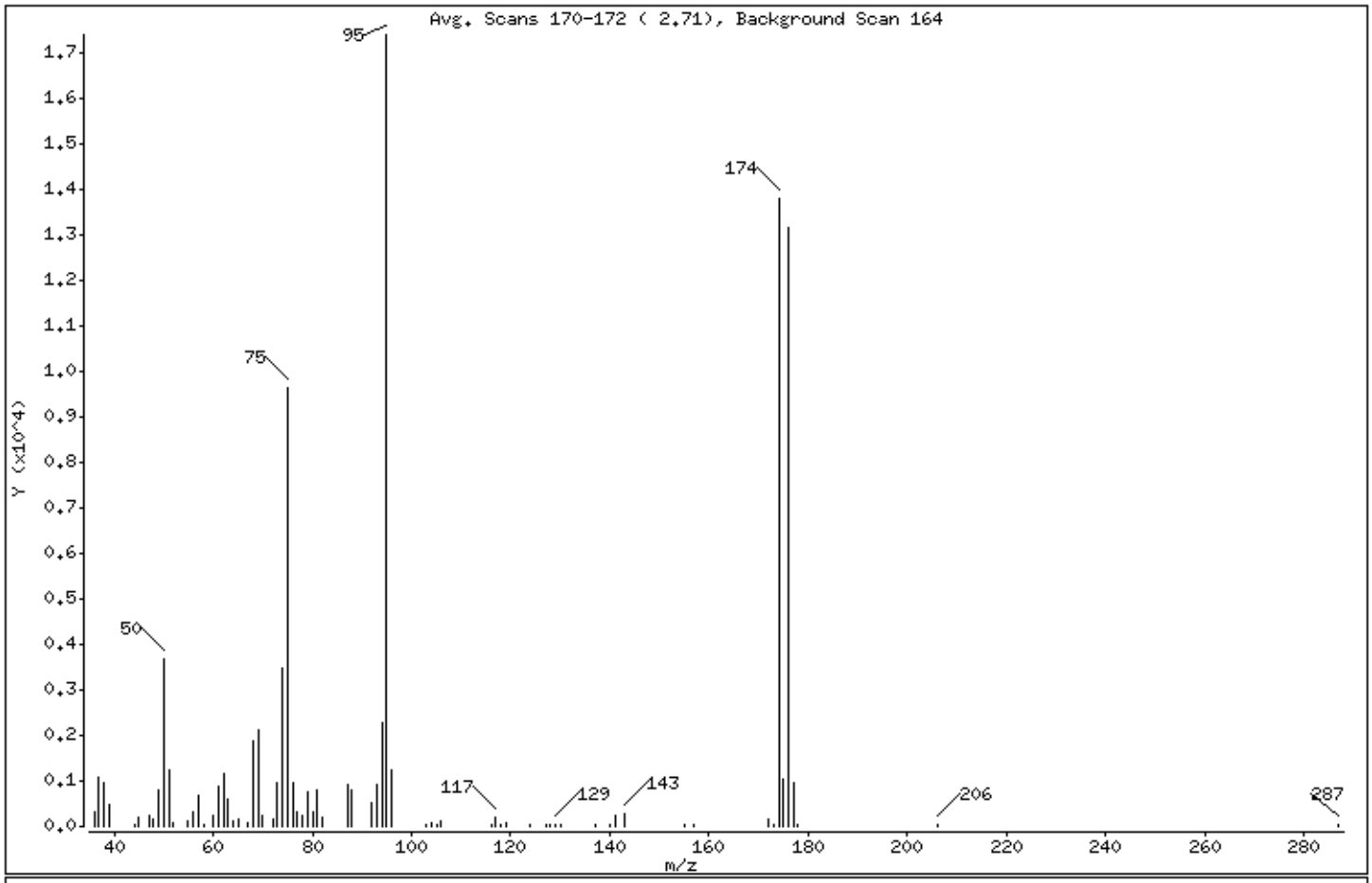
Sample Info: WG225461-3,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.04
75	30.00 - 60.00% of mass 95	55.45
96	5.00 - 9.00% of mass 95	7.09
173	Less than 2.00% of mass 174	0.26 (0.33)
174	Greater than 50.00% of mass 95	79.36
175	5.00 - 9.00% of mass 174	5.95 (7.50)
176	95.00 - 101.00% of mass 174	75.59 (95.24)
177	5.00 - 9.00% of mass 176	5.47 (7.24)

Date : 27-MAR-2018 07:37

Client ID: Instrument: gcms-p.i

Sample Info: WG225461-3,SL2295

Operator: hg

Column phase: RTX-VMS Column diameter: 0.18

Data File: PB990a.D
Spectrum: Avg. Scans 170-172 (2.71), Background Scan 164
Location of Maximum: 95.00
Number of points: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	330	63.00	620	88.00	805	137.00	47
37.00	1095	64.00	134	92.00	531	140.00	33
38.00	949	65.00	160	93.00	940	141.00	234
39.00	468	67.00	100	94.00	2282	143.00	273
44.00	39	68.00	1894	95.00	17416	155.00	34
45.00	218	69.00	2118	96.00	1234	157.00	47
47.00	247	70.00	228	103.00	45	172.00	176
48.00	168	72.00	180	104.00	78	173.00	45
49.00	802	73.00	949	105.00	44	174.00	13822
50.00	3664	74.00	3479	106.00	138	175.00	1036
51.00	1223	75.00	9657	116.00	59	176.00	13164
52.00	74	76.00	944	117.00	202	177.00	953
55.00	118	77.00	314	118.00	33	178.00	35
56.00	331	78.00	238	119.00	85	206.00	48
57.00	674	79.00	756	124.00	49	287.00	34
58.00	33	80.00	312	127.00	48		
60.00	223	81.00	802	128.00	50		
61.00	895	82.00	215	129.00	54		
62.00	1165	87.00	904	130.00	38		

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\PB991a.D

Date : 28-MAR-2018 08:41

Client ID:

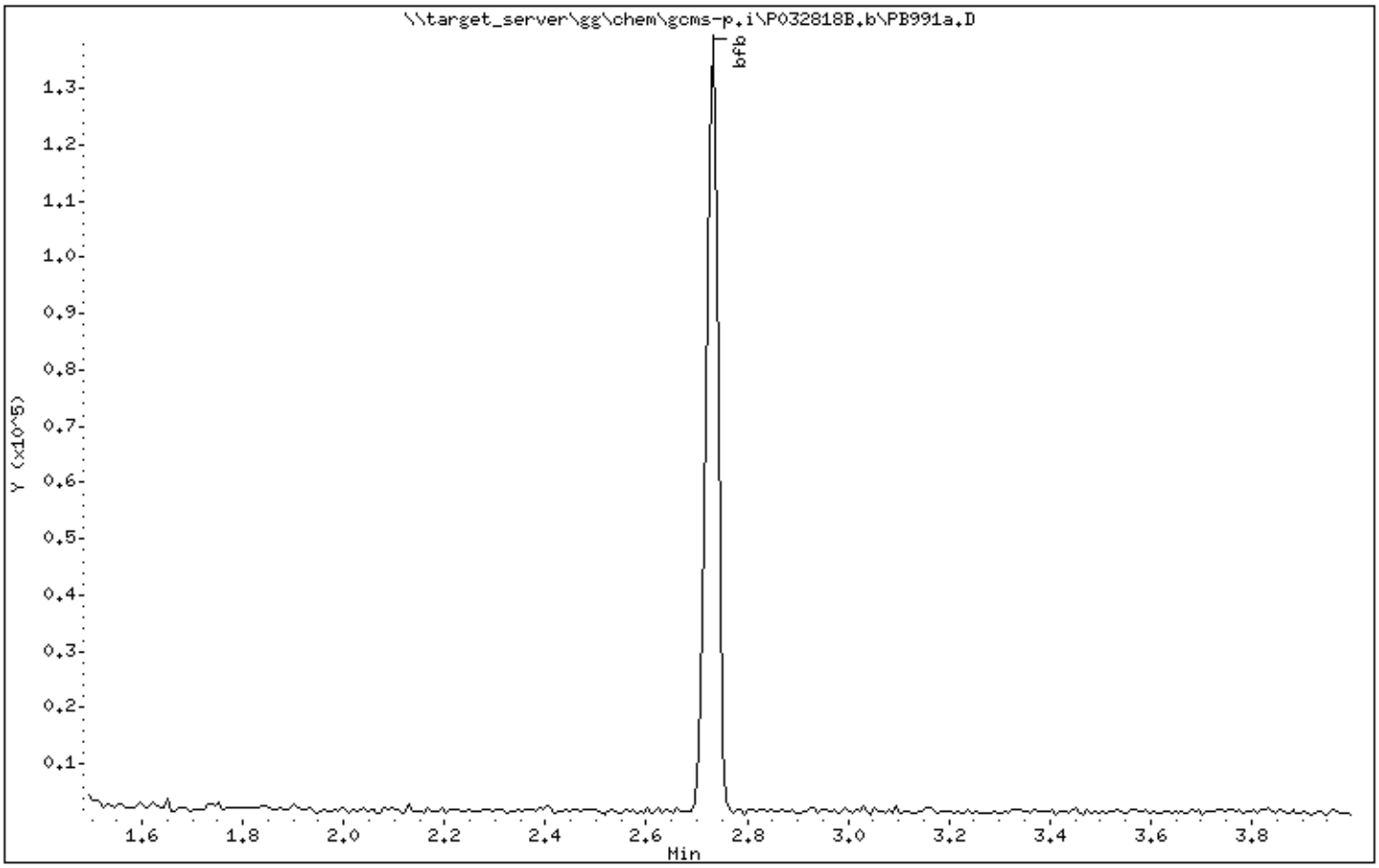
Instrument: gcms-p.i

Sample Info: WG225530-3,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\PB991a.D

Date : 28-MAR-2018 08:41

Client ID:

Instrument: gcms-p.i

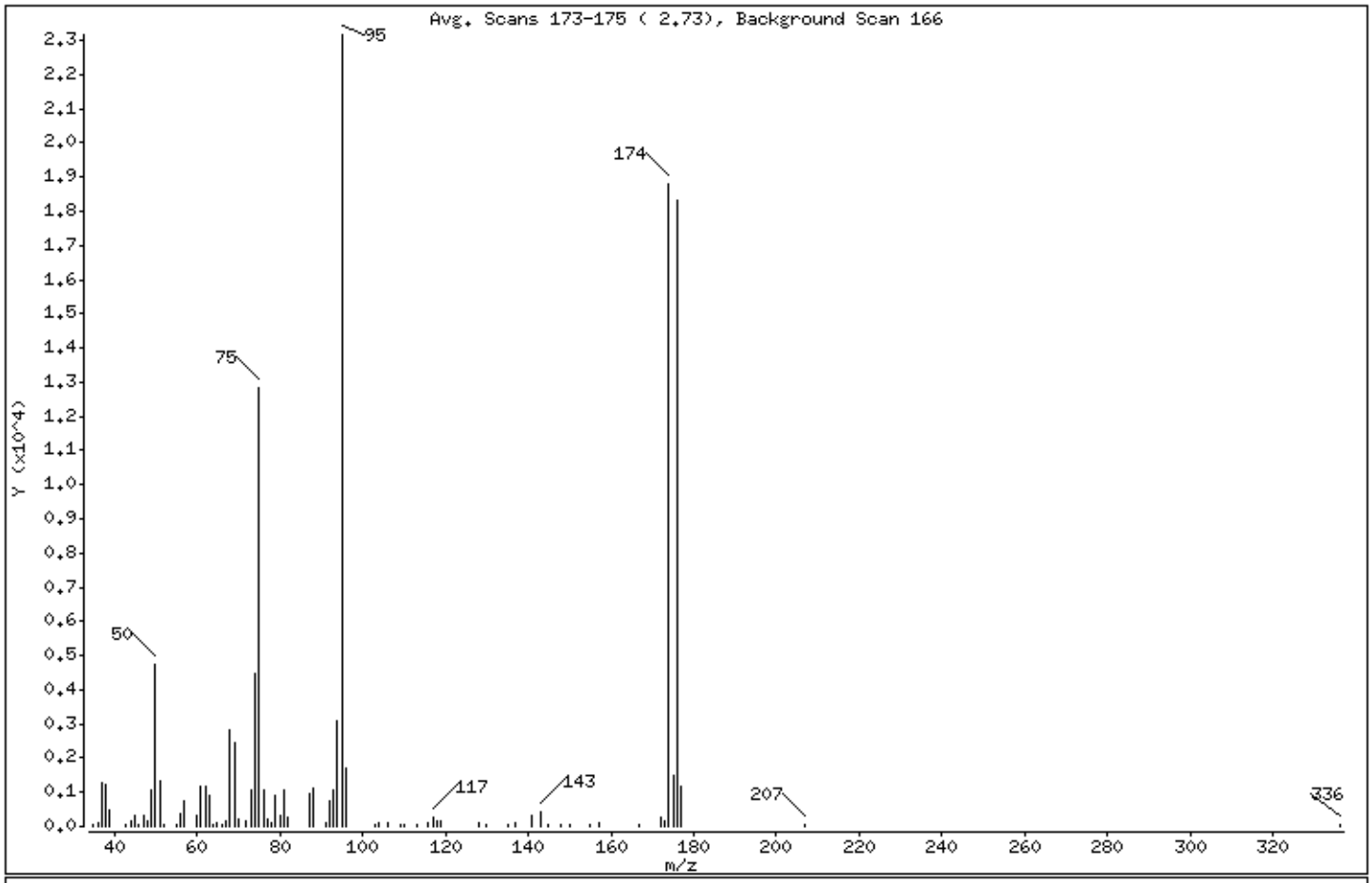
Sample Info: WG225530-3,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.38
75	30.00 - 60.00% of mass 95	55.43
96	5.00 - 9.00% of mass 95	7.29
173	Less than 2.00% of mass 174	0.60 (0.74)
174	Greater than 50.00% of mass 95	81.18
175	5.00 - 9.00% of mass 174	6.55 (8.07)
176	95.00 - 101.00% of mass 174	79.04 (97.36)
177	5.00 - 9.00% of mass 176	4.98 (6.30)

Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\PB991a.D

Date : 28-MAR-2018 08:41

Client ID:

Instrument: gcms-p.i

Sample Info: WG225530-3,SL2295

Operator: hg

Column phase: RTX-VMS

Column diameter: 0.18

Data File: PB991a.D
Spectrum: Avg. Scans 173-175 (2.73), Background Scan 166
Location of Maximum: 95.00
Number of points: 78

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	47	62.00	1146	87.00	959	135.00	35
36.00	108	63.00	907	88.00	1094	137.00	80
37.00	1300	64.00	70	91.00	92	141.00	328
38.00	1220	65.00	95	92.00	764	143.00	409
39.00	466	66.00	41	93.00	1042	145.00	34
43.00	41	67.00	149	94.00	3105	148.00	39
44.00	134	68.00	2823	95.00	23168	150.00	47
45.00	301	69.00	2453	96.00	1688	155.00	43
46.00	50	70.00	224	103.00	36	157.00	84
47.00	344	72.00	147	104.00	108	167.00	34
48.00	165	73.00	1039	106.00	94	172.00	275
49.00	1052	74.00	4486	109.00	33	173.00	139
50.00	4722	75.00	12841	110.00	40	174.00	18808
51.00	1347	76.00	1090	113.00	35	175.00	1517
52.00	40	77.00	210	116.00	113	176.00	18312
55.00	43	78.00	80	117.00	251	177.00	1154
56.00	373	79.00	906	118.00	151	207.00	38
57.00	769	80.00	299	119.00	159	336.00	38
60.00	312	81.00	1076	128.00	93		
61.00	1181	82.00	247	130.00	76		

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\TB589a.D

Date : 24-MAR-2018 11:19

Client ID:

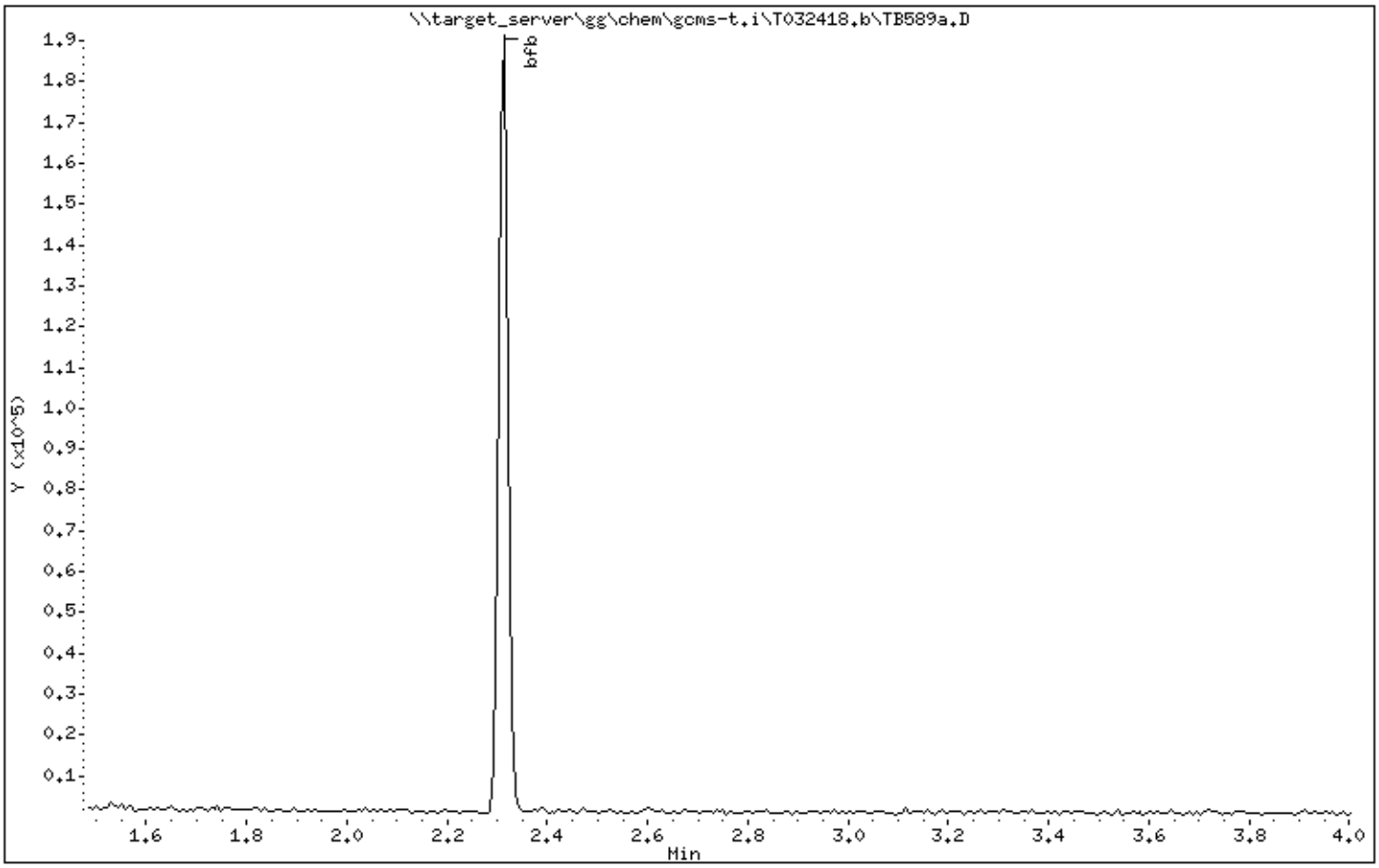
Instrument: gcms-t.i

Sample Info: WG225352-8,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\TB589a.D

Date : 24-MAR-2018 11:19

Client ID:

Instrument: gcms-t.i

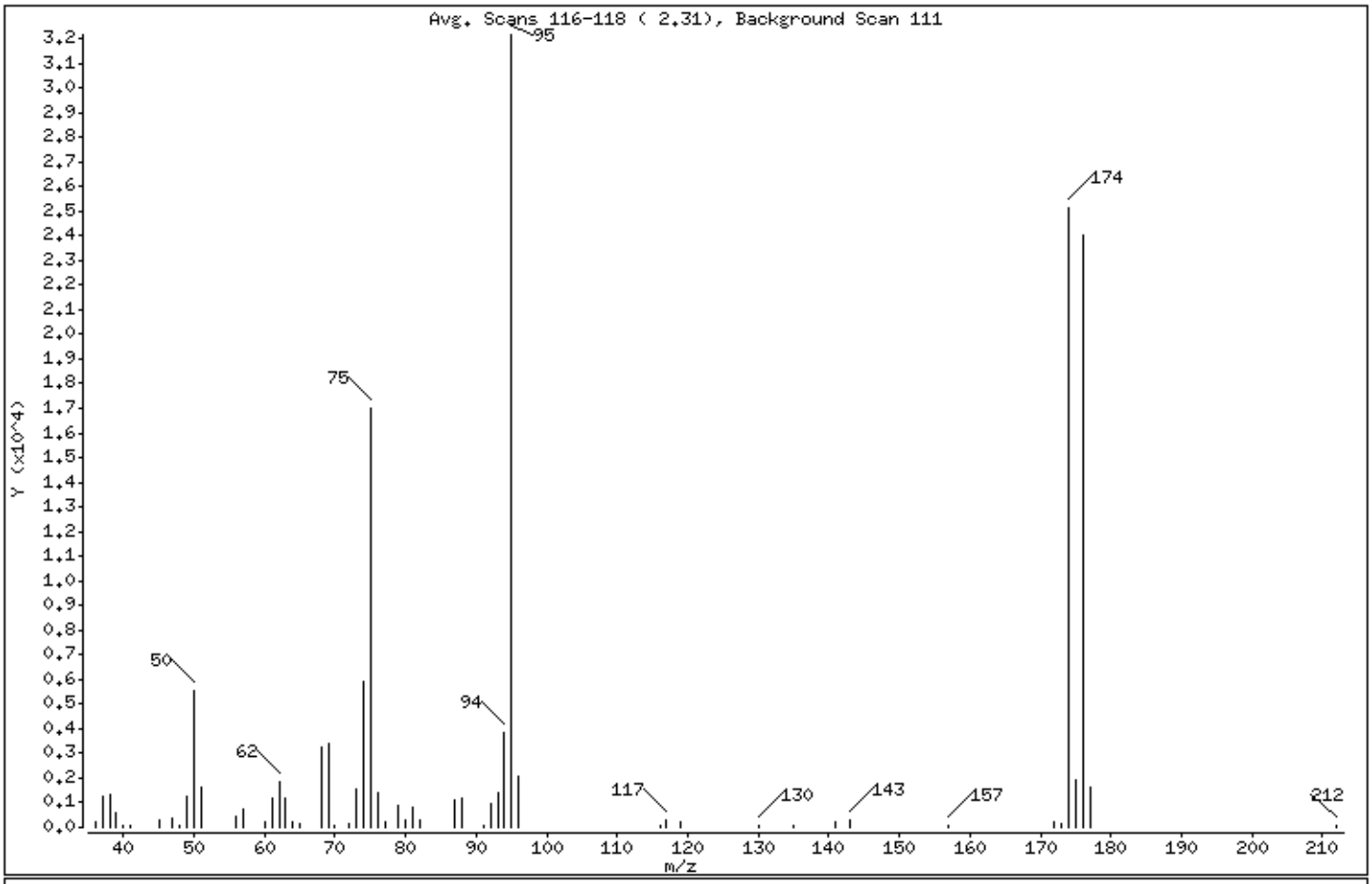
Sample Info: WG225352-8,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.24
75	30.00 - 60.00% of mass 95	52.87
96	5.00 - 9.00% of mass 95	6.46
173	Less than 2.00% of mass 174	0.35 (0.45)
174	Greater than 50.00% of mass 95	78.13
175	5.00 - 9.00% of mass 174	6.02 (7.71)
176	95.00 - 101.00% of mass 174	74.62 (95.51)
177	5.00 - 9.00% of mass 176	4.96 (6.65)

Data File: \\target_server\gg\chem\gcms-t.i\T032418.b\TB589a.D

Date : 24-MAR-2018 11:19

Client ID:

Instrument: gcms-t.i

Sample Info: WG225352-8,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: TB589a.D
Spectrum: Avg. Scans 116-118 (2.31), Background Scan 111
Location of Maximum: 95.00
Number of points: 56

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	196	61.00	1172	80.00	260	135.00	80
37.00	1258	62.00	1814	81.00	838	141.00	230
38.00	1305	63.00	1173	82.00	271	143.00	304
39.00	563	64.00	220	87.00	1127	157.00	71
40.00	95	65.00	154	88.00	1204	172.00	232
41.00	75	68.00	3273	91.00	79	173.00	114
45.00	286	69.00	3389	92.00	957	174.00	25120
47.00	335	70.00	102	93.00	1388	175.00	1936
48.00	89	72.00	143	94.00	3858	176.00	23992
49.00	1227	73.00	1561	95.00	32152	177.00	1596
50.00	5544	74.00	5942	96.00	2078	212.00	67
51.00	1650	75.00	17000	116.00	76		
56.00	460	76.00	1369	117.00	330		
57.00	759	77.00	195	119.00	258		
60.00	239	79.00	852	130.00	82		

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\TB590a.D

Date : 26-MAR-2018 08:36

Client ID:

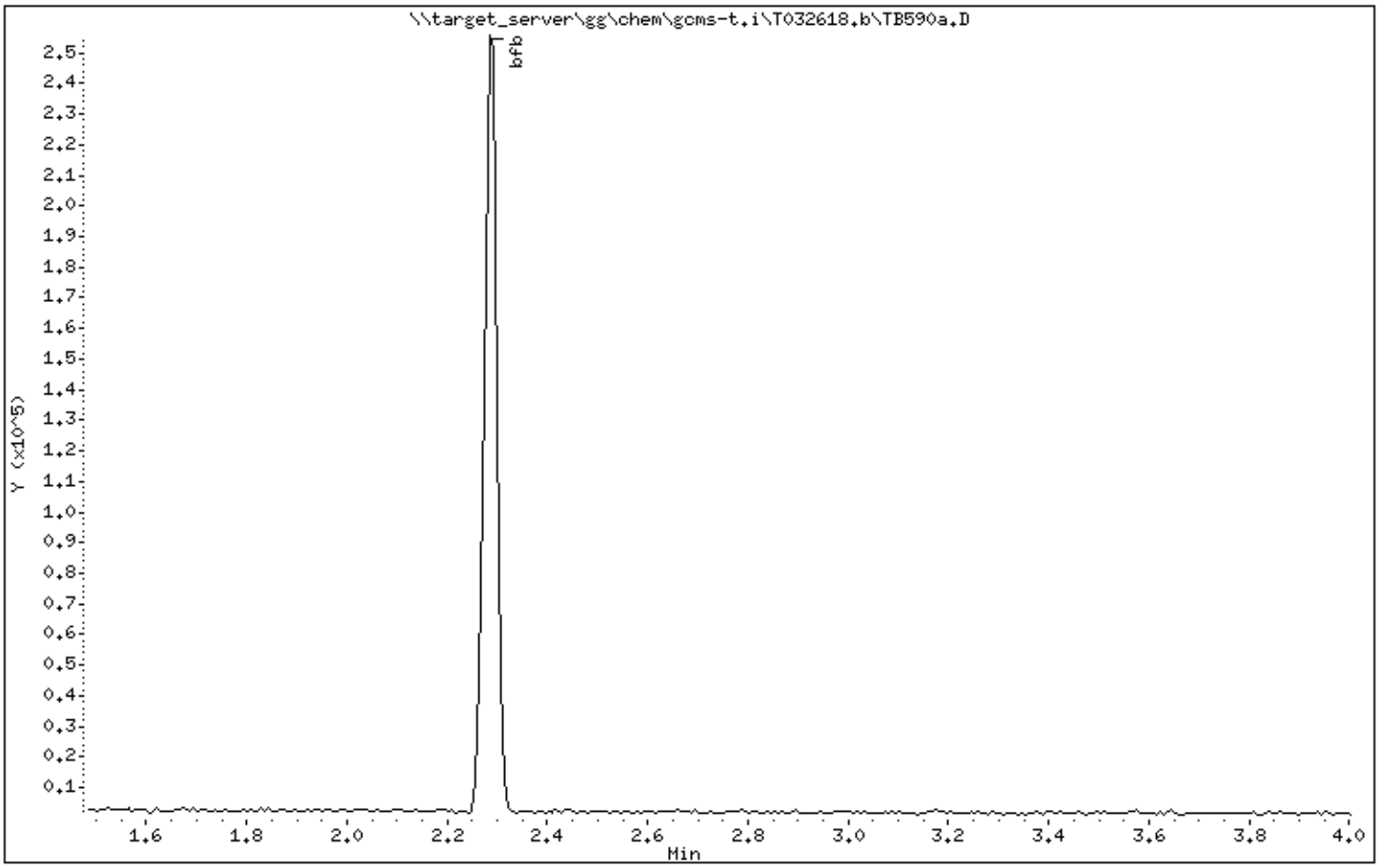
Instrument: gcms-t.i

Sample Info: WG225399-3,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\TB590a.D

Date : 26-MAR-2018 08:36

Client ID:

Instrument: gcms-t.i

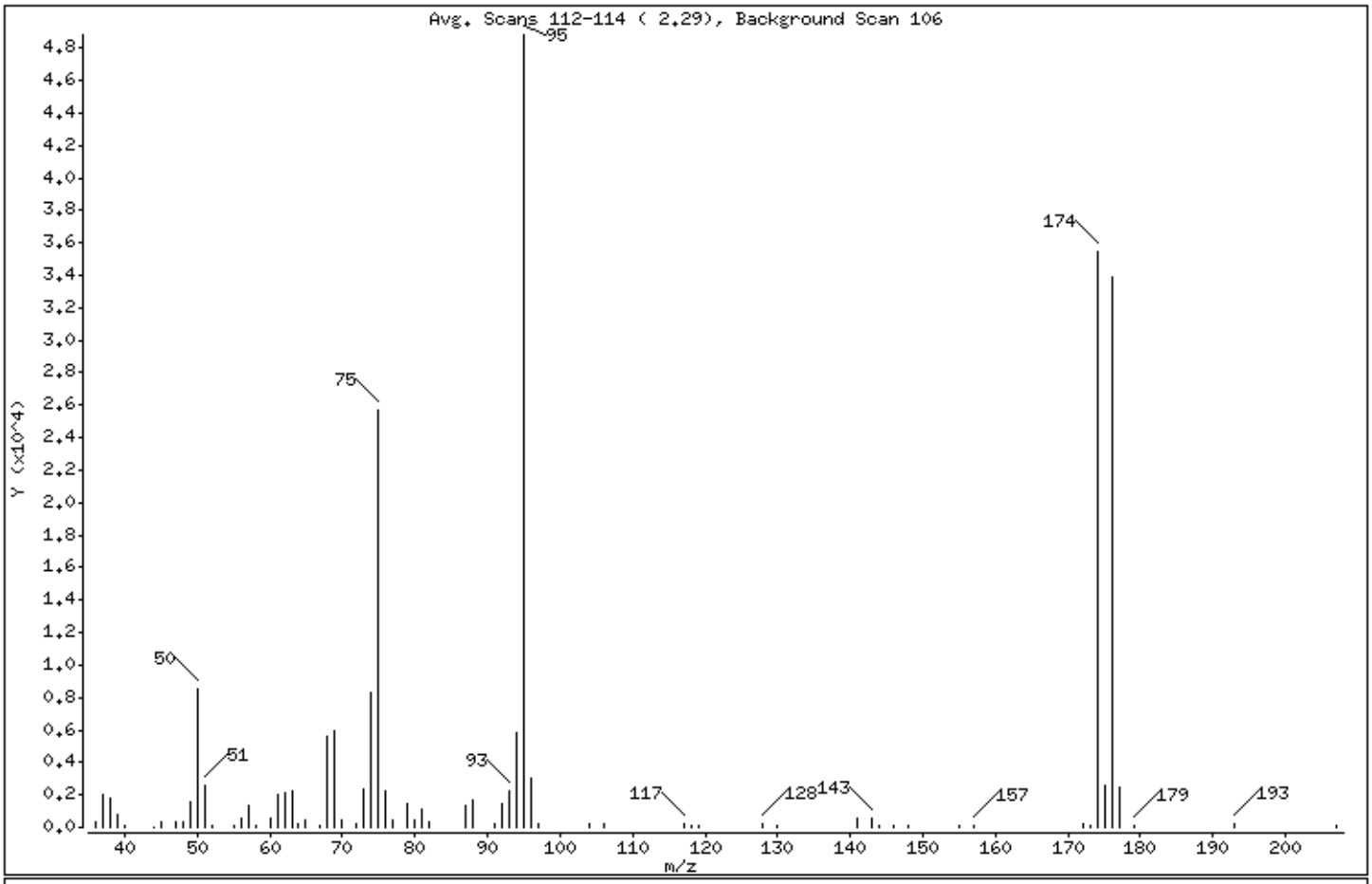
Sample Info: WG225399-3,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.54
75	30.00 - 60.00% of mass 95	52.70
96	5.00 - 9.00% of mass 95	6.15
173	Less than 2.00% of mass 174	0.18 (0.24)
174	Greater than 50.00% of mass 95	72.62
175	5.00 - 9.00% of mass 174	5.36 (7.39)
176	95.00 - 101.00% of mass 174	69.45 (95.64)
177	5.00 - 9.00% of mass 176	5.15 (7.42)

Date : 26-MAR-2018 08:36

Client ID:

Instrument: gcms-t.i

Sample Info: WG225399-3,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

Data File: TB590a.D
Spectrum: Avg. Scans 112-114 (2.29), Background Scan 106
Location of Maximum: 95.00
Number of points: 69

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	334	61.00	1990	82.00	320	143.00	601
37.00	2063	62.00	2119	87.00	1354	144.00	67
38.00	1786	63.00	2245	88.00	1669	146.00	66
39.00	731	64.00	170	91.00	200	148.00	80
40.00	157	65.00	436	92.00	1469	155.00	78
44.00	20	67.00	81	93.00	2243	157.00	110
45.00	383	68.00	5646	94.00	5789	172.00	223
47.00	389	69.00	5981	95.00	48816	173.00	86
48.00	293	70.00	474	96.00	3001	174.00	35448
49.00	1620	72.00	192	97.00	201	175.00	2618
50.00	8560	73.00	2331	104.00	238	176.00	33904
51.00	2589	74.00	8289	106.00	227	177.00	2514
52.00	69	75.00	25728	117.00	205	179.00	70
55.00	99	76.00	2231	118.00	150	193.00	175
56.00	570	77.00	443	119.00	129	207.00	108
57.00	1315	79.00	1465	128.00	174		
58.00	73	80.00	404	130.00	159		
60.00	564	81.00	1085	141.00	531		

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\TB592.D

Date : 27-MAR-2018 10:43

Client ID:

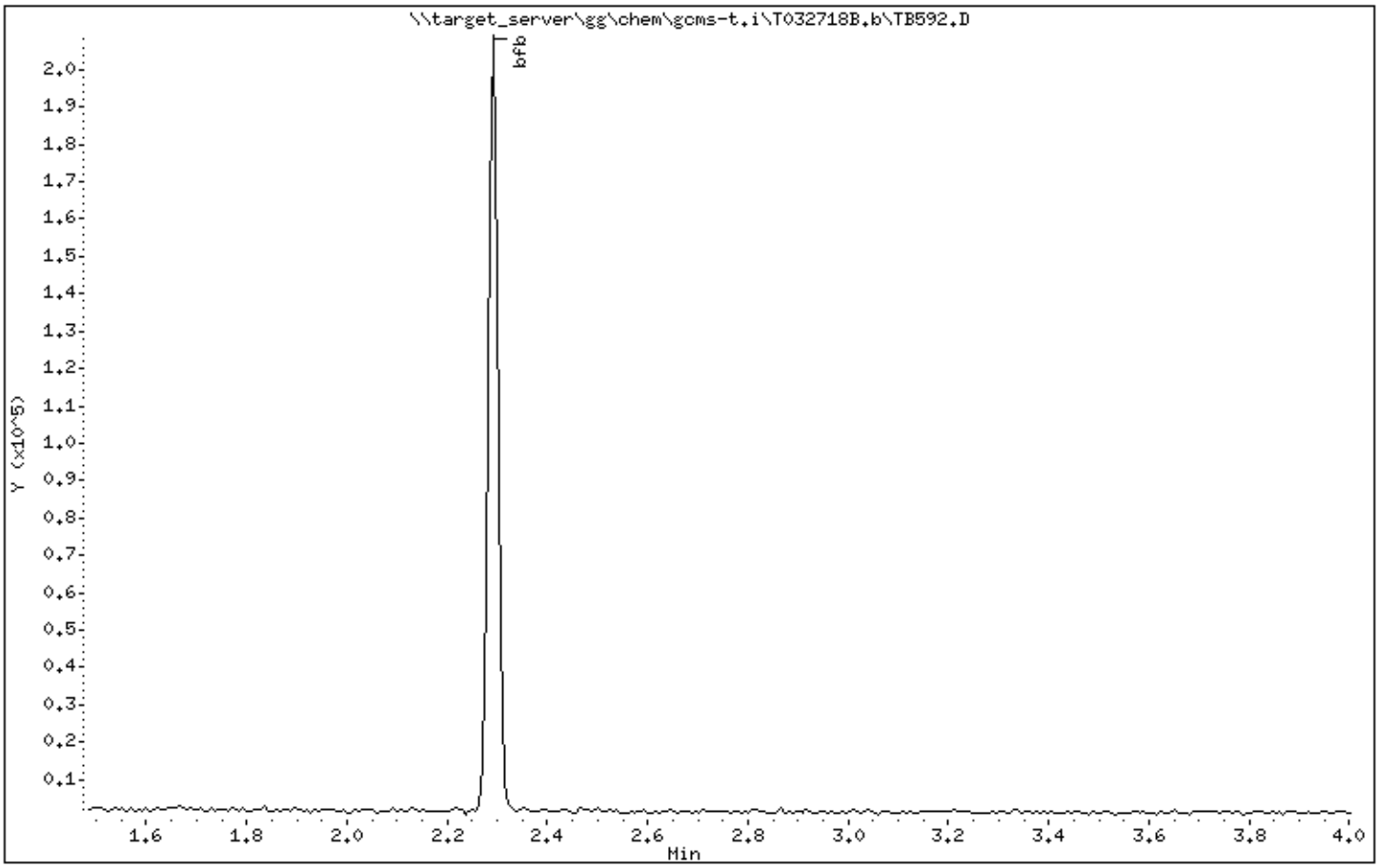
Instrument: gcms-t.i

Sample Info: WG225462-3,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\TB592.D

Date : 27-MAR-2018 10:43

Client ID:

Instrument: gcms-t.i

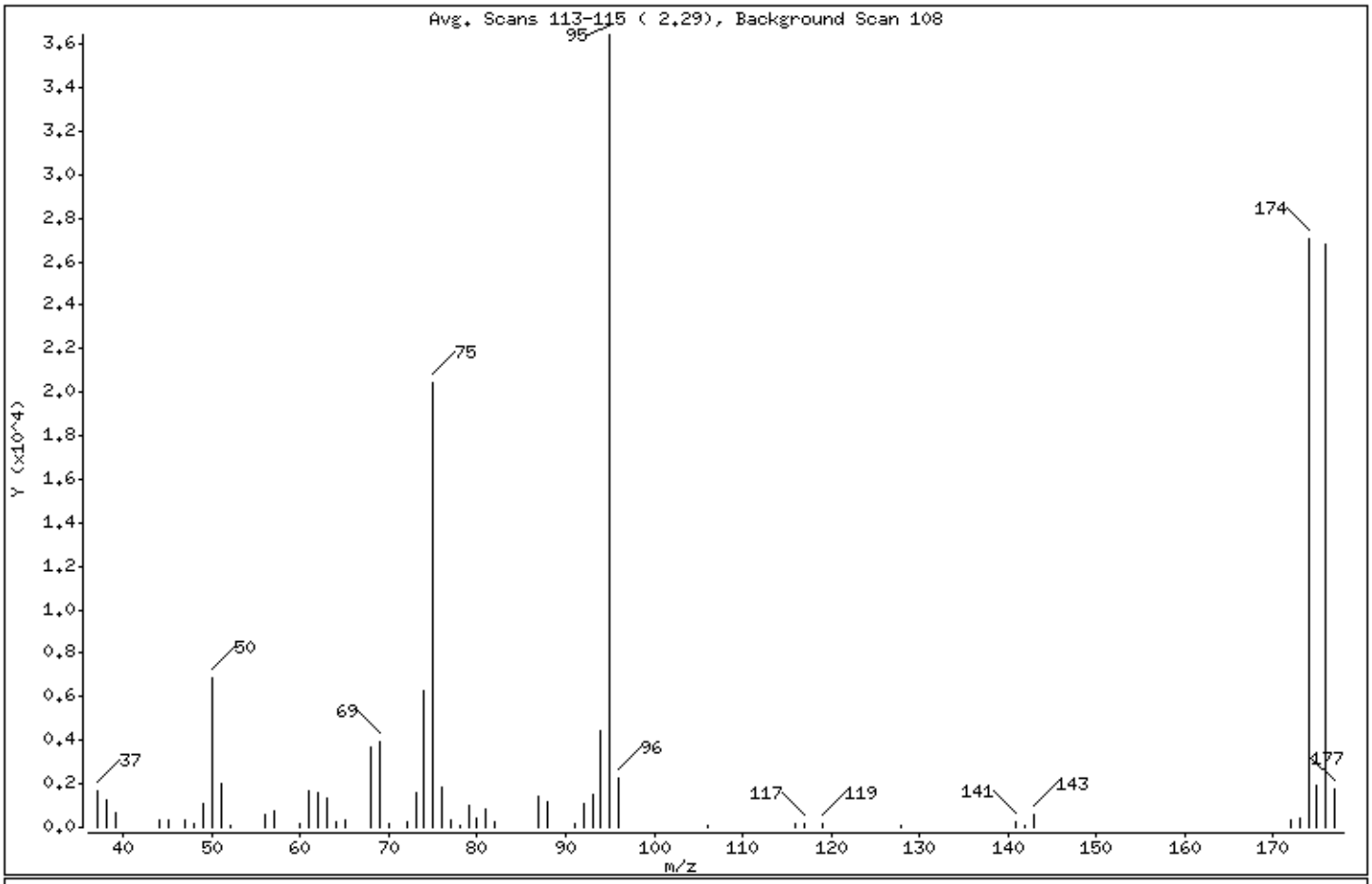
Sample Info: WG225462-3,SL2295

Operator: JSS

Column phase: RTX-VMS

Column diameter: 0.18

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.92
75	30.00 - 60.00% of mass 95	56.15
96	5.00 - 9.00% of mass 95	6.15
173	Less than 2.00% of mass 174	1.05 (1.41)
174	Greater than 50.00% of mass 95	74.31
175	5.00 - 9.00% of mass 174	5.23 (7.04)
176	95.00 - 101.00% of mass 174	73.50 (98.91)
177	5.00 - 9.00% of mass 176	4.85 (6.60)

Date : 27-MAR-2018 10:43

Client ID: Instrument: gcms-t.i

Sample Info: WG225462-3,SL2295

Operator: JSS

Column phase: RTX-VMS Column diameter: 0.18

Data File: TB592.D
Spectrum: Avg. Scans 113-115 (2.29), Background Scan 108
Location of Maximum: 95.00
Number of points: 55

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1680	61.00	1646	78.00	111	116.00	145
38.00	1282	62.00	1558	79.00	987	117.00	188
39.00	669	63.00	1318	80.00	377	119.00	180
44.00	301	64.00	251	81.00	868	128.00	91
45.00	316	65.00	297	82.00	245	141.00	219
47.00	365	68.00	3710	87.00	1400	142.00	68
48.00	152	69.00	3913	88.00	1136	143.00	573
49.00	1122	70.00	158	91.00	187	172.00	346
50.00	6892	72.00	242	92.00	1107	173.00	382
51.00	1987	73.00	1595	93.00	1513	174.00	27072
52.00	85	74.00	6244	94.00	4434	175.00	1906
56.00	565	75.00	20456	95.00	36432	176.00	26776
57.00	775	76.00	1812	96.00	2242	177.00	1768
60.00	197	77.00	344	106.00	70		

Raw QC Data Section

Report of Analytical Results

Client:
Lab ID: WG225300-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4882.D

Sample Date:
Received Date:
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG225300-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4882.D

Sample Date:
Received Date:
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		106.	%					
1,2-Dichloroethane-d4		108.	%					

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Report of Analytical Results

Client:
Lab ID: WG225300-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4882.D

Sample Date:
Received Date:
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		95.1	%					
P-Bromofluorobenzene	*	80.0	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4882.D
Report Date: 28-Mar-2018 08:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032318.b\P4882.D
Lab Smp Id: WG225300-2
Inj Date : 23-MAR-2018 09:49 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225300-2,SL2295
Misc Info : WG225300,WG225041-4,SL2295-1
Comment : SW846 5030
Method : \\TARGET_SERVER\GG\chem\gcms-p.i\P032318.b\P8A05(62)D.m
Meth Date : 26-Mar-2018 12:22 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:17 Cal File: P4810.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

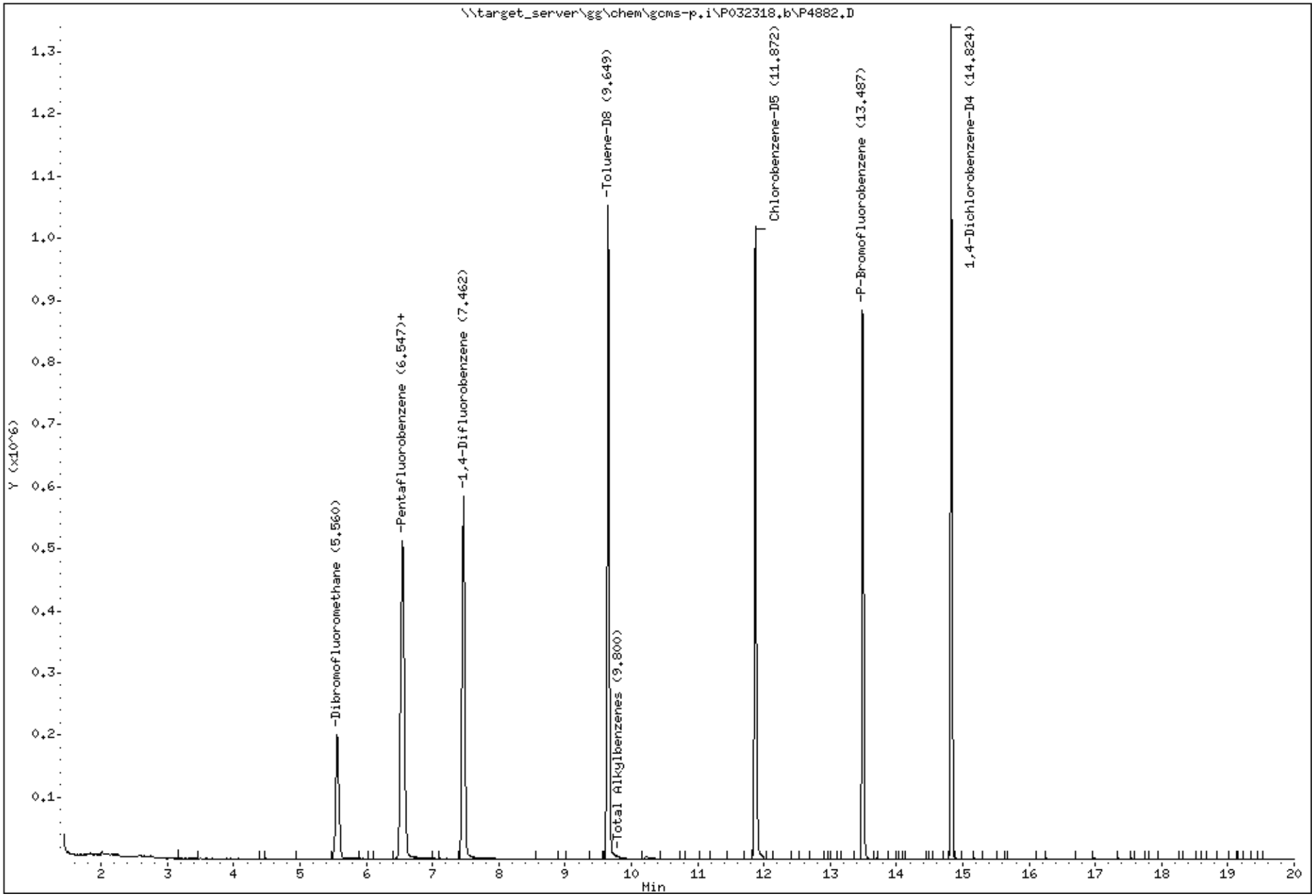
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.560	5.561	(0.850)	204361	52.9783	53.0	
*	41 Pentafluorobenzene	168	6.539	6.533	(1.000)	392542	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.560	6.562	(1.003)	295046	53.9573	54.0	
*	48 1,4-Difluorobenzene	114	7.468	7.463	(1.000)	700536	50.0000		
$	58 Toluene-D8	98	9.648	9.650	(1.292)	844461	47.5575	47.6	
*	68 Chlorobenzene-D5	117	11.871	11.873	(1.000)	661139	50.0000		
$	78 P-Bromofluorobenzene	95	13.487	13.488	(1.806)	308946	39.9772	40.0(R)	
*	94 1,4-Dichlorobenzene-D4	152	14.831	14.825	(1.000)	331920	50.0000		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4882.D
Date : 23-MAR-2018 09:49
Client ID:
Instrument: gcms-p.i
Sample Info: WG225300-2,SL2295



Katahdin Analytical Services 1000438

Report of Analytical Results

Client:
Lab ID: WG225461-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4931.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG225461-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4931.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		110.	%					
1,2-Dichloroethane-d4		111.	%					

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Report of Analytical Results

Client:
Lab ID: WG225461-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4931.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		99.1	%					
P-Bromofluorobenzene		93.2	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4931.D
Report Date: 28-Mar-2018 08:52

Katahdin Analytical Services

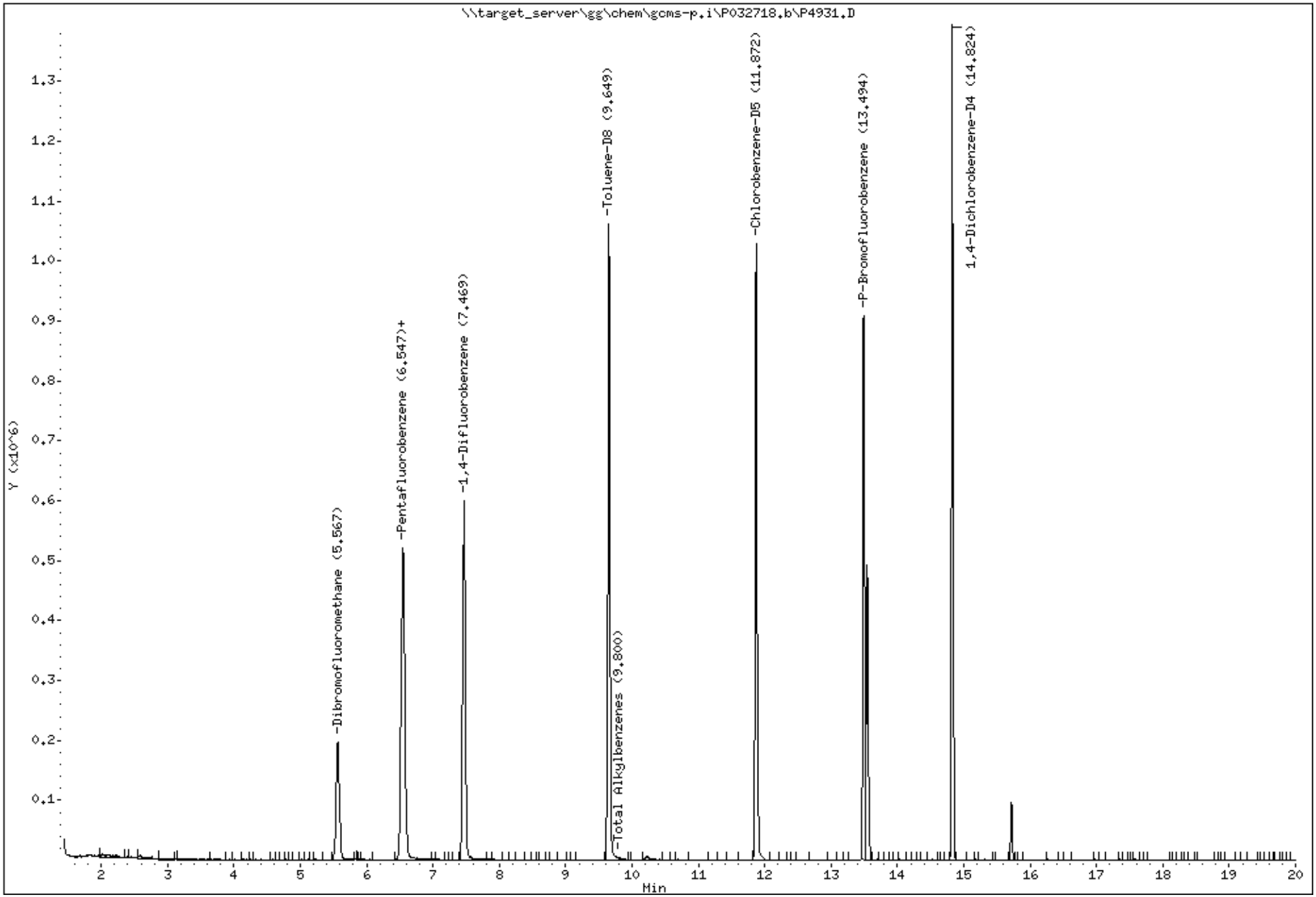
Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4931.D
Lab Smp Id: WG225461-2 Client Smp ID: WG225461-Blank
Inj Date : 27-MAR-2018 11:26 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225461-2,SL2295
Misc Info : WG225461,WG225349-4,SL2295-21
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 6 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.567	5.561	(0.851)	209960	54.9682	55.0	
*	41 Pentafluorobenzene	168	6.539	6.541	(1.000)	393252	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.560	6.569	(1.003)	298567	55.3140	55.3	
*	48 1,4-Difluorobenzene	114	7.468	7.470	(1.000)	703149	50.0000		
$	58 Toluene-D8	98	9.648	9.650	(1.292)	859414	49.5493	49.5	
*	68 Chlorobenzene-D5	117	11.871	11.873	(1.000)	673553	50.0000		
$	78 P-Bromofluorobenzene	95	13.487	13.496	(1.806)	320136	46.6297	46.6	
*	94 1,4-Dichlorobenzene-D4	152	14.823	14.832	(1.000)	345603	50.0000		

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4931.D
Date : 27-MAR-2018 11:26
Client ID: WG225461-Blank
Instrument: gcms-p.i
Sample Info: WG225461-2,SL2295



Katahdin Analytical Services 1000443

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG225530-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4968.D

Sample Date:
Received Date:
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG225530-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4968.D

Sample Date:
Received Date:
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		106.	%					
1,2-Dichloroethane-d4		107.	%					

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Report of Analytical Results

Client:
Lab ID: WG225530-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: P4968.D

Sample Date:
Received Date:
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.2	%					
P-Bromofluorobenzene		94.5	%					

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4968.D
Report Date: 04-Apr-2018 05:26

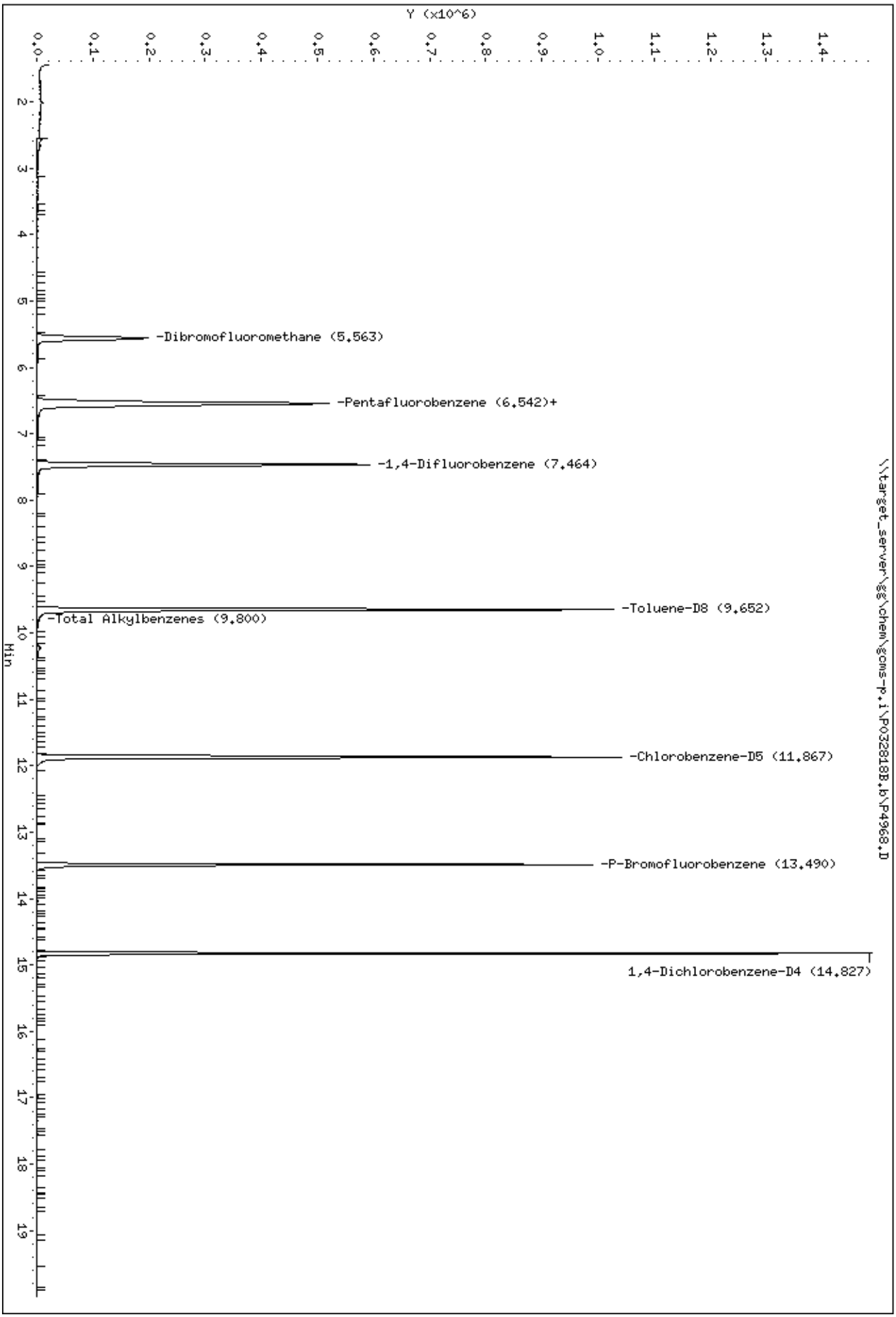
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4968.D
Lab Smp Id: WG225530-2 Client Smp ID: WG225530-Blank
Inj Date : 28-MAR-2018 11:04 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225530-2,SL2295
Misc Info : WG225530,WG225349-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 04-Apr-2018 05:23 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.562	5.561	(0.850)	205552	52.9428	52.9	
*	41 Pentafluorobenzene	168	6.542	6.541	(1.000)	399725	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.556	6.569	(1.002)	294106	53.6052	53.6	
*	48 1,4-Difluorobenzene	114	7.464	7.470	(1.000)	703933	50.0000		
$	58 Toluene-D8	98	9.651	9.650	(1.293)	852737	49.1096	49.1	
*	68 Chlorobenzene-D5	117	11.867	11.873	(1.000)	673802	50.0000		
$	78 P-Bromofluorobenzene	95	13.490	13.496	(1.807)	324779	47.2533	47.2	
*	94 1,4-Dichlorobenzene-D4	152	14.826	14.832	(1.000)	345240	50.0000		


Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4968.D
Date : 28-MAR-2018 11:04
Client ID: WG225530-Blank
Sample Info: WG225530-2,SL2295
Instrument: gcms-p.i
\\target_server\gg\chem\gcms-p.i\P032818B.b\P4968.D
Y (x10^6)
Min
-Dibromofluoromethane (5.563)
-Pentafluorobenzene (6.542)+
-1,4-Difluorobenzene (7.464)
-Toluene-D8 (9.652)
-Total Alkylbenzenes (9.800)
-Chlorobenzene-D5 (11.867)
-P-Bromofluorobenzene (13.490)
1,4-Dichlorobenzene-D4 (14.827)

Report of Analytical Results

Client:
Lab ID: WG225399-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: T4717.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG225399-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: T4717.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		113.	%					
1,2-Dichloroethane-d4		115.	%					

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Report of Analytical Results

Client:
Lab ID: WG225399-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: T4717.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		98.2	%					
P-Bromofluorobenzene		93.6	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4717.D
Report Date: 28-Mar-2018 09:36

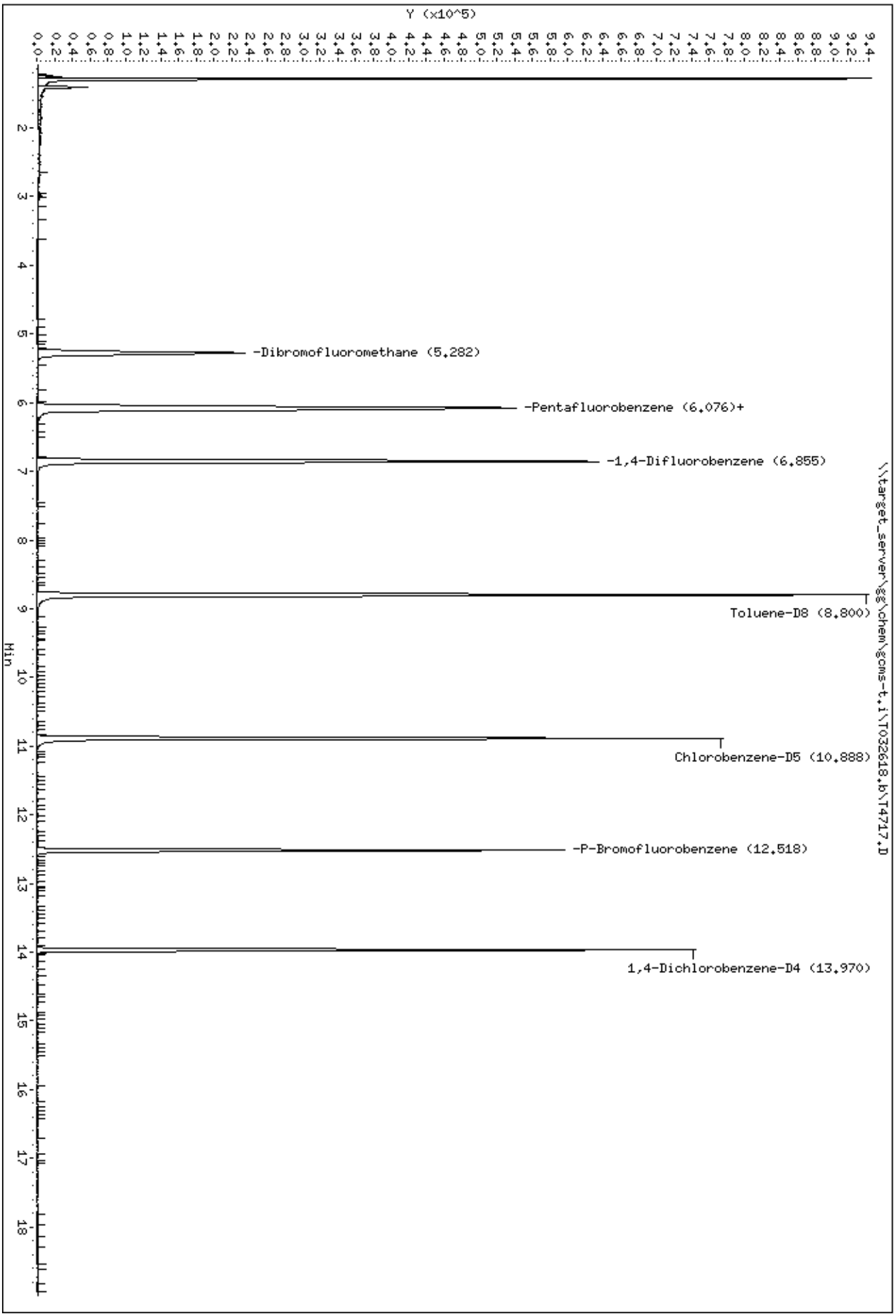
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4717.D
Lab Smp Id: WG225399-2
Inj Date : 26-MAR-2018 10:59
Operator : JSS Inst ID: gcms-t.i
Smp Info : WG225399-2,SL2295
Misc Info : WG225399,WG225352-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	225469	56.6105	56.6	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	395832	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	311811	57.4861	57.5	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	674303	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	777346	49.1286	49.1	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	513044	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	239332	46.7943	46.8	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	208539	50.0000		



Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4717.D
Date : 26-MAR-2018 10:59
Client ID:
Sample Info: WG225399-2,SL2295

Instrument: gcms-t.i

Report of Analytical Results

Client:
Lab ID: WG225462-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: T4743.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,1,1,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,1,1-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,1,2,2-Tetrachloroethane	U	0.50	ug/L	1	1	1.0	0.38	0.50
Freon-113	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,1,2-Trichloroethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
1,1-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,1-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.35	0.50
1,1-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2,3-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.27	0.50
1,2,3-Trichloropropane	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2,4-Trichlorobenzene	U	0.50	ug/L	1	1	1.0	0.37	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
1,2-Dibromo-3-Chloropropane	U	0.50	ug/L	1	1	1.0	0.50	0.50
1,2-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.15	0.50
1,2-Dichloroethane	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
1,3-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.22	0.50
1,4-Dichlorobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
2,2-Dichloropropane	U	0.50	ug/L	1	1	1.0	0.25	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.20	0.50
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
4-Chlorotoluene	U	0.50	ug/L	1	1	1.0	0.26	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Bromobenzene	U	0.50	ug/L	1	1	1.0	0.24	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Carbon Tetrachloride	U	0.50	ug/L	1	1	1.0	0.22	0.50

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Report of Analytical Results

Client:
Lab ID: WG225462-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: T4743.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Chlorobenzene	U	0.50	ug/L	1	1	1.0	0.22	0.50
Bromochloromethane	U	0.50	ug/L	1	1	1.0	0.21	0.50
Dibromochloromethane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Chloroethane	U	1.0	ug/L	1	2	2.0	0.55	1.0
Chloroform	U	0.50	ug/L	1	1	1.0	0.32	0.50
Chloromethane	U	1.0	ug/L	1	2	2.0	0.36	1.0
cis-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.21	0.50
cis-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.19	0.50
Dibromomethane	U	0.50	ug/L	1	1	1.0	0.46	0.50
Bromodichloromethane	U	0.50	ug/L	1	1	1.0	0.33	0.50
Dichlorodifluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
1,2-Dibromoethane	U	0.50	ug/L	1	1	1.0	0.22	0.50
Hexachlorobutadiene	U	0.75	ug/L	1	1	1.0	0.52	0.75
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
Methylene Chloride	U	2.5	ug/L	1	5	5.0	1.1	2.5
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
Tetrachloroethene	U	0.50	ug/L	1	1	1.0	0.40	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
trans-1,2-Dichloroethene	U	0.50	ug/L	1	1	1.0	0.25	0.50
trans-1,3-Dichloropropene	U	0.50	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	0.50	ug/L	1	1	1.0	0.28	0.50
Trichlorofluoromethane	U	1.0	ug/L	1	2	2.0	0.24	1.0
Vinyl Chloride	U	1.0	ug/L	1	2	2.0	0.25	1.0
Dibromofluoromethane		111.	%					
1,2-Dichloroethane-d4		116.	%					

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Report of Analytical Results

Client:
Lab ID: WG225462-2
Client ID: Method Blank Sample
Project:
SDG: SL2295
Lab File ID: T4743.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Toluene-d8		100.	%					
P-Bromofluorobenzene		91.6	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4743.D
Report Date: 28-Mar-2018 09:39

Katahdin Analytical Services

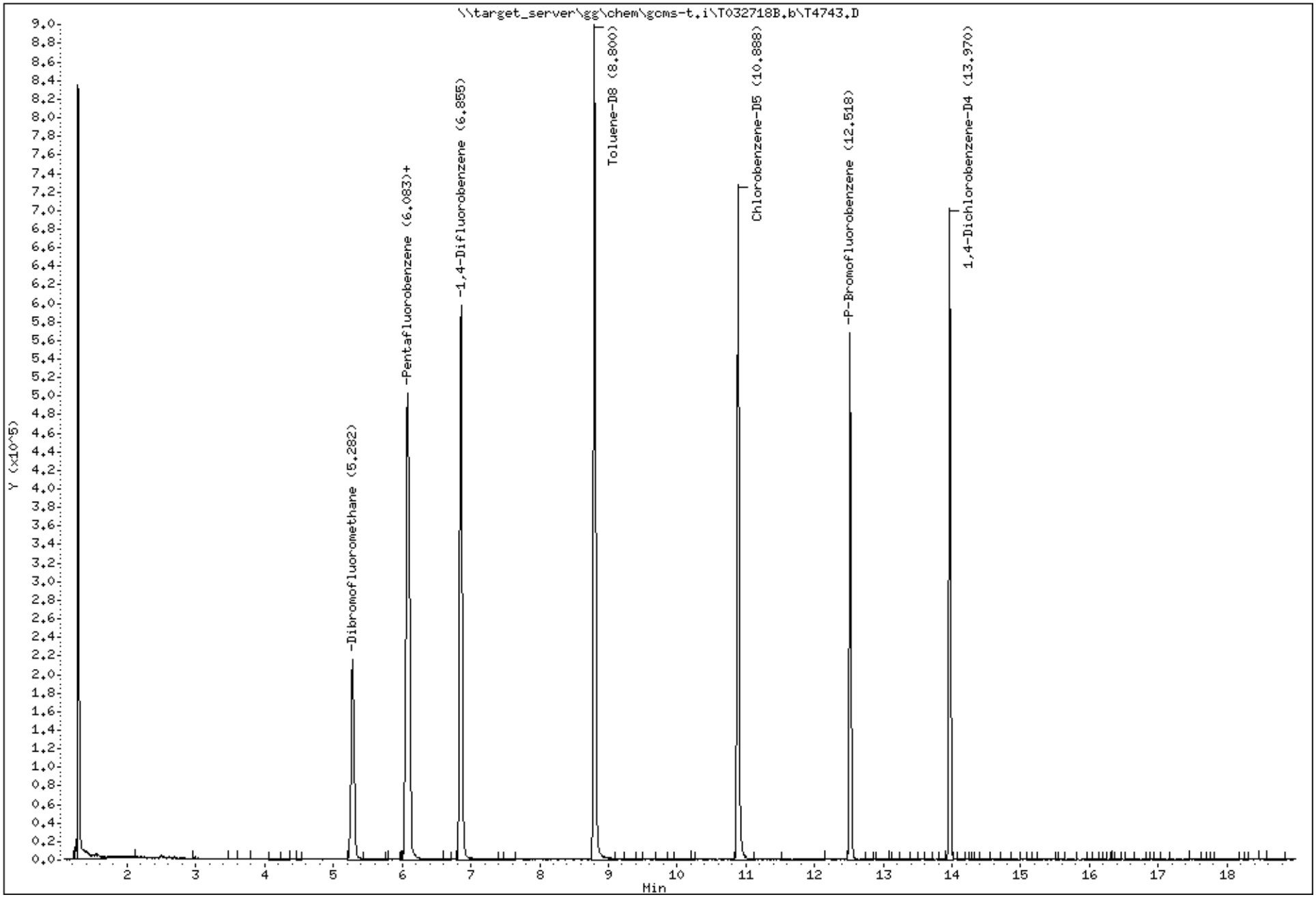
Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4743.D
Lab Smp Id: WG225462-2 Client Smp ID: WG225462-Blank
Inj Date : 27-MAR-2018 13:52
Operator : JSS Inst ID: gcms-t.i
Smp Info : WG225462-2,SL2295
Misc Info : WG225462,WG225352-4,SL2295-6
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 28-Mar-2018 06:28 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: MIS_GUEST

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
$	34 Dibromofluoromethane	113	5.282	5.275	(0.870)	207635	55.5343	55.5	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	371587	50.0000		
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	296347	58.1999	58.2	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	619151	50.0000		
$	58 Toluene-D8	98	8.800	8.800	(1.284)	729867	50.2368	50.2	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	483959	50.0000		
$	78 P-Bromofluorobenzene	95	12.518	12.511	(1.826)	215161	45.8157	45.8	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	188981	50.0000		

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4743.D
Date : 27-MAR-2018 13:52
Client ID: WG225462-Blank
Instrument: gcms-t.i
Sample Info: WG225462-2,SL2295



Katahdin Analytical Services 1000458

LCS Recovery Report

Client:
Lab ID: WG225300-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: P4880.D

Sample Date:
Received Date:
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	109.	50.0	54.7	ug/L	78-125
1,1,1-Trichloroethane	95.0	50.0	47.5	ug/L	74-131
1,1,2,2-Tetrachloroethane	109.	50.0	54.6	ug/L	71-121
Freon-113	99.4	50.0	49.7	ug/L	70-136
1,1,2-Trichloroethane	88.6	50.0	44.3	ug/L	80-120
1,1-Dichloroethane	99.4	50.0	49.7	ug/L	77-125
1,1-Dichloroethene	100.	50.0	50.2	ug/L	71-131
1,1-Dichloropropene	98.0	50.0	49.0	ug/L	79-125
1,2,3-Trichlorobenzene	106.	50.0	52.9	ug/L	69-129
1,2,3-Trichloropropane	104.	50.0	52.1	ug/L	73-122
1,2,4-Trichlorobenzene	111.	50.0	55.7	ug/L	69-130
1,2,4-Trimethylbenzene	101.	50.0	50.7	ug/L	76-124
1,2-Dibromo-3-Chloropropane	96.8	50.0	48.4	ug/L	62-128
1,2-Dichlorobenzene	110.	50.0	55.2	ug/L	80-120
1,2-Dichloroethane	93.8	50.0	46.9	ug/L	73-128
1,2-Dichloropropane	96.0	50.0	48.0	ug/L	78-122
1,3,5-Trimethylbenzene	101.	50.0	50.4	ug/L	75-124
1,3-Dichlorobenzene	111.	50.0	55.4	ug/L	80-120
1,3-Dichloropropane	102.	50.0	51.1	ug/L	80-120
1,4-Dichlorobenzene	105.	50.0	52.5	ug/L	79-120
2,2-Dichloropropane	107.	50.0	53.3	ug/L	60-139
2-Butanone	101.	50.0	50.6	ug/L	56-143
2-Chlorotoluene	111.	50.0	55.3	ug/L	79-122
2-Hexanone	93.0	50.0	46.5	ug/L	57-139
4-Chlorotoluene	102.	50.0	51.1	ug/L	78-122
P-Isopropyltoluene	103.	50.0	51.6	ug/L	77-127
4-Methyl-2-Pentanone	87.6	50.0	43.8	ug/L	67-130
Acetone	121.	50.0	60.4	ug/L	39-160
Benzene	94.6	50.0	47.3	ug/L	79-120
Bromobenzene	108.	50.0	53.9	ug/L	80-120
Bromoform	95.8	50.0	47.9	ug/L	66-130
Bromomethane	107.	50.0	53.4	ug/L	53-141
Carbon Disulfide	108.	50.0	54.2	ug/L	64-133
Carbon Tetrachloride	102.	50.0	50.9	ug/L	72-136
Chlorobenzene	104.	50.0	52.1	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG225300-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: P4880.D

Sample Date:
Received Date:
Extract Date: 23-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225300

Analysis Date: 23-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	93.0	50.0	46.5	ug/L	78-123
Dibromochloromethane	101.	50.0	50.4	ug/L	74-126
Chloroethane	96.4	50.0	48.2	ug/L	60-138
Chloroform	96.2	50.0	48.1	ug/L	79-124
Chloromethane	93.4	50.0	46.7	ug/L	50-139
cis-1,2-Dichloroethene	89.2	50.0	44.6	ug/L	78-123
cis-1,3-Dichloropropene	85.6	50.0	42.8	ug/L	75-124
Dibromomethane	88.8	50.0	44.4	ug/L	79-123
Bromodichloromethane	103.	50.0	51.4	ug/L	79-125
Dichlorodifluoromethane	84.2	50.0	42.1	ug/L	32-152
Ethylbenzene	96.2	50.0	48.1	ug/L	79-121
1,2-Dibromoethane	87.6	50.0	43.8	ug/L	77-121
Hexachlorobutadiene	108.	50.0	54.0	ug/L	66-134
Isopropylbenzene	105.	50.0	52.4	ug/L	72-131
Methyl tert-butyl Ether	88.8	50.0	44.4	ug/L	71-124
Methylene Chloride	90.6	50.0	45.3	ug/L	74-124
m+p-Xylenes	96.6	100.	96.6	ug/L	80-121
Naphthalene	98.0	50.0	49.0	ug/L	61-128
N-Butylbenzene	108.	50.0	53.8	ug/L	75-128
N-Propylbenzene	114.	50.0	57.2	ug/L	76-126
o-Xylene	95.2	50.0	47.6	ug/L	78-122
sec-Butylbenzene	105.	50.0	52.3	ug/L	77-126
Styrene	95.0	50.0	47.5	ug/L	78-123
tert-Butylbenzene	99.2	50.0	49.6	ug/L	78-124
Tetrachloroethene	105.	50.0	52.6	ug/L	74-129
Toluene	95.6	50.0	47.8	ug/L	80-121
trans-1,2-Dichloroethene	94.2	50.0	47.1	ug/L	75-124
trans-1,3-Dichloropropene	86.8	50.0	43.4	ug/L	73-127
Trichloroethene	98.0	50.0	49.0	ug/L	79-123
Trichlorofluoromethane	93.8	50.0	46.9	ug/L	65-141
Vinyl Chloride	92.6	50.0	46.3	ug/L	58-137
Dibromofluoromethane	98.6				80-120
1,2-Dichloroethane-d4	97.9				81-120
Toluene-d8	98.1				89-120
P-Bromofluorobenzene	88.3				85-120

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Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4880.D
Report Date: 28-Mar-2018 08:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032318.b\P4880.D
Lab Smp Id: WG225300-1
Inj Date : 23-MAR-2018 08:35 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225300-1,SL2295
Misc Info : WG225300,WG225041-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032318.b\P8A05(62)D.m
Meth Date : 26-Mar-2018 12:22 gcms-p.i Quant Type: ISTD
Cal Date : 19-MAR-2018 18:17 Cal File: P4810.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.536	1.537	(0.235)	165881	42.0720	42.1	
2	Chloromethane	50	1.694	1.694	(0.259)	262800	46.7411	46.7	
3	Vinyl chloride	62	1.751	1.751	(0.268)	272991	46.3009	46.3	
4	Bromomethane	94	2.001	2.001	(0.306)	139501	53.3741	53.4	
5	Chloroethane	64	2.101	2.101	(0.322)	181450	48.1518	48.2	
6	Trichlorofluoromethane	101	2.208	2.209	(0.338)	379006	46.8819	46.9	
7	Diethyl Ether	59	2.459	2.459	(0.376)	207035	48.4607	48.5	
19	Tertiary-butyl alcohol	59	3.566	3.560	(0.546)	71335	297.902	298	
8	1,1-Dichloroethene	96	2.630	2.631	(0.403)	183391	50.1600	50.2	
10	Carbon Disulfide	76	2.666	2.666	(0.408)	675365	54.2160	54.2	
9	Freon-113	151	2.659	2.659	(0.407)	135600	49.7394	49.7	
11	Iodomethane	142	2.766	2.766	(0.423)	173275	45.6704	45.7	
12	Acrolein	56	2.945	2.945	(0.451)	203945	240.782	241	
14	Methylene Chloride	84	3.180	3.181	(0.487)	203043	45.3222	45.3	
15	Acetone	43	3.231	3.231	(0.495)	76236	60.3796	60.4	
45	Isobutyl Alcohol	43	6.869	6.869	(1.051)	147011	1223.80	1220	
16	trans-1,2-Dichloroethene	96	3.338	3.338	(0.511)	186808	47.0796	47.1	
13	Allyl Chloride	41	3.066	3.074	(0.469)	304266	47.7636	47.8	
18	Methyl tert-butyl ether	73	3.452	3.453	(0.528)	507920	44.4191	44.4	
20	Acetonitrile	41	3.745	3.753	(0.573)	309908	498.557	498	
21	Di-isopropyl ether	45	3.888	3.889	(0.595)	627263	46.4802	46.5	
22	Chloroprene	53	4.017	4.017	(0.615)	297753	48.5045	48.5	
39	Propionitrile	54	6.390	6.390	(0.978)	351724	505.809	506	
40	Methacrylonitrile	41	6.419	6.426	(0.982)	1543778	481.719	482	

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4880.D
Report Date: 28-Mar-2018 08:49

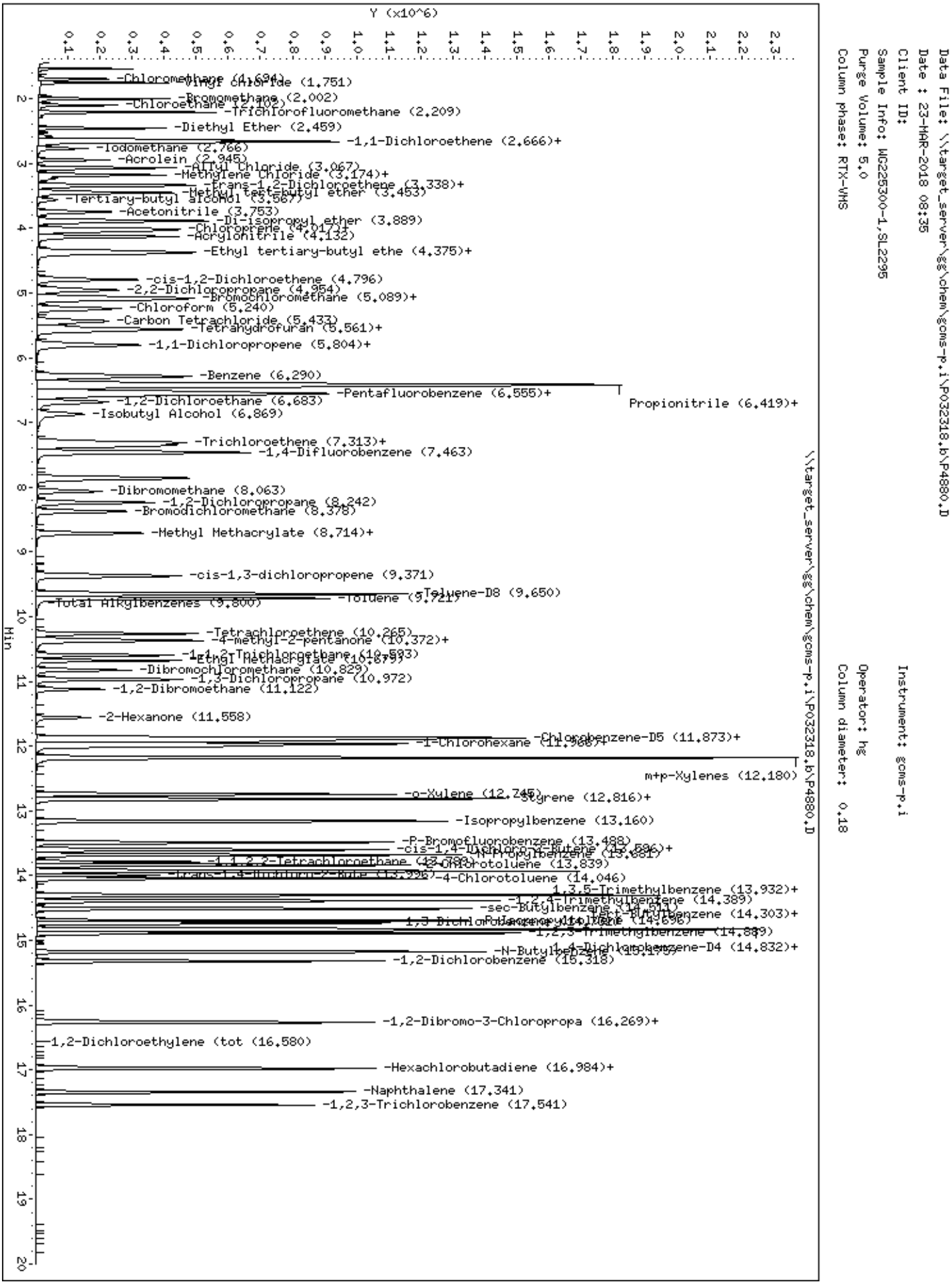
							CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	23 1,1-Dichloroethane	63	4.045	4.053	(0.619)	367679	49.7414	49.7	
	24 Acrylonitrile	52	4.131	4.131	(0.632)	378476	235.631	236	
	25 Ethyl tertiary-butyl ether	59	4.367	4.368	(0.668)	545359	41.3981	41.4(R)	
	26 Vinyl Acetate	43	4.396	4.396	(0.589)	485031	61.7339	61.7	
	27 cis-1,2-Dichloroethene	96	4.789	4.796	(0.733)	201371	44.6287	44.6	
M	98 1,2-Dichloroethylene (total)	96				388179	91.7083	91.7	
	52 Methyl Methacrylate	41	8.713	8.706	(1.168)	188956	41.3376	41.3	
	28 2,2-Dichloropropane	77	4.953	4.954	(0.758)	268194	53.3460	53.3	
	29 Bromochloromethane	128	5.103	5.104	(0.781)	87453	46.4906	46.5	
	31 Chloroform	83	5.246	5.240	(0.803)	338738	48.1109	48.1	
	32 Carbon Tetrachloride	117	5.432	5.440	(0.728)	243485	50.9179	50.9	
	33 Tetrahydrofuran	42	5.511	5.497	(0.844)	59555	44.8172	44.8	
$	34 Dibromofluoromethane	113	5.561	5.561	(0.851)	232638	49.2838	49.3	
	35 1,1,1-Trichloroethane	97	5.568	5.576	(0.852)	289774	47.5356	47.5	
	37 1,1-Dichloropropene	75	5.804	5.797	(0.778)	263034	48.9960	49.0	
	36 2-Butanone	43	5.825	5.819	(0.892)	103369	50.6040	50.6	
	38 Benzene	78	6.290	6.290	(0.843)	764820	47.3021	47.3	
*	41 Pentafluorobenzene	168	6.533	6.533	(1.000)	480356	50.0000		
	30 Cyclohexane	56	5.075	5.075	(0.777)	304043	42.2224	42.2	
	53 Ethyl Methacrylate	69	10.679	10.679	(1.431)	276931	40.1607	40.2	
$	42 1,2-Dichloroethane-D4	65	6.561	6.562	(1.004)	327680	48.9704	49.0	
	43 Tertiary-amyl methyl ether	73	6.569	6.562	(1.005)	500208	39.2582	39.2(R)	
	44 1,2-Dichloroethane	62	6.690	6.684	(0.897)	285220	46.9350	46.9	
	47 Trichloroethene	95	7.362	7.363	(0.987)	187918	49.0425	49.0	
*	48 1,4-Difluorobenzene	114	7.462	7.463	(1.000)	791836	50.0000		
	49 Dibromomethane	93	8.063	8.063	(1.080)	117393	44.4538	44.4	
	50 1,2-Dichloropropane	63	8.241	8.242	(1.104)	196103	48.0458	48.0	
	51 Bromodichloromethane	83	8.377	8.378	(1.123)	264984	51.3710	51.4	
	57 cis-1,3-dichloropropene	75	9.378	9.378	(1.257)	336980	42.8024	42.8	
	54 1,4-Dioxane	88	8.713	8.721	(1.168)	39129	884.980	885	
$	58 Toluene-D8	98	9.649	9.650	(1.293)	984655	49.0590	49.0	
	59 Toluene	92	9.721	9.721	(1.303)	501443	47.8020	47.8	
	61 4-methyl-2-pentanone	43	10.350	10.343	(1.387)	190089	43.7641	43.8	
	60 Tetrachloroethene	164	10.264	10.265	(0.865)	148512	52.6444	52.6	
	62 trans-1,3-Dichloropropene	75	10.379	10.379	(1.391)	316679	43.4173	43.4	
	63 1,1,2-Trichloroethane	83	10.593	10.593	(1.420)	153147	44.3050	44.3	
	64 Dibromochloromethane	129	10.829	10.829	(0.912)	199795	50.3831	50.4	
	65 1,3-Dichloropropane	76	10.972	10.972	(0.924)	350396	51.0672	51.1	
	66 1,2-Dibromoethane	107	11.122	11.122	(1.490)	184472	43.7723	43.8	
	67 2-Hexanone	43	11.558	11.558	(0.974)	130054	46.5010	46.5	
*	68 Chlorobenzene-D5	117	11.872	11.873	(1.000)	786218	50.0000		
	69 Chlorobenzene	112	11.894	11.894	(1.002)	571348	52.1389	52.1	
	70 1-Chlorohexane	91	11.922	11.923	(1.004)	285391	54.3547	54.4	
	71 Ethylbenzene	106	11.965	11.966	(1.008)	304247	48.1057	48.1	
	72 1,1,1,2-Tetrachloroethane	131	12.001	12.002	(1.011)	199463	54.6685	54.7	
M	106 Xylenes (total)	106				1125755	144.121	144	
	73 m+p-Xylenes	106	12.180	12.180	(1.026)	771334	96.5596	96.6	
	74 o-Xylene	106	12.745	12.745	(1.073)	354421	47.5609	47.6	
	75 Styrene	104	12.816	12.817	(1.079)	627841	47.4604	47.5	
	76 Bromoform	173	12.816	12.817	(1.079)	135235	47.9233	47.9	
	77 Isopropylbenzene	105	13.159	13.160	(0.888)	931394	52.4444	52.4	
$	78 P-Bromofluorobenzene	95	13.488	13.488	(1.807)	385717	44.1564	44.2	
	79 cis-1,4-Dichloro-2-Butene	53	13.609	13.610	(0.918)	106830	50.0187	50.0	
	86 trans-1,4-Dichloro-2-Butene	53	13.995	13.996	(0.944)	84887	58.4288	58.4	

Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4880.D
Report Date: 28-Mar-2018 08:49

			QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.595	13.596	(0.917)	230580	53.9209	53.9	
	81	N-Propylbenzene	91	13.681	13.674	(0.923)	1161567	57.1917	57.2	
	82	1,1,2,2-Tetrachloroethane	83	13.788	13.789	(0.930)	272302	54.5662	54.6	
	85	1,3,5-Trimethylbenzene	105	13.931	13.932	(0.940)	784384	50.3787	50.4	
	83	2-Chlorotoluene	91	13.838	13.839	(0.933)	673293	55.3286	55.3	
	84	1,2,3-Trichloropropane	75	13.924	13.924	(0.939)	238246	52.1237	52.1	
	87	4-Chlorotoluene	91	14.045	14.046	(0.947)	728815	51.0912	51.1	
	88	tert-Butylbenzene	119	14.303	14.303	(0.965)	775338	49.5745	49.6	
	89	Pentachloroethane	165	14.310	14.310	(0.965)	113512	54.7987	54.8	
	90	1,2,4-Trimethylbenzene	105	14.389	14.389	(0.971)	816296	50.6601	50.7	
	92	P-Isopropyltoluene	119	14.696	14.696	(0.991)	821492	51.5610	51.6	
	93	1,3-Dichlorobenzene	146	14.739	14.739	(0.994)	458581	55.4443	55.4	
*	94	1,4-Dichlorobenzene-D4	152	14.825	14.825	(1.000)	422216	50.0000		
	95	1,4-Dichlorobenzene	146	14.846	14.847	(1.001)	474043	52.4837	52.5	
	97	N-Butylbenzene	91	15.175	15.175	(1.024)	765828	53.7825	53.8	
	91	sec-Butylbenzene	105	14.510	14.511	(0.979)	977376	52.2709	52.3	
	99	1,2-Dichlorobenzene	146	15.325	15.325	(1.034)	435283	55.2456	55.2	
	100	1,2-Dibromo-3-Chloropropane	75	16.240	16.239	(1.095)	46493	48.4268	48.4	
	101	1,3,5-Trichlorobenzene	180	16.268	16.268	(1.097)	313761	56.2691	56.3	
	102	Hexachlorobutadiene	225	16.962	16.962	(1.144)	88633	53.9713	54.0	
	103	1,2,4-Trichlorobenzene	180	16.983	16.984	(1.146)	272031	55.6659	55.7	
	96	1,2,3-Trimethylbenzene	105	14.889	14.889	(1.004)	882501	56.2900	56.3	
	104	Naphthalene	128	17.341	17.347	(1.170)	714588	49.0325	49.0	
	105	1,2,3-Trichlorobenzene	180	17.541	17.541	(1.183)	238134	52.9205	52.9	
	17	Methyl Acetate	43	3.352	3.353	(0.513)	176402	49.1552	49.2	
	46	Methylcyclohexane	83	7.312	7.313	(1.119)	317120	43.3660	43.4	
M	55	Total Alkylbenzenes	100				6102281	365.419	365	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-p.i\P032318.b\P4880.D
Date : 23-MAR-2018 08:35
Client ID:
Sample Info: WG225300-1,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032318.b\P4880.D
Y (x10^6)
Min
-Chloromethane (1.694)
-Vinyl chloride (1.751)
-Bromomethane (2.002)
-Chloroethane (2.102)
-Trichlorofluoromethane (2.209)
-Diethyl Ether (2.459)
-1,1-Dichloroethene (2.666)+
-Iodomethane (2.766)
-Acrolein (2.945)
-Allyl Chloride (3.067)
-Methylene Chloride (3.174)+
-trans-1,2-Dichloroethene (3.338)+
-Methyl tert-butyl ether (3.453)
-Tertiary-butyl alcohol (3.567)
-Acetonitrile (3.753)
-Di-isopropyl ether (3.889)
-Chloroprene (4.017)+
-Acrylonitrile (4.132)
-Ethyl tertiary-butyl ethe (4.375)+
-cis-1,2-Dichloroethene (4.796)
-2,2-Dichloropropane (4.954)
-Bromochloromethane (5.089)+
-Chloroform (5.240)
-Carbon Tetrachloride (5.433)
-Tetrahydrofuran (5.561)+
-1,1-Dichloropropene (5.804)+
-Benzene (6.290)
-Pentafluorobenzene (6.555)+
Propionitrile (6.419)+
-1,2-Dichloroethane (6.683)
-Isobutyl Alcohol (6.869)
-Trichloroethene (7.313)+
-1,4-Difluorobenzene (7.463)
-Dibromomethane (8.063)
-1,2-Dichloropropane (8.242)
-Bromodichloromethane (8.378)
-Methyl Methacrylate (8.714)+
-cis-1,3-dichloropropene (9.371)
-Toluene-D8 (9.650)
-Total Alkylbenzenes (9.800)
-Toluene (9.721)
-Tetrachloroethene (10.265)
-4-methyl-2-pentanone (10.372)+
-1,1,2-Trichloroethane (10.593)
-Ethyl Methacrylate (10.679)
-Dibromochloromethane (10.829)
-1,3-Dichloropropane (10.972)
-1,2-Dibromoethane (11.122)
-2-Hexanone (11.558)
-Chlorobenzene-D5 (11.873)+
-1-Chlorohexane (11.966)+
m+p-Xylenes (12.180)
-o-Xylene (12.745)
-Styrene (12.816)+
-Isopropylbenzene (13.160)
-P-Bromofluorobenzene (13.488)
-cis-1,4-Dichloro-2-Butene (13.596)+
-N-Propylbenzene (13.681)
-1,1,2,2-Tetrachloroethane (13.780)
-2-Chlorotoluene (13.839)
-trans-1,4-Dichloro-2-Bute (13.996)
-4-Chlorotoluene (14.046)
1,3,5-Trimethylbenzene (13.932)+
-1,2,4-Trimethylbenzene (14.389)
-sec-Butylbenzene (14.511)
-Tert-Butylbenzene (14.303)+
-P-Isopropyltoluene (14.696)
-1,2,3-Trimethylbenzene (14.889)
-N-Butylbenzene (15.175)
1,4-Dichlorobenzene-D4 (14.832)+
-1,2-Dichlorobenzene (15.318)
-1,2-Dibromo-3-Chloropropa (16.269)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.984)+
-Naphthalene (17.341)
-1,2,3-Trichlorobenzene (17.541)

LCS Recovery Report

Client:
Lab ID: WG225461-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: P4928.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	103.	50.0	51.7	ug/L	78-125
1,1,1-Trichloroethane	102.	50.0	50.9	ug/L	74-131
1,1,2,2-Tetrachloroethane	98.8	50.0	49.4	ug/L	71-121
Freon-113	94.4	50.0	47.2	ug/L	70-136
1,1,2-Trichloroethane	99.4	50.0	49.7	ug/L	80-120
1,1-Dichloroethane	107.	50.0	53.3	ug/L	77-125
1,1-Dichloroethene	91.6	50.0	45.8	ug/L	71-131
1,1-Dichloropropene	92.4	50.0	46.2	ug/L	79-125
1,2,3-Trichlorobenzene	92.0	50.0	46.0	ug/L	69-129
1,2,3-Trichloropropane	94.0	50.0	47.0	ug/L	73-122
1,2,4-Trichlorobenzene	90.2	50.0	45.1	ug/L	69-130
1,2,4-Trimethylbenzene	90.8	50.0	45.4	ug/L	76-124
1,2-Dibromo-3-Chloropropane	92.6	50.0	46.3	ug/L	62-128
1,2-Dichlorobenzene	101.	50.0	50.7	ug/L	80-120
1,2-Dichloroethane	96.4	50.0	48.2	ug/L	73-128
1,2-Dichloropropane	93.6	50.0	46.8	ug/L	78-122
1,3,5-Trimethylbenzene	91.2	50.0	45.6	ug/L	75-124
1,3-Dichlorobenzene	101.	50.0	50.7	ug/L	80-120
1,3-Dichloropropane	92.4	50.0	46.2	ug/L	80-120
1,4-Dichlorobenzene	96.8	50.0	48.4	ug/L	79-120
2,2-Dichloropropane	97.4	50.0	48.7	ug/L	60-139
2-Butanone	90.8	50.0	45.4	ug/L	56-143
2-Chlorotoluene	91.8	50.0	45.9	ug/L	79-122
2-Hexanone	88.2	50.0	44.1	ug/L	57-139
4-Chlorotoluene	91.0	50.0	45.5	ug/L	78-122
P-Isopropyltoluene	92.4	50.0	46.2	ug/L	77-127
4-Methyl-2-Pentanone	95.2	50.0	47.6	ug/L	67-130
Acetone	94.2	50.0	47.1	ug/L	39-160
Benzene	103.	50.0	51.4	ug/L	79-120
Bromobenzene	101.	50.0	50.4	ug/L	80-120
Bromoform	92.2	50.0	46.1	ug/L	66-130
Bromomethane	86.2	50.0	43.1	ug/L	53-141
Carbon Disulfide	107.	50.0	53.7	ug/L	64-133
Carbon Tetrachloride	104.	50.0	52.2	ug/L	72-136
Chlorobenzene	99.4	50.0	49.7	ug/L	82-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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LCS Recovery Report

Client:
Lab ID: WG225461-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: P4928.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225461

Analysis Date: 27-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	102.	50.0	51.2	ug/L	78-123
Dibromochloromethane	96.6	50.0	48.3	ug/L	74-126
Chloroethane	98.8	50.0	49.4	ug/L	60-138
Chloroform	102.	50.0	51.0	ug/L	79-124
Chloromethane	93.4	50.0	46.7	ug/L	50-139
cis-1,2-Dichloroethene	97.0	50.0	48.5	ug/L	78-123
cis-1,3-Dichloropropene	90.2	50.0	45.1	ug/L	75-124
Dibromomethane	101.	50.0	50.5	ug/L	79-123
Bromodichloromethane	110.	50.0	54.8	ug/L	79-125
Dichlorodifluoromethane	88.6	50.0	44.3	ug/L	32-152
Ethylbenzene	92.0	50.0	46.0	ug/L	79-121
1,2-Dibromoethane	91.2	50.0	45.6	ug/L	77-121
Hexachlorobutadiene	99.2	50.0	49.6	ug/L	66-134
Isopropylbenzene	95.2	50.0	47.6	ug/L	72-131
Methyl tert-butyl Ether	91.2	50.0	45.6	ug/L	71-124
Methylene Chloride	95.4	50.0	47.7	ug/L	74-124
m+p-Xylenes	90.8	100.	90.8	ug/L	80-121
Naphthalene	90.6	50.0	45.3	ug/L	61-128
N-Butylbenzene	92.6	50.0	46.3	ug/L	75-128
N-Propylbenzene	93.6	50.0	46.8	ug/L	76-126
o-Xylene	91.2	50.0	45.6	ug/L	78-122
sec-Butylbenzene	93.2	50.0	46.6	ug/L	77-126
Styrene	90.6	50.0	45.3	ug/L	78-123
tert-Butylbenzene	90.2	50.0	45.1	ug/L	78-124
Tetrachloroethene	103.	50.0	51.5	ug/L	74-129
Toluene	101.	50.0	50.6	ug/L	80-121
trans-1,2-Dichloroethene	94.2	50.0	47.1	ug/L	75-124
trans-1,3-Dichloropropene	90.6	50.0	45.3	ug/L	73-127
Trichloroethene	103.	50.0	51.7	ug/L	79-123
Trichlorofluoromethane	90.4	50.0	45.2	ug/L	65-141
Vinyl Chloride	94.4	50.0	47.2	ug/L	58-137
Dibromofluoromethane	98.4				80-120
1,2-Dichloroethane-d4	98.1				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	102.				85-120

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Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4928.D
Report Date: 28-Mar-2018 08:52

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032718.b\P4928.D
Lab Smp Id: WG225461-1 Client Smp ID: WG225398-LCS
Inj Date : 27-MAR-2018 09:20 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225461-1,SL2295
Misc Info : WG225461,WG225349-4,SL2295-21
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032718.b\P8A05(63)D.m
Meth Date : 28-Mar-2018 07:02 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

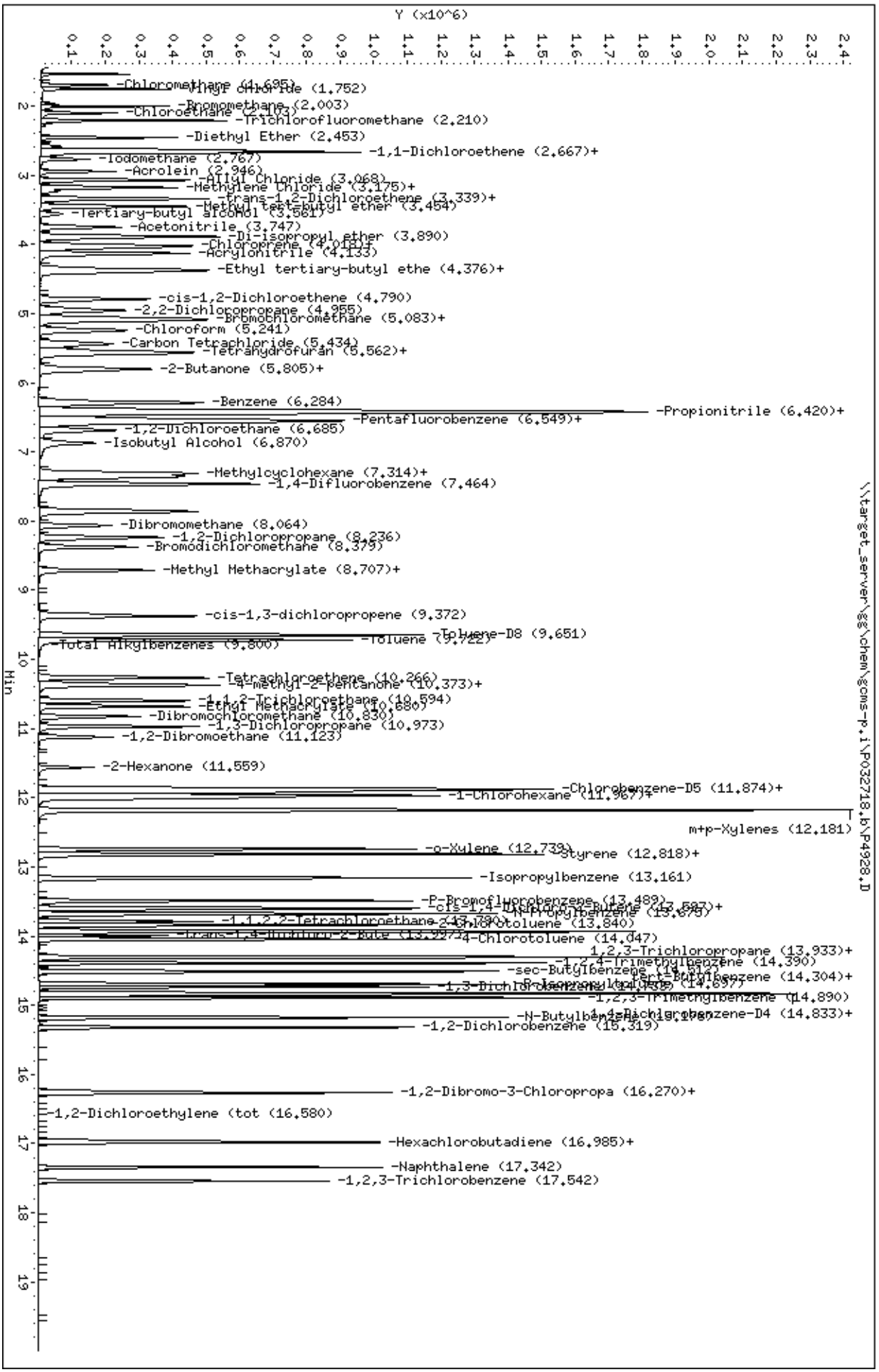
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.537	1.537	(0.235)	166691	44.2649	44.3	
2	Chloromethane	50	1.695	1.694	(0.259)	259216	46.7379	46.7	
3	Vinyl chloride	62	1.752	1.751	(0.268)	270396	47.2210	47.2	
4	Bromomethane	94	2.002	2.001	(0.306)	135792	43.0849	43.1	
5	Chloroethane	64	2.095	2.095	(0.321)	184091	49.3545	49.4	
6	Trichlorofluoromethane	101	2.209	2.209	(0.338)	382734	45.2408	45.2	
7	Diethyl Ether	59	2.452	2.459	(0.375)	209365	50.3797	50.4	
8	1,1-Dichloroethene	96	2.631	2.631	(0.403)	173974	45.8296	45.8	
9	Freon-113	151	2.660	2.659	(0.407)	152264	47.2147	47.2	
10	Carbon Disulfide	76	2.667	2.666	(0.408)	678771	53.7312	53.7	
11	Iodomethane	142	2.767	2.766	(0.424)	172893	58.0716	58.1	
12	Acrolein	56	2.946	2.945	(0.451)	200722	236.621	237	
13	Allyl Chloride	41	3.067	3.067	(0.469)	300998	51.1631	51.2	
14	Methylene Chloride	84	3.174	3.174	(0.486)	205851	47.6876	47.7	
15	Acetone	43	3.232	3.238	(0.495)	65397	47.0667	47.1	
16	trans-1,2-Dichloroethene	96	3.339	3.338	(0.511)	188455	47.1467	47.1	
17	Methyl Acetate	43	3.353	3.360	(0.513)	175956	44.3718	44.4	
18	Methyl tert-butyl ether	73	3.453	3.453	(0.529)	531820	45.6573	45.6	
19	Tertiary-butyl alcohol	59	3.568	3.567	(0.546)	82056	220.790	221	
20	Acetonitrile	41	3.746	3.753	(0.573)	333182	481.650	482	
21	Di-isopropyl ether	45	3.889	3.889	(0.595)	638174	47.3072	47.3	
22	Chloroprene	53	4.011	4.017	(0.614)	307396	47.4717	47.5	
23	1,1-Dichloroethane	63	4.046	4.053	(0.619)	375330	53.2860	53.3	

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4928.D
Report Date: 28-Mar-2018 08:52

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	4.132	4.131	(0.632)	391655	250.978	251	
	25	Ethyl tertiary-butyl ether	59	4.368	4.368	(0.669)	563305	47.7437	47.7	
	26	Vinyl Acetate	43	4.390	4.396	(0.588)	529612	53.6773	53.7	
	27	cis-1,2-Dichloroethene	96	4.790	4.797	(0.733)	208063	48.4990	48.5	
	28	2,2-Dichloropropane	77	4.954	4.961	(0.758)	279088	48.7337	48.7	
	29	Bromochloromethane	128	5.104	5.104	(0.781)	90123	51.2015	51.2	
	30	Cyclohexane	56	5.076	5.082	(0.777)	310274	44.4792	44.5	
	31	Chloroform	83	5.240	5.247	(0.802)	349031	50.9916	51.0	
	32	Carbon Tetrachloride	117	5.440	5.440	(0.729)	253077	52.1778	52.2	
	33	Tetrahydrofuran	42	5.497	5.504	(0.841)	64211	50.0763	50.1	
$	34	Dibromofluoromethane	113	5.562	5.561	(0.851)	232004	49.2274	49.2	
	35	1,1,1-Trichloroethane	97	5.569	5.576	(0.852)	298208	50.8995	50.9	
	36	2-Butanone	43	5.826	5.826	(0.892)	95847	45.4358	45.4	
	37	1,1-Dichloropropene	75	5.805	5.812	(0.778)	267784	46.2050	46.2	
	38	Benzene	78	6.284	6.290	(0.842)	801247	51.3883	51.4	
	39	Propionitrile	54	6.398	6.398	(0.979)	365486	485.457	485	
	40	Methacrylonitrile	41	6.420	6.426	(0.982)	1536946	457.628	458	
*	41	Pentafluorobenzene	168	6.534	6.541	(1.000)	485216	50.0000		
$	42	1,2-Dichloroethane-D4	65	6.555	6.569	(1.003)	326603	49.0399	49.0	
	43	Tertiary-amyl methyl ether	73	6.563	6.569	(1.004)	510967	51.5858	51.6	
	44	1,2-Dichloroethane	62	6.684	6.691	(0.896)	296712	48.1777	48.2	
	45	Isobutyl Alcohol	43	6.870	6.877	(1.051)	176341	980.607	981	
	46	Methylcyclohexane	83	7.313	7.313	(1.119)	314123	47.7298	47.7	
	47	Trichloroethene	95	7.363	7.363	(0.987)	193957	51.7080	51.7	
*	48	1,4-Difluorobenzene	114	7.463	7.470	(1.000)	793407	50.0000		
	49	Dibromomethane	93	8.064	8.070	(1.080)	119739	50.4866	50.5	
	50	1,2-Dichloropropane	63	8.235	8.242	(1.103)	204876	46.8491	46.8	
	51	Bromodichloromethane	83	8.378	8.385	(1.123)	278894	54.8088	54.8	
	52	Methyl Methacrylate	41	8.707	8.714	(1.167)	192462	44.7569	44.8	
	53	Ethyl Methacrylate	69	10.680	10.686	(1.431)	279567	43.9944	44.0	
	54	1,4-Dioxane	88	8.714	8.721	(1.168)	50188	967.496	967	
M	55	Total Alkylbenzenes	100				6232600	321.983	322	
	57	cis-1,3-dichloropropene	75	9.379	9.378	(1.257)	351076	45.0965	45.1	
$	58	Toluene-D8	98	9.650	9.650	(1.293)	985938	50.3774	50.4	
	59	Toluene	92	9.722	9.729	(1.303)	515934	50.6133	50.6	
	60	Tetrachloroethene	164	10.265	10.272	(0.865)	150686	51.4930	51.5	
	61	4-methyl-2-pentanone	43	10.351	10.351	(1.387)	199738	47.6459	47.6	
	62	trans-1,3-Dichloropropene	75	10.372	10.379	(1.390)	330802	45.3078	45.3	
	63	1,1,2-Trichloroethane	83	10.594	10.601	(1.419)	156412	49.7216	49.7	
	64	Dibromochloromethane	129	10.830	10.829	(0.913)	204555	48.2995	48.3	
	65	1,3-Dichloropropane	76	10.973	10.972	(0.925)	361921	46.1910	46.2	
	66	1,2-Dibromoethane	107	11.123	11.130	(1.490)	186733	45.5903	45.6	
	67	2-Hexanone	43	11.559	11.559	(0.974)	126979	44.1299	44.1	
*	68	Chlorobenzene-D5	117	11.866	11.873	(1.000)	791357	50.0000		
	69	Chlorobenzene	112	11.888	11.894	(1.002)	581205	49.7231	49.7	
	70	1-Chlorohexane	91	11.924	11.923	(1.005)	297234	46.6873	46.7	
	71	Ethylbenzene	106	11.966	11.973	(1.008)	312948	46.0264	46.0	
	72	1,1,1,2-Tetrachloroethane	131	12.002	12.009	(1.011)	205110	51.7436	51.7	
	73	m+p-Xylenes	106	12.181	12.180	(1.027)	789579	90.8263	90.8	
	74	o-Xylene	106	12.738	12.745	(1.073)	363699	45.5815	45.6	
	75	Styrene	104	12.817	12.824	(1.080)	649408	45.3291	45.3	
	76	Bromoform	173	12.817	12.824	(1.080)	139240	46.1007	46.1	
	77	Isopropylbenzene	105	13.160	13.167	(0.888)	948383	47.6248	47.6	
$	78	P-Bromofluorobenzene	95	13.489	13.496	(1.807)	394920	50.9787	51.0	

Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4928.D
Report Date: 28-Mar-2018 08:52

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	79	cis-1,4-Dichloro-2-Butene	53	13.610	13.610	(0.918)	106813	45.9351	45.9	
	80	Bromobenzene	156	13.596	13.603	(0.917)	236127	50.3510	50.4	
	81	N-Propylbenzene	91	13.675	13.681	(0.922)	1183349	46.7660	46.8	
	82	1,1,2,2-Tetrachloroethane	83	13.789	13.789	(0.930)	278933	49.4133	49.4	
	83	2-Chlorotoluene	91	13.839	13.846	(0.933)	687859	45.8768	45.9	
	84	1,2,3-Trichloropropane	75	13.925	13.925	(0.939)	241936	46.9543	47.0	
	85	1,3,5-Trimethylbenzene	105	13.932	13.939	(0.940)	807708	45.5678	45.6	
	86	trans-1,4-Dichloro-2-Butene	53	13.996	13.996	(0.944)	80954	45.9788	46.0	
	87	4-Chlorotoluene	91	14.046	14.046	(0.947)	737971	45.5385	45.5	
	88	tert-Butylbenzene	119	14.304	14.303	(0.965)	793610	45.1415	45.1	
	89	Pentachloroethane	165	14.311	14.311	(0.965)	115857	51.5840	51.6	
	90	1,2,4-Trimethylbenzene	105	14.390	14.396	(0.971)	833708	45.4456	45.4	
	91	sec-Butylbenzene	105	14.511	14.518	(0.979)	1004393	46.5703	46.6	
	92	P-Isopropyltoluene	119	14.697	14.697	(0.991)	839427	46.2052	46.2	
	93	1,3-Dichlorobenzene	146	14.733	14.739	(0.994)	464720	50.6921	50.7	
*	94	1,4-Dichlorobenzene-D4	152	14.826	14.832	(1.000)	429221	50.0000		
	95	1,4-Dichlorobenzene	146	14.840	14.847	(1.001)	486429	48.4427	48.4	
	96	1,2,3-Trimethylbenzene	105	14.890	14.897	(1.004)	917067	47.2780	47.3	
	97	N-Butylbenzene	91	15.176	15.183	(1.024)	770405	46.2870	46.3	
M	98	1,2-Dichloroethylene (total)	96				396518	95.6457	95.6	
	99	1,2-Dichlorobenzene	146	15.319	15.326	(1.033)	444793	50.7491	50.7	
	100	1,2-Dibromo-3-Chloropropane	75	16.234	16.239	(1.095)	49724	46.2852	46.3	
	101	1,3,5-Trichlorobenzene	180	16.270	16.268	(1.097)	311232	47.3163	47.3	
	102	Hexachlorobutadiene	225	16.963	16.969	(1.144)	88032	49.5710	49.6	
	103	1,2,4-Trichlorobenzene	180	16.984	16.991	(1.146)	268557	45.1220	45.1	
	104	Naphthalene	128	17.342	17.347	(1.170)	707736	45.3207	45.3	
	105	1,2,3-Trichlorobenzene	180	17.542	17.549	(1.183)	235455	46.0054	46.0	
M	106	Xylenes (total)	106				1153278	136.408	136	


Data File: \\target_server\gg\chem\gcms-p.i\P032718.b\P4928.D
Date : 27-MAR-2018 09:20
Client ID: WG225398-LCS
Sample Info: WG225461-1,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
\\target_server\gg\chem\gcms-p.i\P032718.b\P4928.D
Y (x10^6)
Min
-Chloromethane (1.695)
-Vinyl Chloride (1.752)
-Bromomethane (2.003)
-Chloroethane (2.107)
-Trichlorofluoromethane (2.210)
-Diethyl Ether (2.453)
-1,1-Dichloroethene (2.667)+
-Iodomethane (2.767)
-Acrolein (2.946)
-Allyl Chloride (3.068)
-Methylene Chloride (3.175)+
-trans-1,2-Dichloroethene (3.339)+
-Methyl tert-butyl ether (3.454)
-Tertiary-butyl alcohol (3.561)
-Acetonitrile (3.747)
-Di-isopropyl ether (3.890)
-Chloroprene (4.018)+
-Acrylonitrile (4.133)
-Ethyl tertiary-butyl ethe (4.376)+
-cis-1,2-Dichloroethene (4.790)
-2,2-Dichloropropane (4.955)
-Bromochloromethane (5.083)+
-Chloroform (5.241)
-Carbon Tetrachloride (5.434)
-Tetrahydrofuran (5.562)+
-2-Butanone (5.805)+
-Benzene (6.284)
-Propionitrile (6.420)+
-Pentafluorobenzene (6.549)+
-1,2-Dichloroethane (6.685)
-Isobutyl Alcohol (6.870)
-Methylcyclohexane (7.314)+
-1,4-Difluorobenzene (7.464)
-Dibromomethane (8.064)
-1,2-Dichloropropane (8.236)
-Bromodichloromethane (8.379)
-Methyl Methacrylate (8.707)+
-cis-1,3-dichloropropene (9.372)
-Toluene-D8 (9.651)
-Toluene (9.722)
-Total Alkylbenzenes (9.800)
-Tetrachloroethene (10.266)
-4-methyl-2-pentanone (10.373)+
-1,1,2-Trichloroethane (10.594)
-Ethyl Methacrylate (10.680)
-Dibromochloromethane (10.830)
-1,3-Dichloropropane (10.973)
-1,2-Dibromoethane (11.123)
-2-Hexanone (11.559)
-Chlorobenzene-D5 (11.874)+
-1-Chlorohexane (11.967)+
m+p-Xylenes (12.181)
-o-Xylene (12.739)
-Styrene (12.818)+
-Isopropylbenzene (13.161)
-P-Bromofluorobenzene (13.489)
-cis-1,4-Dichloro-2-Butene (13.597)+
-N-Propylbenzene (13.679)
-1,1,2,2-Tetrachloroethane (13.780)
-3-Chlorotoluene (13.840)
-trans-1,4-Dichloro-2-Bute (13.997)+
-4-Chlorotoluene (14.047)
-1,2,3-Trichloropropane (13.933)+
-1,2,4-Trimethylbenzene (14.390)
-sec-Butylbenzene (14.414)
-4-Isopropyltoluene (14.457)
-1,3-Dichlorobenzene (14.488)
-1,2,3-Trimethylbenzene (14.890)
-N-Butylbenzene (14.926)
-1,4-Dichlorobenzene-D4 (14.833)+
-1,2-Dichlorobenzene (15.319)
-1,2-Dibromo-3-Chloropropa (16.270)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.985)+
-Naphthalene (17.342)
-1,2,3-Trichlorobenzene (17.542)

LCS Recovery Report

Client:
Lab ID: WG225530-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: P4966.D

Sample Date:
Received Date:
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	103.	50.0	51.6	ug/L	78-125
1,1,1-Trichloroethane	104.	50.0	51.8	ug/L	74-131
1,1,2,2-Tetrachloroethane	98.2	50.0	49.1	ug/L	71-121
Freon-113	92.4	50.0	46.2	ug/L	70-136
1,1,2-Trichloroethane	104.	50.0	51.9	ug/L	80-120
1,1-Dichloroethane	108.	50.0	54.2	ug/L	77-125
1,1-Dichloroethene	96.6	50.0	48.3	ug/L	71-131
1,1-Dichloropropene	96.8	50.0	48.4	ug/L	79-125
1,2,3-Trichlorobenzene	96.0	50.0	48.0	ug/L	69-129
1,2,3-Trichloropropane	93.8	50.0	46.9	ug/L	73-122
1,2,4-Trichlorobenzene	92.6	50.0	46.3	ug/L	69-130
1,2,4-Trimethylbenzene	92.6	50.0	46.3	ug/L	76-124
1,2-Dibromo-3-Chloropropane	89.4	50.0	44.7	ug/L	62-128
1,2-Dichlorobenzene	104.	50.0	52.2	ug/L	80-120
1,2-Dichloroethane	99.0	50.0	49.5	ug/L	73-128
1,2-Dichloropropane	95.0	50.0	47.5	ug/L	78-122
1,3,5-Trimethylbenzene	93.0	50.0	46.5	ug/L	75-124
1,3-Dichlorobenzene	105.	50.0	52.4	ug/L	80-120
1,3-Dichloropropane	94.0	50.0	47.0	ug/L	80-120
1,4-Dichlorobenzene	98.0	50.0	49.0	ug/L	79-120
2,2-Dichloropropane	96.4	50.0	48.2	ug/L	60-139
2-Butanone	90.6	50.0	45.3	ug/L	56-143
2-Chlorotoluene	94.0	50.0	47.0	ug/L	79-122
2-Hexanone	86.2	50.0	43.1	ug/L	57-139
4-Chlorotoluene	93.6	50.0	46.8	ug/L	78-122
P-Isopropyltoluene	94.0	50.0	47.0	ug/L	77-127
4-Methyl-2-Pentanone	94.4	50.0	47.2	ug/L	67-130
Acetone	94.6	50.0	47.3	ug/L	39-160
Benzene	104.	50.0	52.2	ug/L	79-120
Bromobenzene	103.	50.0	51.4	ug/L	80-120
Bromoform	89.2	50.0	44.6	ug/L	66-130
Bromomethane	85.6	50.0	42.8	ug/L	53-141
Carbon Disulfide	108.	50.0	54.2	ug/L	64-133
Carbon Tetrachloride	104.	50.0	52.1	ug/L	72-136
Chlorobenzene	100.	50.0	50.2	ug/L	82-120

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LCS Recovery Report

Client:
Lab ID: WG225530-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: P4966.D

Sample Date:
Received Date:
Extract Date: 28-MAR-18
Extracted By: hg
Extraction Method: SW846 5030
Lab Prep Batch: WG225530

Analysis Date: 28-MAR-18
Analyst: hg
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	106.	50.0	53.2	ug/L	78-123
Dibromochloromethane	97.0	50.0	48.5	ug/L	74-126
Chloroethane	98.6	50.0	49.3	ug/L	60-138
Chloroform	105.	50.0	52.3	ug/L	79-124
Chloromethane	96.8	50.0	48.4	ug/L	50-139
cis-1,2-Dichloroethene	97.6	50.0	48.8	ug/L	78-123
cis-1,3-Dichloropropene	91.4	50.0	45.7	ug/L	75-124
Dibromomethane	107.	50.0	53.7	ug/L	79-123
Bromodichloromethane	112.	50.0	55.8	ug/L	79-125
Dichlorodifluoromethane	88.0	50.0	44.0	ug/L	32-152
Ethylbenzene	91.2	50.0	45.6	ug/L	79-121
1,2-Dibromoethane	94.0	50.0	47.0	ug/L	77-121
Hexachlorobutadiene	98.0	50.0	49.0	ug/L	66-134
Isopropylbenzene	97.0	50.0	48.5	ug/L	72-131
Methyl tert-butyl Ether	93.2	50.0	46.6	ug/L	71-124
Methylene Chloride	97.8	50.0	48.9	ug/L	74-124
m+p-Xylenes	91.6	100.	91.6	ug/L	80-121
Naphthalene	89.4	50.0	44.7	ug/L	61-128
N-Butylbenzene	94.2	50.0	47.1	ug/L	75-128
N-Propylbenzene	94.6	50.0	47.3	ug/L	76-126
o-Xylene	92.8	50.0	46.4	ug/L	78-122
sec-Butylbenzene	94.0	50.0	47.0	ug/L	77-126
Styrene	90.0	50.0	45.0	ug/L	78-123
tert-Butylbenzene	91.0	50.0	45.5	ug/L	78-124
Tetrachloroethene	106.	50.0	52.9	ug/L	74-129
Toluene	104.	50.0	51.8	ug/L	80-121
trans-1,2-Dichloroethene	96.0	50.0	48.0	ug/L	75-124
trans-1,3-Dichloropropene	92.8	50.0	46.4	ug/L	73-127
Trichloroethene	105.	50.0	52.5	ug/L	79-123
Trichlorofluoromethane	92.4	50.0	46.2	ug/L	65-141
Vinyl Chloride	94.4	50.0	47.2	ug/L	58-137
Dibromofluoromethane	100.				80-120
1,2-Dichloroethane-d4	100.				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	105.				85-120

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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4966.D
Report Date: 04-Apr-2018 05:25

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-p.i\P032818B.b\P4966.D
Lab Smp Id: WG225530-1
Inj Date : 28-MAR-2018 09:51 MS Autotune Date: 24-JAN-2018 13:57
Operator : hg Inst ID: gcms-p.i
Smp Info : WG225530-1,SL2295
Misc Info : WG225530,WG225349-4,SL2295-1
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-p.i\P032818B.b\P8A05(63)D.m
Meth Date : 04-Apr-2018 05:23 gcms-p.i Quant Type: ISTD
Cal Date : 24-MAR-2018 10:44 Cal File: P4908.D
Als bottle: 2 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.538	1.537	(0.235)	164462	44.0310	44.0	
2	Chloromethane	50	1.688	1.694	(0.258)	266205	48.3915	48.4	
3	Vinyl chloride	62	1.752	1.751	(0.268)	268119	47.2071	47.2	
4	Bromomethane	94	2.003	2.001	(0.307)	133823	42.8083	42.8	
5	Chloroethane	64	2.103	2.095	(0.322)	182496	49.3280	49.3	
6	Trichlorofluoromethane	101	2.210	2.209	(0.338)	387909	46.2284	46.2	
7	Diethyl Ether	59	2.453	2.459	(0.375)	208504	50.5838	50.6	
19	Tertiary-butyl alcohol	59	3.554	3.567	(0.544)	73072	199.403	199	
8	1,1-Dichloroethene	96	2.632	2.631	(0.403)	181787	48.2803	48.3	
10	Carbon Disulfide	76	2.667	2.666	(0.408)	678988	54.1890	54.2	
9	Freon-113	151	2.660	2.659	(0.407)	147915	46.2421	46.2	
11	Iodomethane	142	2.767	2.766	(0.424)	189940	64.3203	64.3	
12	Acrolein	56	2.946	2.945	(0.451)	190943	226.938	227	
14	Methylene Chloride	84	3.175	3.174	(0.486)	209317	48.8880	48.9	
15	Acetone	43	3.232	3.238	(0.495)	65174	47.2907	47.3	
45	Isobutyl Alcohol	43	6.870	6.877	(1.051)	150000	852.813	853	
16	trans-1,2-Dichloroethene	96	3.339	3.338	(0.511)	190501	48.0444	48.0	
13	Allyl Chloride	41	3.068	3.067	(0.470)	305214	52.3050	52.3	
18	Methyl tert-butyl ether	73	3.454	3.453	(0.529)	538205	46.5595	46.6	
20	Acetonitrile	41	3.747	3.753	(0.573)	306675	446.965	447	
21	Di-isopropyl ether	45	3.890	3.889	(0.595)	651059	48.6244	48.6	
22	Chloroprene	53	4.018	4.017	(0.615)	303706	47.2917	47.3	
39	Propionitrile	54	6.392	6.398	(0.978)	338995	453.961	454	
40	Methacrylonitrile	41	6.420	6.426	(0.982)	1497394	449.794	450	

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Report Date: 04-Apr-2018 05:25

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	4.047	4.053	(0.619)	378356	54.1559	54.2	
	24	Acrylonitrile	52	4.133	4.131	(0.632)	369619	238.798	239	
	25	Ethyl tertiary-butyl ether	59	4.369	4.368	(0.669)	555267	47.4578	47.4	
	26	Vinyl Acetate	43	4.397	4.396	(0.589)	538803	54.6622	54.7	
	27	cis-1,2-Dichloroethene	96	4.798	4.797	(0.734)	207810	48.8307	48.8	
M	98	1,2-Dichloroethylene (total)	96				398311	96.8751	96.9	
	52	Methyl Methacrylate	41	8.707	8.714	(1.167)	188191	43.8909	43.9	
	28	2,2-Dichloropropane	77	4.955	4.961	(0.758)	274046	48.2528	48.2	
	29	Bromochloromethane	128	5.098	5.104	(0.780)	92813	53.2056	53.2	
	31	Chloroform	83	5.241	5.247	(0.802)	354981	52.2859	52.3	
	32	Carbon Tetrachloride	117	5.441	5.440	(0.729)	252355	52.0960	52.1	
	33	Tetrahydrofuran	42	5.505	5.504	(0.842)	62530	49.3434	49.3	
$	34	Dibromofluoromethane	113	5.562	5.561	(0.851)	233957	50.0487	50.0	
	35	1,1,1-Trichloroethane	97	5.569	5.576	(0.852)	300968	51.7916	51.8	
	37	1,1-Dichloropropene	75	5.805	5.812	(0.778)	280323	48.3645	48.4	
	36	2-Butanone	43	5.820	5.826	(0.891)	94781	45.3143	45.3	
	38	Benzene	78	6.291	6.290	(0.843)	812265	52.1621	52.2	
*	41	Pentafluorobenzene	168	6.534	6.541	(1.000)	481271	50.0000		
	30	Cyclohexane	56	5.076	5.082	(0.777)	315282	45.5306	45.5	
	53	Ethyl Methacrylate	69	10.680	10.686	(1.431)	272438	43.0070	43.0	
$	42	1,2-Dichloroethane-D4	65	6.563	6.569	(1.004)	330566	50.0418	50.0	
	43	Tertiary-amyl methyl ether	73	6.570	6.569	(1.005)	508614	51.7691	51.8	
	44	1,2-Dichloroethane	62	6.685	6.691	(0.896)	304726	49.5428	49.5	
	47	Trichloroethene	95	7.364	7.363	(0.987)	196560	52.4695	52.5	
*	48	1,4-Difluorobenzene	114	7.464	7.470	(1.000)	792385	50.0000		
	49	Dibromomethane	93	8.064	8.070	(1.080)	127193	53.6986	53.7	
	50	1,2-Dichloropropane	63	8.236	8.242	(1.103)	207708	47.5409	47.5	
	51	Bromodichloromethane	83	8.379	8.385	(1.123)	283424	55.7709	55.8	
	57	cis-1,3-dichloropropene	75	9.379	9.378	(1.257)	355872	45.7447	45.7	
	54	1,4-Dioxane	88	8.715	8.721	(1.168)	42305	816.584	816	
$	58	Toluene-D8	98	9.644	9.650	(1.292)	988721	50.5848	50.6	
	59	Toluene	92	9.722	9.729	(1.303)	526911	51.7568	51.8	
	61	4-methyl-2-pentanone	43	10.352	10.351	(1.387)	197291	47.2561	47.2	
	60	Tetrachloroethene	164	10.266	10.272	(0.865)	157169	52.8995	52.9	
	62	trans-1,3-Dichloropropene	75	10.373	10.379	(1.390)	338415	46.3617	46.4	
	63	1,1,2-Trichloroethane	83	10.595	10.601	(1.419)	163128	51.9235	51.9	
	64	Dibromochloromethane	129	10.823	10.829	(0.912)	208543	48.4950	48.5	
	65	1,3-Dichloropropane	76	10.966	10.972	(0.924)	373608	46.9583	47.0	
	66	1,2-Dibromoethane	107	11.123	11.130	(1.490)	192283	46.9647	47.0	
	67	2-Hexanone	43	11.560	11.559	(0.974)	124810	43.0741	43.1	
*	68	Chlorobenzene-D5	117	11.867	11.873	(1.000)	803458	50.0000		
	69	Chlorobenzene	112	11.888	11.894	(1.002)	595176	50.1514	50.2	
	70	1-Chlorohexane	91	11.924	11.923	(1.005)	305102	47.1984	47.2	
	71	Ethylbenzene	106	11.967	11.973	(1.008)	314947	45.6317	45.6	
	72	1,1,1,2-Tetrachloroethane	131	12.003	12.009	(1.011)	207780	51.6277	51.6	
M	106	Xylenes (total)	106				1184802	137.989	138	
	73	m+p-Xylenes	106	12.181	12.180	(1.027)	808874	91.6184	91.6	
	74	o-Xylene	106	12.739	12.745	(1.073)	375928	46.3709	46.4	
	75	Styrene	104	12.818	12.824	(1.080)	654814	45.0335	45.0	
	76	Bromoform	173	12.818	12.824	(1.080)	136652	44.6346	44.6	
	77	Isopropylbenzene	105	13.161	13.167	(0.888)	969887	48.5338	48.5	
$	78	P-Bromofluorobenzene	95	13.489	13.496	(1.807)	406143	52.4951	52.5	
	79	cis-1,4-Dichloro-2-Butene	53	13.604	13.610	(0.918)	102919	44.1962	44.2	
	86	trans-1,4-Dichloro-2-Butene	53	13.997	13.996	(0.944)	77791	44.0593	44.0	

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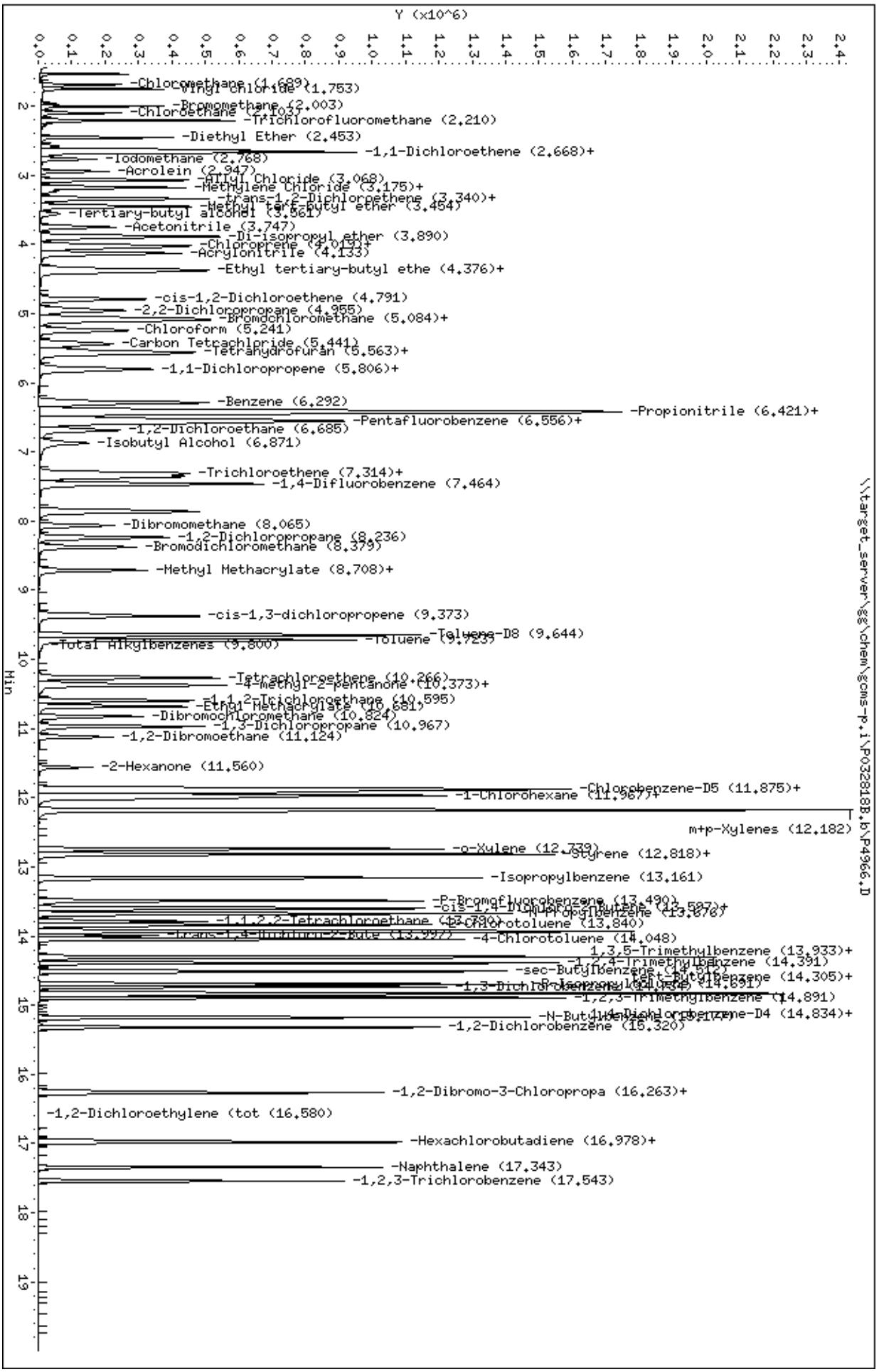
Report Date: 04-Apr-2018 05:25

			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	13.597	13.603	(0.917)	241846	51.4192	51.4	
	81	N-Propylbenzene	91	13.675	13.681	(0.922)	1201377	47.3328	47.3	
	82	1,1,2,2-Tetrachloroethane	83	13.783	13.789	(0.930)	278021	49.1072	49.1	
	85	1,3,5-Trimethylbenzene	105	13.933	13.939	(0.940)	827527	46.5177	46.5	
	83	2-Chlorotoluene	91	13.840	13.846	(0.933)	707333	47.0119	47.0	
	84	1,2,3-Trichloropropane	75	13.926	13.925	(0.939)	242319	46.8907	46.9	
	87	4-Chlorotoluene	91	14.047	14.046	(0.947)	761739	46.8399	46.8	
	88	tert-Butylbenzene	119	14.304	14.303	(0.965)	802144	45.4798	45.5	
	89	Pentachloroethane	165	14.311	14.311	(0.965)	110684	49.1362	49.1	
	90	1,2,4-Trimethylbenzene	105	14.390	14.396	(0.971)	852760	46.3226	46.3	
	92	P-Isopropyltoluene	119	14.690	14.697	(0.991)	856567	46.9811	47.0	
	93	1,3-Dichlorobenzene	146	14.733	14.739	(0.994)	481549	52.3738	52.4	
*	94	1,4-Dichlorobenzene-D4	152	14.826	14.832	(1.000)	430484	50.0000		
	95	1,4-Dichlorobenzene	146	14.840	14.847	(1.001)	493621	49.0147	49.0	
	97	N-Butylbenzene	91	15.176	15.183	(1.024)	787207	47.1283	47.1	
	91	sec-Butylbenzene	105	14.512	14.518	(0.979)	1015935	46.9583	47.0	
	99	1,2-Dichlorobenzene	146	15.319	15.326	(1.033)	459336	52.2546	52.2	
	100	1,2-Dibromo-3-Chloropropane	75	16.241	16.239	(1.095)	48102	44.7026	44.7	
	101	1,3,5-Trichlorobenzene	180	16.270	16.268	(1.097)	310148	47.0175	47.0	
	102	Hexachlorobutadiene	225	16.963	16.969	(1.144)	87248	48.9854	49.0	
	103	1,2,4-Trichlorobenzene	180	16.985	16.991	(1.146)	276915	46.3495	46.3	
	96	1,2,3-Trimethylbenzene	105	14.890	14.897	(1.004)	905215	46.5443	46.5	
	104	Naphthalene	128	17.342	17.347	(1.170)	700482	44.7484	44.7	
	105	1,2,3-Trichlorobenzene	180	17.542	17.549	(1.183)	246578	48.0161	48.0	
	17	Methyl Acetate	43	3.354	3.360	(0.513)	168122	42.7438	42.7	
	46	Methylcyclohexane	83	7.306	7.313	(1.118)	305303	46.8017	46.8	
M	55	Total Alkylbenzenes	100				6343517	326.721	327	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Data File: \\target_server\gg\chem\gcms-p.i\P032818B.b\P4966.D
Date : 28-MAR-2018 09:51
Client ID:
Sample Info: WG225530-1,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-p.i
Operator: hg
Column diameter: 0.18
-Chloromethane (1.689)
-Vinyl Chloride (1.753)
-Bromomethane (2.003)
-Chloroethane (2.107)
-Trichlorofluoromethane (2.210)
-Diethyl Ether (2.453)
-1,1-Dichloroethene (2.668)+
-Iodomethane (2.768)
-Acrolein (2.947)
-Allyl Chloride (3.068)
-Methylene Chloride (3.175)+
-trans-1,2-Dichloroethene (3.340)+
-Methyl tert-butyl ether (3.454)
-Tertiary-butyl alcohol (3.561)
-Acetonitrile (3.747)
-Di-isopropyl ether (3.890)
-Chloroprene (4.019)+
-Acrylonitrile (4.133)
-Ethyl tertiary-butyl ethe (4.376)+
-cis-1,2-Dichloroethene (4.791)
-2,2-Dichloropropane (4.955)
-Bromochloromethane (5.084)+
-Chloroform (5.241)
-Carbon Tetrachloride (5.441)
-Tetrahydrofuran (5.563)+
-1,1-Dichloropropene (5.806)+
-Benzene (6.292)
-Propionitrile (6.421)+
-Pentafluorobenzene (6.556)+
-1,2-Dichloroethane (6.685)
-Isobutyl Alcohol (6.871)
-Trichloroethene (7.314)+
-1,4-Difluorobenzene (7.464)
-Dibromomethane (8.065)
-1,2-Dichloropropane (8.236)
-Bromodichloromethane (8.379)
-Methyl Methacrylate (8.708)+
-cis-1,3-dichloropropene (9.373)
-Toluene-D8 (9.644)
-Total Alkylbenzenes (9.800)
-Toluene (9.723)
-Tetrachloroethene (10.266)
-4-methyl-2-pentanone (10.373)+
-1,1,2-Trichloroethane (10.595)
-Ethyl Methacrylate (10.681)
-Dibromochloromethane (10.824)
-1,3-Dichloropropane (10.967)
-1,2-Dibromoethane (11.124)
-2-Hexanone (11.560)
-Chlorobenzene-D5 (11.875)+
-1-Chlorohexane (11.967)+
m+p-Xylenes (12.182)
-o-Xylene (12.779)
-Styrene (12.818)+
-Isopropylbenzene (13.161)
-P-Bromofluorobenzene (13.490)
-cis-1,4-Dichloro-2-butene (13.587)+
-n-Propylbenzene (13.676)
-1,1,2,2-Tetrachloroethane (13.730)
-2-Chlorotoluene (13.840)
-trans-1,4-Dichloro-2-bute (13.997)
-4-Chlorotoluene (14.048)
1,3,5-Trimethylbenzene (13.933)+
-1,2,4-Trimethylbenzene (14.391)
-sec-Butylbenzene (14.516)
-tert-Butylbenzene (14.305)+
-1,3-Dichlorobenzene (14.434)
-p-Isopropyltoluene (14.691)
-1,2,3-Trimethylbenzene (14.891)
-N-Butylbenzene (15.172)
-1,4-Dichlorobenzene-D4 (14.834)+
-1,2-Dichlorobenzene (15.320)
-1,2-Dibromo-3-Chloropropa (16.263)+
-1,2-Dichloroethylene (tot (16.580)
-Hexachlorobutadiene (16.978)+
-Naphthalene (17.343)
-1,2,3-Trichlorobenzene (17.543)

LCS Recovery Report

Client:
Lab ID: WG225399-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: T4715.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	110.	50.0	55.2	ug/L	78-125
1,1,1-Trichloroethane	109.	50.0	54.6	ug/L	74-131
1,1,2,2-Tetrachloroethane	104.	50.0	52.2	ug/L	71-121
Freon-113	108.	50.0	54.2	ug/L	70-136
1,1,2-Trichloroethane	106.	50.0	53.2	ug/L	80-120
1,1-Dichloroethane	112.	50.0	55.8	ug/L	77-125
1,1-Dichloroethene	102.	50.0	51.0	ug/L	71-131
1,1-Dichloropropene	109.	50.0	54.5	ug/L	79-125
1,2,3-Trichlorobenzene	99.4	50.0	49.7	ug/L	69-129
1,2,3-Trichloropropane	102.	50.0	51.0	ug/L	73-122
1,2,4-Trichlorobenzene	100.	50.0	50.1	ug/L	69-130
1,2,4-Trimethylbenzene	105.	50.0	52.6	ug/L	76-124
1,2-Dibromo-3-Chloropropane	106.	50.0	53.0	ug/L	62-128
1,2-Dichlorobenzene	109.	50.0	54.4	ug/L	80-120
1,2-Dichloroethane	105.	50.0	52.5	ug/L	73-128
1,2-Dichloropropane	107.	50.0	53.4	ug/L	78-122
1,3,5-Trimethylbenzene	106.	50.0	53.0	ug/L	75-124
1,3-Dichlorobenzene	108.	50.0	54.0	ug/L	80-120
1,3-Dichloropropane	105.	50.0	52.7	ug/L	80-120
1,4-Dichlorobenzene	102.	50.0	51.2	ug/L	79-120
2,2-Dichloropropane	121.	50.0	60.6	ug/L	60-139
2-Butanone	105.	50.0	52.7	ug/L	56-143
2-Chlorotoluene	111.	50.0	55.7	ug/L	79-122
2-Hexanone	91.0	50.0	45.5	ug/L	57-139
4-Chlorotoluene	113.	50.0	56.3	ug/L	78-122
P-Isopropyltoluene	106.	50.0	53.2	ug/L	77-127
4-Methyl-2-Pentanone	94.2	50.0	47.1	ug/L	67-130
Acetone	91.2	50.0	45.6	ug/L	39-160
Benzene	108.	50.0	53.9	ug/L	79-120
Bromobenzene	106.	50.0	52.8	ug/L	80-120
Bromoform	105.	50.0	52.7	ug/L	66-130
Bromomethane	111.	50.0	55.7	ug/L	53-141
Carbon Disulfide	119.	50.0	59.5	ug/L	64-133
Carbon Tetrachloride	108.	50.0	54.1	ug/L	72-136
Chlorobenzene	104.	50.0	52.2	ug/L	82-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

LCS Recovery Report

Client:
Lab ID: WG225399-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: T4715.D

Sample Date:
Received Date:
Extract Date: 26-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225399

Analysis Date: 26-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	108.	50.0	53.8	ug/L	78-123
Dibromochloromethane	117.	50.0	58.6	ug/L	74-126
Chloroethane	110.	50.0	54.8	ug/L	60-138
Chloroform	108.	50.0	53.8	ug/L	79-124
Chloromethane	102.	50.0	50.8	ug/L	50-139
cis-1,2-Dichloroethene	111.	50.0	55.7	ug/L	78-123
cis-1,3-Dichloropropene	101.	50.0	50.7	ug/L	75-124
Dibromomethane	105.	50.0	52.4	ug/L	79-123
Bromodichloromethane	114.	50.0	56.8	ug/L	79-125
Dichlorodifluoromethane	86.6	50.0	43.3	ug/L	32-152
Ethylbenzene	109.	50.0	54.7	ug/L	79-121
1,2-Dibromoethane	109.	50.0	54.7	ug/L	77-121
Hexachlorobutadiene	108.	50.0	54.0	ug/L	66-134
Isopropylbenzene	111.	50.0	55.5	ug/L	72-131
Methyl tert-butyl Ether	107.	50.0	53.6	ug/L	71-124
Methylene Chloride	102.	50.0	51.0	ug/L	74-124
m+p-Xylenes	114.	100.	114.	ug/L	80-121
Naphthalene	97.2	50.0	48.6	ug/L	61-128
N-Butylbenzene	109.	50.0	54.7	ug/L	75-128
N-Propylbenzene	111.	50.0	55.7	ug/L	76-126
o-Xylene	101.	50.0	50.7	ug/L	78-122
sec-Butylbenzene	108.	50.0	53.8	ug/L	77-126
Styrene	105.	50.0	52.5	ug/L	78-123
tert-Butylbenzene	106.	50.0	53.2	ug/L	78-124
Tetrachloroethene	105.	50.0	52.3	ug/L	74-129
Toluene	106.	50.0	53.2	ug/L	80-121
trans-1,2-Dichloroethene	103.	50.0	51.6	ug/L	75-124
trans-1,3-Dichloropropene	105.	50.0	52.6	ug/L	73-127
Trichloroethene	102.	50.0	50.9	ug/L	79-123
Trichlorofluoromethane	107.	50.0	53.5	ug/L	65-141
Vinyl Chloride	102.	50.0	51.1	ug/L	58-137
Dibromofluoromethane	101.				80-120
1,2-Dichloroethane-d4	98.2				81-120
Toluene-d8	100.				89-120
P-Bromofluorobenzene	101.				85-120

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Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4715.D
Report Date: 28-Mar-2018 11:00

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032618.b\T4715.D
Lab Smp Id: WG225399-1
Inj Date : 26-MAR-2018 09:44
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225399-1,SL2295
Misc Info : WG225399,WG225352-4,SL2295-1
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032618.b\T8A05(23)D.m
Meth Date : 27-Mar-2018 19:40 jsampson   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 2   QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

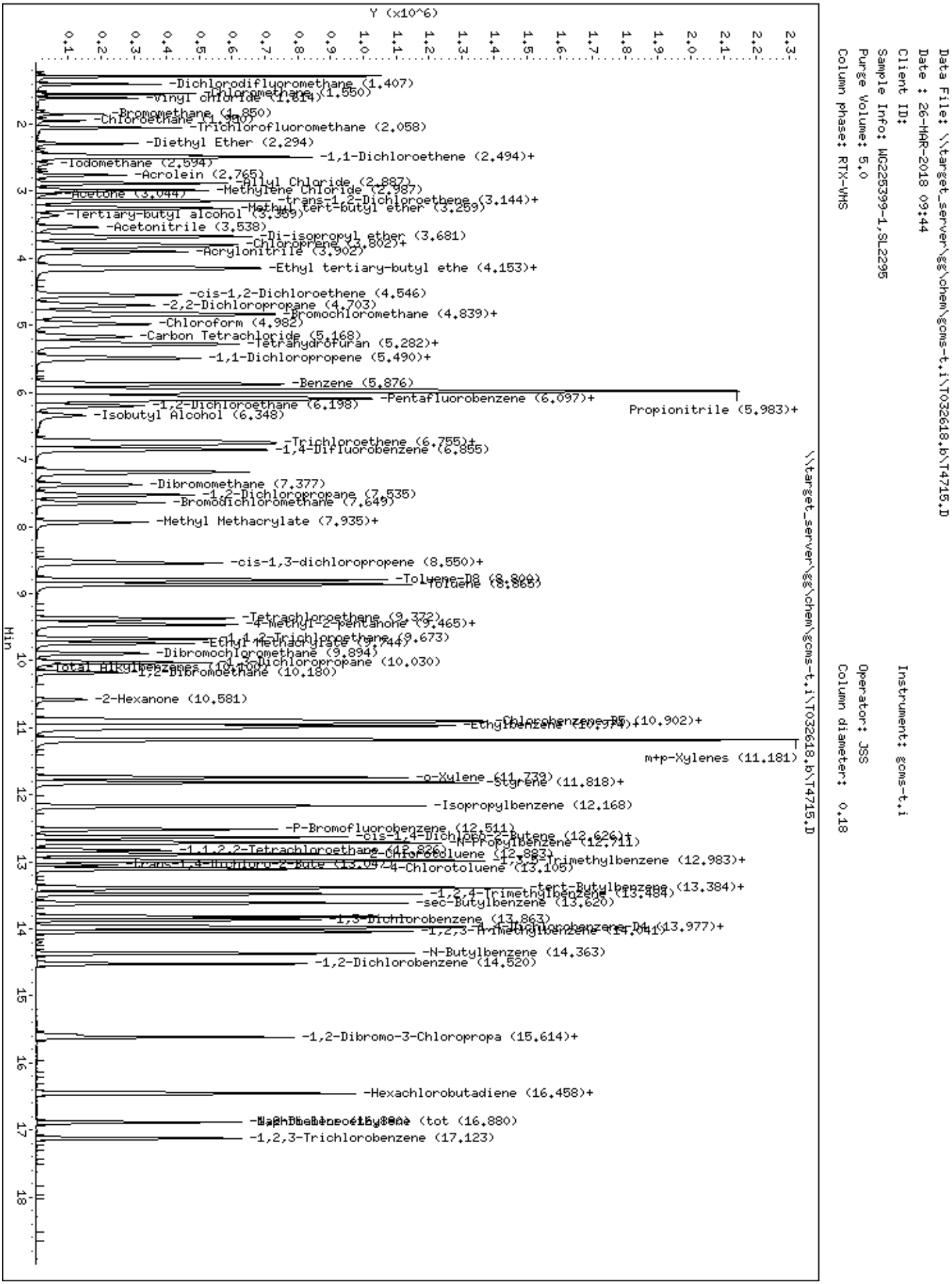
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	194641	43.2612	43.3	
2	Chloromethane	50	1.549	1.549	(0.255)	307331	50.8005	50.8	
3	Vinyl chloride	62	1.614	1.614	(0.266)	189064	51.1242	51.1	
4	Bromomethane	94	1.850	1.850	(0.305)	71639	55.7042	55.7	
5	Chloroethane	64	1.950	1.943	(0.321)	94621	54.8133	54.8	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	301998	53.5228	53.5	
7	Diethyl Ether	59	2.293	2.293	(0.378)	139228	54.5226	54.5	
19	Tertiary-butyl alcohol	59	3.358	3.373	(0.553)	92174	255.711	256	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	143181	51.0284	51.0	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	498964	59.5407	59.5	
9	Freon-113	151	2.493	2.486	(0.411)	129650	54.2004	54.2	
11	Iodomethane	142	2.593	2.593	(0.427)	48370	41.9950	42.0	
12	Acrolein	56	2.765	2.765	(0.456)	233856	253.319	253	
14	Methylene Chloride	84	2.987	2.987	(0.492)	265984	51.0008	51.0	
15	Acetone	43	3.044	3.044	(0.502)	67190	45.6534	45.6	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	134521	877.407	877	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	266406	51.6020	51.6	
13	Allyl Chloride	41	2.886	2.887	(0.476)	371899	55.5469	55.5	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	767541	53.6064	53.6	
20	Acetonitrile	41	3.537	3.537	(0.583)	271298	481.503	482	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	745131	55.2524	55.2	
22	Chloroprene	53	3.795	3.802	(0.625)	383887	57.0905	57.1	
39	Propionitrile	54	5.954	5.954	(0.981)	335649	521.317	521	
40	Methacrylonitrile	41	5.983	5.983	(0.986)	1434045	541.405	541	

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4715.D
Report Date: 28-Mar-2018 11:00

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	23	1,1-Dichloroethane	63	3.823	3.830	(0.630)	496993	55.7717	55.8	
	24	Acrylonitrile	52	3.902	3.909	(0.643)	382780	261.456	261	
	25	Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	735876	51.8875	51.9	
	26	Vinyl Acetate	43	4.159	4.166	(0.607)	593919	60.8405	60.8	
	27	cis-1,2-Dichloroethene	96	4.545	4.553	(0.749)	283860	55.6688	55.7	
M	98	1,2-Dichloroethylene (total)	96				550266	107.271	107	
	52	Methyl Methacrylate	41	7.935	7.935	(1.157)	194402	48.9381	48.9	
	28	2,2-Dichloropropane	77	4.703	4.703	(0.775)	414007	60.6224	60.6	
	29	Bromochloromethane	128	4.846	4.853	(0.799)	127227	53.8587	53.8	
	31	Chloroform	83	4.982	4.982	(0.821)	481886	53.8449	53.8	
	32	Carbon Tetrachloride	117	5.167	5.168	(0.754)	319944	54.1402	54.1	
	33	Tetrahydrofuran	42	5.239	5.232	(0.863)	65447	51.8592	51.8	
$	34	Dibromofluoromethane	113	5.282	5.275	(0.870)	252663	50.4718	50.5	
	35	1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	411380	54.5566	54.6	
	37	1,1-Dichloropropene	75	5.489	5.489	(0.801)	374932	54.4863	54.5	
	36	2-Butanone	43	5.503	5.496	(0.907)	103123	52.7283	52.7	
	38	Benzene	78	5.875	5.875	(0.857)	1053993	53.8669	53.9	
*	41	Pentafluorobenzene	168	6.068	6.068	(1.000)	497524	50.0000		
	30	Cyclohexane	56	4.824	4.824	(0.795)	408350	53.3882	53.4	
	53	Ethyl Methacrylate	69	9.744	9.744	(1.421)	310266	47.5091	47.5	
$	42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	334829	49.1124	49.1	
	43	Tertiary-amyl methyl ether	73	6.097	6.104	(1.005)	679986	53.1404	53.1	
	44	1,2-Dichloroethane	62	6.197	6.204	(0.904)	383383	52.5350	52.5	
	47	Trichloroethene	95	6.769	6.776	(0.987)	274004	50.9108	50.9	
*	48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	778914	50.0000		
	49	Dibromomethane	93	7.384	7.384	(1.077)	165587	52.4121	52.4	
	50	1,2-Dichloropropane	63	7.534	7.534	(1.099)	253652	53.4252	53.4	
	51	Bromodichloromethane	83	7.649	7.649	(1.116)	353394	56.8251	56.8	
	57	cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	446094	50.6742	50.7	
	54	1,4-Dioxane	88	7.956	7.956	(1.161)	43553	964.892	965	
$	58	Toluene-D8	98	8.800	8.800	(1.284)	919023	50.2819	50.3	
	59	Toluene	92	8.864	8.864	(1.293)	626329	53.1748	53.2	
	61	4-methyl-2-pentanone	43	9.436	9.436	(1.377)	191108	47.0618	47.1	
	60	Tetrachloroethene	164	9.372	9.372	(0.861)	176361	52.3180	52.3	
	62	trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	398470	52.6079	52.6	
	63	1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	187915	53.1571	53.2	
	64	Dibromochloromethane	129	9.894	9.894	(0.909)	228267	58.6532	58.6	
	65	1,3-Dichloropropane	76	10.030	10.030	(0.921)	420085	52.7397	52.7	
	66	1,2-Dibromoethane	107	10.180	10.180	(1.485)	216853	54.6638	54.7	
	67	2-Hexanone	43	10.580	10.580	(0.972)	117264	45.5419	45.5	
*	68	Chlorobenzene-D5	117	10.888	10.888	(1.000)	621855	50.0000		
	69	Chlorobenzene	112	10.909	10.909	(1.002)	605810	52.1695	52.2	
	70	1-Chlorohexane	91	10.931	10.931	(1.004)	332967	51.8856	51.9	
	71	Ethylbenzene	106	10.973	10.974	(1.008)	335810	54.7476	54.7	
	72	1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	203687	55.1829	55.2	
M	106	Xylenes (total)	106				1142732	165.133	165	
	73	m+p-Xylenes	106	11.181	11.181	(1.027)	779818	114.472	114	
	74	o-Xylene	106	11.738	11.739	(1.078)	362914	50.6610	50.7	
	75	Styrene	104	11.817	11.817	(1.085)	606272	52.4913	52.5	
	76	Bromoform	173	11.817	11.817	(1.085)	140455	52.6642	52.7	
	77	Isopropylbenzene	105	12.168	12.168	(0.871)	932254	55.5052	55.5	
$	78	P-Bromofluorobenzene	95	12.511	12.511	(1.825)	299212	50.6450	50.6	
	79	cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	73829	52.1762	52.2	
	86	trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	56167	59.2407	59.2	

Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4715.D
Report Date: 28-Mar-2018 11:00

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
Compounds									
	80 Bromobenzene	156	12.625	12.625	(0.904)	219755	52.7817	52.8	
	81 N-Propylbenzene	91	12.711	12.711	(0.910)	1132922	55.7363	55.7	
	82 1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	251601	52.1691	52.2	
	85 1,3,5-Trimethylbenzene	105	12.983	12.990	(0.929)	733657	53.0502	53.0	
	83 2-Chlorotoluene	91	12.883	12.883	(0.922)	675019	55.7120	55.7	
	84 1,2,3-Trichloropropane	75	12.975	12.976	(0.929)	219058	51.0217	51.0	
	87 4-Chlorotoluene	91	13.104	13.104	(0.938)	716982	56.3108	56.3	
	88 tert-Butylbenzene	119	13.383	13.383	(0.958)	651352	53.2138	53.2	
	89 Pentachloroethane	165	13.390	13.397	(0.959)	91794	59.1336	59.1	
	90 1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	747933	52.5503	52.6	
	92 P-Isopropyltoluene	119	13.383	13.383	(0.958)	651352	53.2138	53.2	
	93 1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	378086	53.9856	54.0	
*	94 1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	269904	50.0000		
	95 1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	381857	51.2535	51.2	
	97 N-Butylbenzene	91	14.363	14.363	(1.028)	727955	54.7066	54.7	
	91 sec-Butylbenzene	105	13.619	13.619	(0.975)	914424	53.8267	53.8	
	99 1,2-Dichlorobenzene	146	14.520	14.527	(1.039)	356964	54.3825	54.4	
	100 1,2-Dibromo-3-Chloropropane	75	15.571	15.578	(1.115)	44032	53.0031	53.0	
	101 1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	274201	52.0319	52.0	
	102 Hexachlorobutadiene	225	16.443	16.443	(1.177)	108026	53.9784	54.0	
	103 1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	230154	50.1458	50.1	
	96 1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	776266	55.9710	56.0	
	104 Naphthalene	128	16.880	16.887	(1.208)	496552	48.5948	48.6	
	105 1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	202948	49.6941	49.7	
	17 Methyl Acetate	43	3.158	3.158	(0.520)	202104	47.9073	47.9	
	46 Methylcyclohexane	83	6.740	6.733	(1.111)	438059	58.6812	58.7	
M	55 Total Alkylbenzenes	100				5559595	376.298	376	


Data File: \\target_server\gg\chem\gcms-t.i\T032618.b\T4715.D
Date : 26-MAR-2018 09:44
Client ID:
Sample Info: WG225399-1,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
Y (x10^6)
Min
\\target_server\gg\chem\gcms-t.i\T032618.b\T4715.D
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.990)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)
-Acetone (3.044)
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.359)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.153)+
-cis-1,2-Dichloroethene (4.546)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.168)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.490)+
-Benzene (5.876)
-Pentafluorobenzene (6.097)+
Propionitrile (5.983)+
-1,2-Dichloroethane (6.198)
-Isobutyl Alcohol (6.348)
-Trichloroethene (6.755)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.377)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)+
-Toluene-D8 (8.800)
-Toluene (8.865)
-Tetrachloroethene (9.372)
-4-Methyl-2-pentanone (9.465)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Alkylbenzenes (10.100)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.739)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.626)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-2-Chlorotoluene (12.883)
-1,3,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.047)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.384)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.458)+
-1,2,3-Trichlorobenzene (17.123)

LCS Recovery Report

Client:
Lab ID: WG225462-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: T4741.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,1,1,2-Tetrachloroethane	105.	50.0	52.7	ug/L	78-125
1,1,1-Trichloroethane	99.4	50.0	49.7	ug/L	74-131
1,1,2,2-Tetrachloroethane	101.	50.0	50.4	ug/L	71-121
Freon-113	107.	50.0	53.5	ug/L	70-136
1,1,2-Trichloroethane	106.	50.0	53.2	ug/L	80-120
1,1-Dichloroethane	105.	50.0	52.7	ug/L	77-125
1,1-Dichloroethene	97.8	50.0	48.9	ug/L	71-131
1,1-Dichloropropene	101.	50.0	50.6	ug/L	79-125
1,2,3-Trichlorobenzene	93.6	50.0	46.8	ug/L	69-129
1,2,3-Trichloropropane	98.4	50.0	49.2	ug/L	73-122
1,2,4-Trichlorobenzene	91.2	50.0	45.6	ug/L	69-130
1,2,4-Trimethylbenzene	97.6	50.0	48.8	ug/L	76-124
1,2-Dibromo-3-Chloropropane	96.2	50.0	48.1	ug/L	62-128
1,2-Dichlorobenzene	102.	50.0	51.0	ug/L	80-120
1,2-Dichloroethane	101.	50.0	50.4	ug/L	73-128
1,2-Dichloropropane	103.	50.0	51.6	ug/L	78-122
1,3,5-Trimethylbenzene	97.6	50.0	48.8	ug/L	75-124
1,3-Dichlorobenzene	102.	50.0	51.2	ug/L	80-120
1,3-Dichloropropane	102.	50.0	50.8	ug/L	80-120
1,4-Dichlorobenzene	95.6	50.0	47.8	ug/L	79-120
2,2-Dichloropropane	103.	50.0	51.5	ug/L	60-139
2-Butanone	104.	50.0	52.2	ug/L	56-143
2-Chlorotoluene	102.	50.0	51.0	ug/L	79-122
2-Hexanone	89.8	50.0	44.9	ug/L	57-139
4-Chlorotoluene	105.	50.0	52.3	ug/L	78-122
P-Isopropyltoluene	99.0	50.0	49.5	ug/L	77-127
4-Methyl-2-Pentanone	90.4	50.0	45.2	ug/L	67-130
Acetone	95.0	50.0	47.5	ug/L	39-160
Benzene	101.	50.0	50.5	ug/L	79-120
Bromobenzene	100.	50.0	50.1	ug/L	80-120
Bromoform	98.8	50.0	49.4	ug/L	66-130
Bromomethane	101.	50.0	50.3	ug/L	53-141
Carbon Disulfide	113.	50.0	56.3	ug/L	64-133
Carbon Tetrachloride	99.6	50.0	49.8	ug/L	72-136
Chlorobenzene	100.	50.0	50.2	ug/L	82-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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LCS Recovery Report

Client:
Lab ID: WG225462-1
Client ID: LCS
Project:
SDG: SL2295
LCS File ID: T4741.D

Sample Date:
Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 04-APR-18

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromochloromethane	103.	50.0	51.4	ug/L	78-123
Dibromochloromethane	111.	50.0	55.4	ug/L	74-126
Chloroethane	112.	50.0	56.0	ug/L	60-138
Chloroform	101.	50.0	50.4	ug/L	79-124
Chloromethane	102.	50.0	51.1	ug/L	50-139
cis-1,2-Dichloroethene	104.	50.0	52.2	ug/L	78-123
cis-1,3-Dichloropropene	95.4	50.0	47.7	ug/L	75-124
Dibromomethane	104.	50.0	52.0	ug/L	79-123
Bromodichloromethane	107.	50.0	53.6	ug/L	79-125
Dichlorodifluoromethane	92.2	50.0	46.1	ug/L	32-152
Ethylbenzene	104.	50.0	52.0	ug/L	79-121
1,2-Dibromoethane	106.	50.0	53.1	ug/L	77-121
Hexachlorobutadiene	94.0	50.0	47.0	ug/L	66-134
Isopropylbenzene	102.	50.0	51.2	ug/L	72-131
Methyl tert-butyl Ether	101.	50.0	50.5	ug/L	71-124
Methylene Chloride	98.8	50.0	49.4	ug/L	74-124
m+p-Xylenes	108.	100.	108.	ug/L	80-121
Naphthalene	93.4	50.0	46.7	ug/L	61-128
N-Butylbenzene	97.2	50.0	48.6	ug/L	75-128
N-Propylbenzene	104.	50.0	52.1	ug/L	76-126
o-Xylene	94.4	50.0	47.2	ug/L	78-122
sec-Butylbenzene	99.0	50.0	49.5	ug/L	77-126
Styrene	100.	50.0	50.2	ug/L	78-123
tert-Butylbenzene	99.0	50.0	49.5	ug/L	78-124
Tetrachloroethene	94.8	50.0	47.4	ug/L	74-129
Toluene	100.	50.0	50.2	ug/L	80-121
trans-1,2-Dichloroethene	97.0	50.0	48.5	ug/L	75-124
trans-1,3-Dichloropropene	100.	50.0	50.1	ug/L	73-127
Trichloroethene	97.6	50.0	48.8	ug/L	79-123
Trichlorofluoromethane	107.	50.0	53.7	ug/L	65-141
Vinyl Chloride	104.	50.0	52.1	ug/L	58-137
Dibromofluoromethane	101.				80-120
1,2-Dichloroethane-d4	100.				81-120
Toluene-d8	101.				89-120
P-Bromofluorobenzene	104.				85-120

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4741.D
Report Date: 28-Mar-2018 09:39

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4741.D
Lab Smp Id: WG225462-1
Inj Date : 27-MAR-2018 12:36
Operator : JSS Inst ID: gcms-t.i
Smp Info : WG225462-1,SL2295
Misc Info : WG225462,WG225352-4,SL2295-6
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 28-Mar-2018 06:28 TCOTE Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39 Cal File: T4709.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all50.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.406	1.406	(0.232)	196951	46.1274	46.1	
2	Chloromethane	50	1.549	1.549	(0.255)	293204	51.0876	51.1	
3	Vinyl chloride	62	1.614	1.614	(0.266)	182737	52.0692	52.1	
4	Bromomethane	94	1.850	1.850	(0.305)	61489	50.2624	50.3	
5	Chloroethane	64	1.950	1.943	(0.321)	91826	56.0533	56.0	
6	Trichlorofluoromethane	101	2.057	2.050	(0.339)	287737	53.7362	53.7	
7	Diethyl Ether	59	2.293	2.293	(0.378)	134886	55.6613	55.7	
19	Tertiary-butyl alcohol	59	3.366	3.373	(0.555)	91507	267.505	268	
8	1,1-Dichloroethene	96	2.465	2.465	(0.406)	130301	48.9340	48.9	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	447517	56.2718	56.3	
9	Freon-113	151	2.493	2.486	(0.411)	121531	53.5370	53.5	
11	Iodomethane	142	2.593	2.593	(0.427)	52937	47.5390	47.5	
12	Acrolein	56	2.765	2.765	(0.456)	162066	184.990	185	
14	Methylene Chloride	84	2.987	2.987	(0.492)	244513	49.3919	49.4	
15	Acetone	43	3.044	3.044	(0.502)	65879	47.5204	47.5	
45	Isobutyl Alcohol	43	6.340	6.347	(1.045)	144072	988.013	988	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	237508	48.4772	48.5	
13	Allyl Chloride	41	2.887	2.887	(0.476)	335154	52.7493	52.7	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	685652	50.4609	50.5	
20	Acetonitrile	41	3.537	3.537	(0.583)	270217	505.361	505	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	695931	54.3778	54.4	
22	Chloroprene	53	3.802	3.802	(0.627)	346002	54.2221	54.2	
39	Propionitrile	54	5.954	5.954	(0.981)	319381	522.712	523	

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Report Date: 28-Mar-2018 09:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	40 Methacrylonitrile	41	5.983	5.983	(0.986)	1403651	558.412	558	
	23 1,1-Dichloroethane	63	3.830	3.830	(0.631)	445685	52.7021	52.7	
	24 Acrylonitrile	52	3.902	3.909	(0.643)	374591	269.615	270	
	25 Ethyl tertiary-butyl ether	59	4.145	4.138	(0.683)	684128	50.8385	50.8	
	26 Vinyl Acetate	43	4.166	4.166	(0.608)	554360	59.3527	59.4	
	27 cis-1,2-Dichloroethene	96	4.553	4.553	(0.750)	252368	52.1529	52.2	
M	98 1,2-Dichloroethylene (total)	96				489876	100.630	101	
	52 Methyl Methacrylate	41	7.935	7.935	(1.157)	182356	48.0096	48.0	
	28 2,2-Dichloropropane	77	4.703	4.703	(0.775)	333889	51.5186	51.5	
	29 Bromochloromethane	128	4.846	4.853	(0.799)	115263	51.4166	51.4	
	31 Chloroform	83	4.982	4.982	(0.821)	428364	50.4371	50.4	
	32 Carbon Tetrachloride	117	5.175	5.168	(0.755)	280802	49.7578	49.8	
	33 Tetrahydrofuran	42	5.246	5.232	(0.865)	61168	51.1185	51.1	
$	34 Dibromofluoromethane	113	5.275	5.275	(0.869)	239617	50.4384	50.4	
	35 1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	355829	49.7258	49.7	
	37 1,1-Dichloropropene	75	5.489	5.489	(0.801)	332910	50.5623	50.6	
	36 2-Butanone	43	5.504	5.496	(0.907)	96907	52.2132	52.2	
	38 Benzene	78	5.875	5.875	(0.857)	945386	50.4962	50.5	
*	41 Pentafluorobenzene	168	6.068	6.068	(1.000)	472147	50.0000		
	30 Cyclohexane	56	4.831	4.824	(0.796)	336114	46.3548	46.4	
	53 Ethyl Methacrylate	69	9.744	9.744	(1.421)	299521	47.9179	47.9	
$	42 1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	324707	50.1876	50.2	
	43 Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	634919	52.2853	52.3	
	44 1,2-Dichloroethane	62	6.204	6.204	(0.905)	352109	50.4263	50.4	
	47 Trichloroethene	95	6.769	6.776	(0.987)	251332	48.8052	48.8	
*	48 1,4-Difluorobenzene	114	6.855	6.855	(1.000)	745289	50.0000		
	49 Dibromomethane	93	7.384	7.384	(1.077)	157283	52.0298	52.0	
	50 1,2-Dichloropropane	63	7.527	7.534	(1.098)	234483	51.6160	51.6	
	51 Bromodichloromethane	83	7.649	7.649	(1.116)	319009	53.6103	53.6	
	57 cis-1,3-dichloropropene	75	8.550	8.550	(1.247)	401251	47.6896	47.7	
	54 1,4-Dioxane	88	7.956	7.956	(1.161)	42347	980.501	980	
$	58 Toluene-D8	98	8.800	8.800	(1.284)	879703	50.3021	50.3	
	59 Toluene	92	8.864	8.864	(1.293)	566165	50.2356	50.2	
	61 4-methyl-2-pentanone	43	9.436	9.436	(1.377)	175943	45.1917	45.2	
	60 Tetrachloroethene	164	9.372	9.372	(0.861)	154341	47.4321	47.4	
	62 trans-1,3-Dichloropropene	75	9.465	9.472	(1.381)	362703	50.0802	50.1	
	63 1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	180083	53.2399	53.2	
	64 Dibromochloromethane	129	9.894	9.894	(0.909)	208100	55.3940	55.4	
	65 1,3-Dichloropropane	76	10.030	10.030	(0.921)	390990	50.8521	50.8	
	66 1,2-Dibromoethane	107	10.180	10.180	(1.485)	201572	53.1043	53.1	
	67 2-Hexanone	43	10.580	10.580	(0.972)	111619	44.9378	44.9	
*	68 Chlorobenzene-D5	117	10.888	10.888	(1.000)	600270	50.0000		
	69 Chlorobenzene	112	10.909	10.909	(1.002)	562243	50.1588	50.2	
	70 1-Chlorohexane	91	10.931	10.931	(1.004)	283378	46.0091	46.0	
	71 Ethylbenzene	106	10.973	10.974	(1.008)	307658	51.9616	52.0	
	72 1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	187947	52.7496	52.7	
M	106 Xylenes (total)	106				1033749	154.855	155	
	73 m+p-Xylenes	106	11.181	11.181	(1.027)	708227	107.701	108	
	74 o-Xylene	106	11.739	11.739	(1.078)	325522	47.1532	47.2	
	75 Styrene	104	11.817	11.817	(1.085)	559412	50.2101	50.2	
	76 Bromoform	173	11.817	11.817	(1.085)	127035	49.4573	49.4	
	77 Isopropylbenzene	105	12.168	12.168	(0.871)	841653	51.1966	51.2	
$	78 P-Bromofluorobenzene	95	12.511	12.511	(1.825)	295593	52.2898	52.3	
	79 cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.905)	70286	50.7837	50.8	

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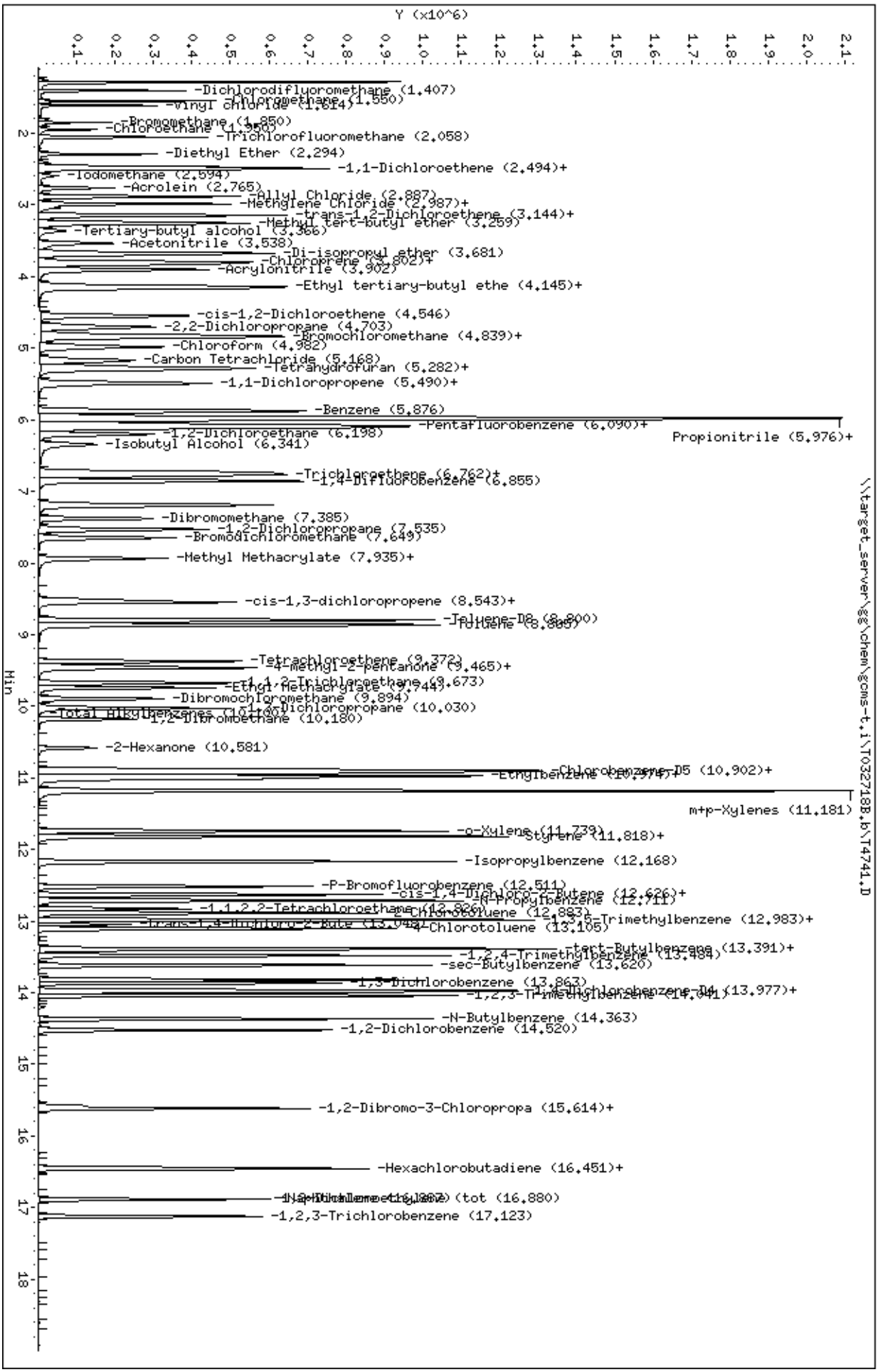
Report Date: 28-Mar-2018 09:39

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	86	trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	54506	58.7349	58.7	
	80	Bromobenzene	156	12.625	12.625	(0.904)	204036	50.0685	50.1	
	81	N-Propylbenzene	91	12.711	12.711	(0.910)	1036849	52.1155	52.1	
	82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.919)	238186	50.4579	50.4	
	85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.930)	661017	48.8360	48.8	
	83	2-Chlorotoluene	91	12.883	12.883	(0.923)	604850	51.0027	51.0	
	84	1,2,3-Trichloropropane	75	12.968	12.976	(0.929)	206789	49.2080	49.2	
	87	4-Chlorotoluene	91	13.104	13.104	(0.939)	652151	52.3293	52.3	
	88	tert-Butylbenzene	119	13.383	13.383	(0.959)	592878	49.5014	49.5	
	89	Pentachloroethane	165	13.397	13.397	(0.960)	86446	56.8955	56.9	
	90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.966)	679855	48.8125	48.8	
	92	P-Isopropyltoluene	119	13.383	13.383	(0.959)	592878	49.5014	49.5	
	93	1,3-Dichlorobenzene	146	13.862	13.862	(0.993)	351196	51.2330	51.2	
*	94	1,4-Dichlorobenzene-D4	152	13.962	13.969	(1.000)	264178	50.0000		
	95	1,4-Dichlorobenzene	146	13.984	13.984	(1.002)	348522	47.7932	47.8	
	97	N-Butylbenzene	91	14.363	14.363	(1.029)	632105	48.5804	48.6	
	91	sec-Butylbenzene	105	13.619	13.619	(0.975)	823969	49.5356	49.5	
	99	1,2-Dichlorobenzene	146	14.520	14.527	(1.040)	327585	50.9884	51.0	
	100	1,2-Dibromo-3-Chloropropane	75	15.571	15.578	(1.115)	39135	48.1295	48.1	
	101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	245027	47.5555	47.6	
	102	Hexachlorobutadiene	225	16.443	16.443	(1.178)	92085	47.0103	47.0	
	103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.179)	204147	45.5545	45.6	
	96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.006)	720006	53.0397	53.0	
	104	Naphthalene	128	16.887	16.887	(1.209)	466446	46.7479	46.7	
	105	1,2,3-Trichlorobenzene	180	17.123	17.123	(1.226)	186624	46.7846	46.8	
	17	Methyl Acetate	43	3.158	3.158	(0.520)	195421	48.8130	48.8	
	46	Methylcyclohexane	83	6.733	6.733	(1.110)	371013	52.3712	52.4	
M	55	Total Alkylbenzenes	100				5019551	346.883	347	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Date : 27-MAR-2018 12:36
Client ID:
Sample Info: WG225462-1,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4741.D
Y (x10^6)
Min
-Dichlorodifluoromethane (1.407)
-Chloromethane (1.550)
-Vinyl chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.950)
-Trichlorofluoromethane (2.058)
-Diethyl Ether (2.294)
-1,1-Dichloroethene (2.494)+
-Iodomethane (2.594)
-Acrolein (2.765)
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)+
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.802)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.145)+
-cis-1,2-Dichloroethene (4.546)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.168)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.490)+
-Benzene (5.876)
-Pentafluorobenzene (6.090)+
Propionitrile (5.976)+
-1,2-Dichloroethane (6.198)
-Isobutyl Alcohol (6.341)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.385)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.543)+
-Toluene-D8 (8.800)
Toluene (8.885)
-Tetrachloroethene (9.372)
-4-methyl-2-pentanone (9.465)+
-1,1,2-Trichloroethane (9.673)
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Total Alkylbenzenes (10.140)
1,2-Dibromoethane (10.180)
-2-Hexanone (10.581)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.974)+
m+p-Xylenes (11.181)
-o-Xylene (11.739)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.626)+
-N-Propylbenzene (12.711)
-1,1,2,2-Tetrachloroethane (12.826)
-Chlorobenzene (12.883)
-4,5,5-Trimethylbenzene (12.983)+
-trans-1,4-Dichloro-2-Bute (13.048)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.620)
-1,3-Dichlorobenzene (13.863)
-1,4-Dichlorobenzene-D4 (13.977)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.451)+
(tot (16.880)
-1,2,3-Trichlorobenzene (17.123)

MS/MSD Recovery Report

MS ID: WG225462-6
MSD ID: WG225462-7
Sample ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project:
SDG: SL2295
MS File ID: T4755.D

Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462
Report Date: 04-APR-18
MSD File ID: T4756.D

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
1,1,1,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	55.3	52.7	111.	105.	5	20	78-125
1,1,1-Trichloroethane	50.0	50.0	ug/L	U0.50	52.2	53.2	104.	106.	2	20	74-131
1,1,2,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	48.3	49.0	96.6	98.0	1	20	71-121
Freon-113	50.0	50.0	ug/L	EMM830	6280	5880	0*	0*	6	20	70-136
1,1,2-Trichloroethane	50.0	50.0	ug/L	U0.50	53.6	54.3	107.	109.	1	20	80-120
1,1-Dichloroethane	50.0	50.0	ug/L	U0.50	51.9	54.2	104.	108.	4	20	77-125
1,1-Dichloroethene	50.0	50.0	ug/L	JMM0.5(	82.2	78.3	164.*	157.*	5	20	71-131
1,1-Dichloropropene	50.0	50.0	ug/L	U0.50	52.4	54.2	105.	108.	3	20	79-125
1,2,3-Trichlorobenzene	50.0	50.0	ug/L	U0.50	43.8	45.4	87.6	90.8	4	20	69-129
1,2,3-Trichloropropane	50.0	50.0	ug/L	U0.50	48.4	48.7	96.8	97.4	1	20	73-122
1,2,4-Trichlorobenzene	50.0	50.0	ug/L	U0.50	44.1	45.4	88.2	90.8	3	20	69-130
1,2,4-Trimethylbenzene	50.0	50.0	ug/L	U0.50	50.0	50.1	100.	100.	0	20	76-124
1,2-Dibromo-3-Chloropropane	50.0	50.0	ug/L	U0.50	44.4	45.4	88.8	90.8	2	20	62-128
1,2-Dichlorobenzene	50.0	50.0	ug/L	U0.50	51.8	51.5	104.	103.	0	20	80-120
1,2-Dichloroethane	50.0	50.0	ug/L	U0.50	52.0	52.0	104.	104.	0	20	73-128
1,2-Dichloropropane	50.0	50.0	ug/L	U0.50	53.1	53.2	106.	106.	0	20	78-122
1,3,5-Trimethylbenzene	50.0	50.0	ug/L	U0.50	50.3	51.0	101.	102.	1	20	75-124
1,3-Dichlorobenzene	50.0	50.0	ug/L	U0.50	52.6	52.0	105.	104.	1	20	80-120
1,3-Dichloropropane	50.0	50.0	ug/L	U0.50	50.4	49.6	101.	99.2	2	20	80-120
1,4-Dichlorobenzene	50.0	50.0	ug/L	U0.50	49.2	48.6	98.4	97.2	1	20	79-120
2,2-Dichloropropane	50.0	50.0	ug/L	U0.50	45.7	47.0	91.4	94.0	3	20	60-139
2-Butanone	50.0	50.0	ug/L	U2.5	48.8	52.1	97.6	104.	6	20	56-143
2-Chlorotoluene	50.0	50.0	ug/L	U0.50	52.2	52.7	104.	105.	1	20	79-122
2-Hexanone	50.0	50.0	ug/L	U2.5	37.9	39.7	75.8	79.4	5	20	57-139
4-Chlorotoluene	50.0	50.0	ug/L	U0.50	53.5	53.2	107.	106.	0	20	78-122
P-Isopropyltoluene	50.0	50.0	ug/L	U0.50	50.2	50.2	100.	100.	0	20	77-127
4-Methyl-2-Pentanone	50.0	50.0	ug/L	U2.5	41.9	43.0	83.8	86.0	2	20	67-130
Acetone	50.0	50.0	ug/L	U2.5	37.9	39.7	75.8	79.4	5	20	39-160
Benzene	50.0	50.0	ug/L	U0.50	52.8	52.8	106.	106.	0	20	79-120
Bromobenzene	50.0	50.0	ug/L	U0.50	49.3	50.1	98.6	100.	2	20	80-120
Bromoform	50.0	50.0	ug/L	U0.50	50.8	50.3	102.	101.	1	20	66-130
Bromomethane	50.0	50.0	ug/L	UMM1.0	74.1	71.4	148.*	143.*	4	20	53-141
Carbon Disulfide	50.0	50.0	ug/L	U0.50	39.3	35.6	78.6	71.2	10	20	64-133

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MS/MSD Recovery Report

MS ID: WG225462-6
MSD ID: WG225462-7
Sample ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project:
SDG: SL2295
MS File ID: T4755.D

Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462
Report Date: 04-APR-18
MSD File ID: T4756.D

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Carbon Tetrachloride	50.0	50.0	ug/L	U0.50	53.6	53.3	107.	107.	0	20	72-136
Chlorobenzene	50.0	50.0	ug/L	U0.50	52.7	51.9	105.	104.	2	20	82-120
Bromochloromethane	50.0	50.0	ug/L	U0.50	43.8	44.3	87.6	88.6	1	20	78-123
Dibromochloromethane	50.0	50.0	ug/L	U0.50	56.2	55.2	112.	110.	2	20	74-126
Chloroethane	50.0	50.0	ug/L	UMM1.0	73.7	72.3	147.*	145.*	2	20	60-138
Chloroform	50.0	50.0	ug/L	U0.50	52.0	52.3	104.	105.	0	20	79-124
Chloromethane	50.0	50.0	ug/L	U1.0	53.9	58.2	108.	116.	8	20	50-139
cis-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	51.4	53.7	103.	107.	4	20	78-123
cis-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	43.6	44.7	87.2	89.4	2	20	75-124
Dibromomethane	50.0	50.0	ug/L	U0.50	53.7	54.1	107.	108.	1	20	79-123
Bromodichloromethane	50.0	50.0	ug/L	U0.50	57.3	57.4	115.	115.	0	20	79-125
Dichlorodifluoromethane	50.0	50.0	ug/L	UMM1.0	182.	197.	364.*	394.*	8	20	32-152
Ethylbenzene	50.0	50.0	ug/L	U0.50	54.7	54.2	109.	108.	1	20	79-121
1,2-Dibromoethane	50.0	50.0	ug/L	U0.50	53.6	54.8	107.	110.	2	20	77-121
Hexachlorobutadiene	50.0	50.0	ug/L	U0.75	45.9	48.0	91.8	96.0	4	20	66-134
Isopropylbenzene	50.0	50.0	ug/L	U0.50	52.3	52.4	105.	105.	0	20	72-131
Methyl tert-butyl Ether	50.0	50.0	ug/L	U0.50	44.4	47.8	88.8	95.6	7	20	71-124
Methylene Chloride	50.0	50.0	ug/L	U2.5	50.1	51.2	100.	102.	2	20	74-124
m+p-Xylenes	100.	100.	ug/L	U1.0	116.	114.	116.	114.	2	20	80-121
Naphthalene	50.0	50.0	ug/L	U0.50	44.1	44.5	88.2	89.0	1	20	61-128
N-Butylbenzene	50.0	50.0	ug/L	U0.50	51.0	52.1	102.	104.	2	20	75-128
N-Propylbenzene	50.0	50.0	ug/L	U0.50	54.5	54.9	109.	110.	1	20	76-126
o-Xylene	50.0	50.0	ug/L	U0.50	50.0	48.8	100.	97.6	2	20	78-122
sec-Butylbenzene	50.0	50.0	ug/L	U0.50	51.4	51.4	103.	103.	0	20	77-126
Styrene	50.0	50.0	ug/L	U0.50	52.7	51.9	105.	104.	2	20	78-123
tert-Butylbenzene	50.0	50.0	ug/L	U0.50	50.2	50.2	100.	100.	0	20	78-124
Tetrachloroethene	50.0	50.0	ug/L	U0.50	49.2	51.4	98.4	103.	4	20	74-129
Toluene	50.0	50.0	ug/L	J0.34	54.5	54.2	108.	108.	0	20	80-121
trans-1,2-Dichloroethene	50.0	50.0	ug/L	U0.50	46.2	49.8	92.4	99.6	7	20	75-124
trans-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	50.1	49.4	100.	98.8	1	20	73-127
Trichloroethene	50.0	50.0	ug/L	U0.50	50.8	52.1	102.	104.	2	20	79-123
Trichlorofluoromethane	50.0	50.0	ug/L	UMM1.0	1.0	1.0	0*	0*	0	20	65-141
Vinyl Chloride	50.0	50.0	ug/L	U1.0	63.3	63.6	127.	127.	0	20	58-137

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MS/MSD Recovery Report

MS ID: WG225462-6
MSD ID: WG225462-7
Sample ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project:
SDG: SL2295
MS File ID: T4755.D

Received Date:
Extract Date: 27-MAR-18
Extracted By: JSS
Extraction Method: SW846 5030
Lab Prep Batch: WG225462
Report Date: 04-APR-18
MSD File ID: T4756.D

Analysis Date: 27-MAR-18
Analyst: JSS
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Dibromofluoromethane	99.1	99.3	80-120
1,2-Dichloroethane-d4	100.	103.	81-120
Toluene-d8	103.	101.	89-120
P-Bromofluorobenzene	105.	102.	85-120

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Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4755.D
Report Date: 04-Apr-2018 05:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4755.D
Lab Smp Id: WG225462-6
Inj Date : 27-MAR-2018 21:11
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225462-6,SL2295
Misc Info : WG225462,WG225352-4,SL2295-2
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 04-Apr-2018 05:36 gcms-t.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 17   QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.392	1.406	(0.229)	565053	182.268	182(AR)	
2	Chloromethane	50	1.549	1.549	(0.255)	223901	53.8991	53.9	
3	Vinyl chloride	62	1.614	1.614	(0.266)	161330	63.3125	63.3	
4	Bromomethane	94	1.850	1.850	(0.305)	65291	74.0829	74.1(R)	
5	Chloroethane	64	1.950	1.943	(0.321)	87669	73.7057	73.7(R)	
7	Diethyl Ether	59	2.293	2.293	(0.378)	107217	60.9355	60.9	
19	Tertiary-butyl alcohol	59	3.365	3.373	(0.555)	42036	169.246	169(R)	
8	1,1-Dichloroethene	96	2.464	2.465	(0.406)	158848	82.1609	82.2(R)	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	226814	39.2800	39.3	
9	Freon-113	151	2.493	2.486	(0.411)	10351784	6280.61	6280(AR)	
11	Iodomethane	142	2.593	2.593	(0.427)	14319	20.3897	20.4(R)	
12	Acrolein	56	2.765	2.765	(0.456)	122982	193.338	193	
14	Methylene Chloride	84	2.986	2.987	(0.492)	180221	50.1452	50.1	
15	Acetone	43	3.044	3.044	(0.502)	39929	37.9162	37.9	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	72525	690.242	690	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	164325	46.1937	46.2	
13	Allyl Chloride	41	2.886	2.887	(0.476)	176301	38.2161	38.2	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	437980	44.3941	44.4	
20	Acetonitrile	41	3.537	3.537	(0.583)	154090	396.902	397	
21	Di-isopropyl ether	45	3.680	3.680	(0.606)	426882	45.9392	45.9	
22	Chloroprene	53	3.794	3.802	(0.625)	230308	49.7080	49.7	
39	Propionitrile	54	5.954	5.954	(0.981)	190305	428.967	429	
40	Methacrylonitrile	41	5.982	5.983	(0.986)	925061	506.858	507	
23	1,1-Dichloroethane	63	3.830	3.830	(0.631)	318528	51.8761	51.9	

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Report Date: 04-Apr-2018 05:36

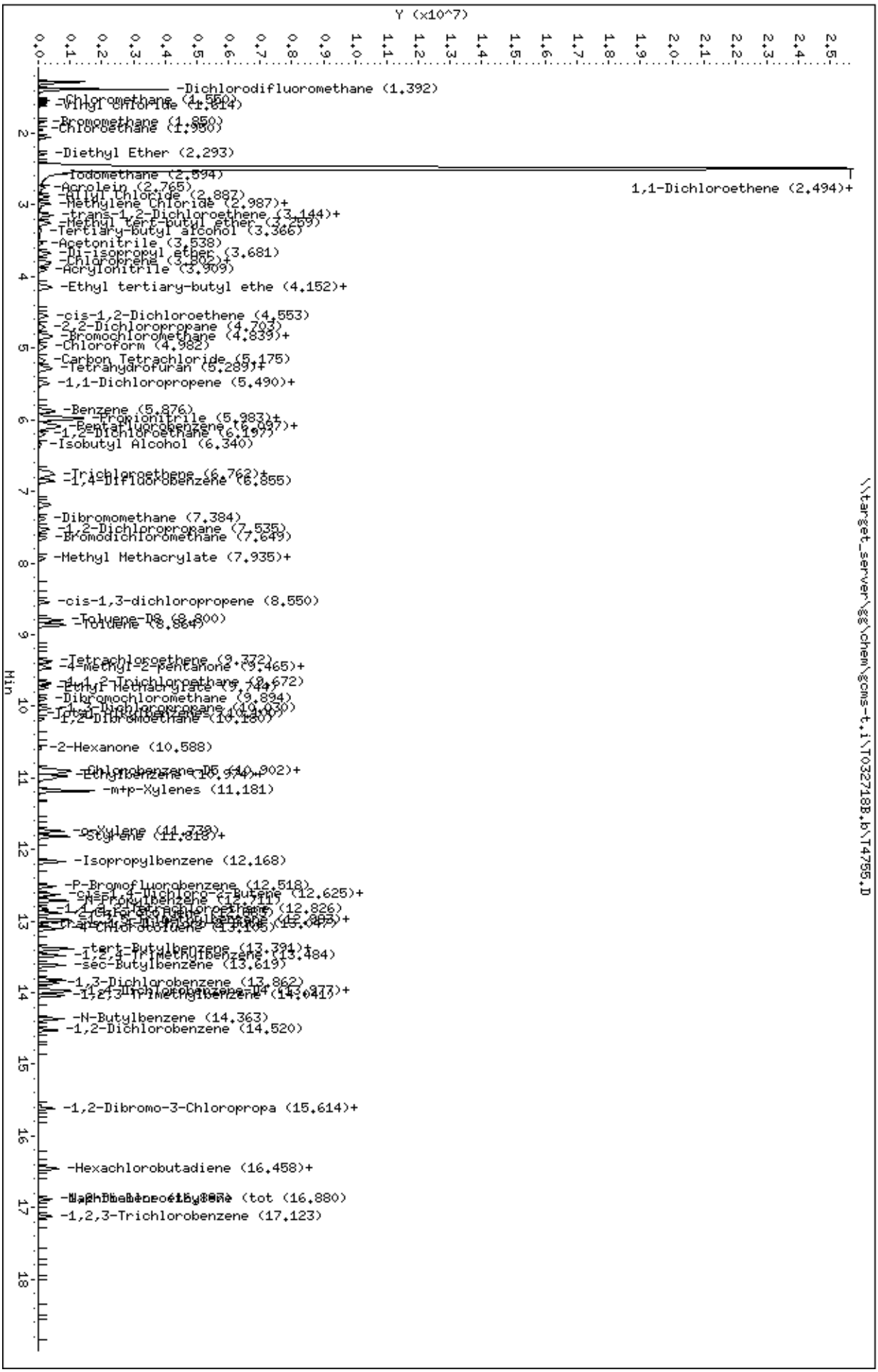
			QUANT SIG					CONCENTRATIONS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.902	3.909	(0.643)	231161	229.151	229	
	25	Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	415042	42.5360	42.5	
	26	Vinyl Acetate	43	4.159	4.166	(0.607)	345370	51.2591	51.2	
	27	cis-1,2-Dichloroethene	96	4.552	4.553	(0.750)	180789	51.4561	51.4	
M	98	1,2-Dichloroethylene (total)	96				345114	97.6498	97.6	
	52	Methyl Methacrylate	41	7.934	7.935	(1.157)	115054	42.1885	42.2	
	28	2,2-Dichloropropane	77	4.703	4.703	(0.775)	214934	45.6759	45.7	
	29	Bromochloromethane	128	4.853	4.853	(0.800)	71241	43.7687	43.8	
	31	Chloroform	83	4.981	4.982	(0.821)	320686	52.0040	52.0	
	32	Carbon Tetrachloride	117	5.174	5.168	(0.755)	218869	53.6541	53.6	
	33	Tetrahydrofuran	42	5.246	5.232	(0.865)	34952	40.8587	40.8	
$	34	Dibromofluoromethane	113	5.275	5.275	(0.869)	170919	49.5512	49.6	
	35	1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	271024	52.1637	52.2	
	37	1,1-Dichloropropene	75	5.489	5.489	(0.801)	249125	52.4369	52.4	
	36	2-Butanone	43	5.503	5.496	(0.907)	65734	48.7793	48.8	
	38	Benzene	78	5.875	5.875	(0.857)	712774	52.7620	52.8	
*	41	Pentafluorobenzene	168	6.068	6.068	(1.000)	342813	50.0000		
	30	Cyclohexane	56	4.824	4.824	(0.795)	246274	46.7751	46.8	
	53	Ethyl Methacrylate	69	9.743	9.744	(1.421)	201016	44.6860	44.7	
$	42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	235812	50.1985	50.2	
	43	Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	394122	44.7005	44.7	
	44	1,2-Dichloroethane	62	6.197	6.204	(0.904)	262124	52.0244	52.0	
	47	Trichloroethene	95	6.769	6.776	(0.987)	188849	50.8221	50.8	
*	48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	537780	50.0000		
	49	Dibromomethane	93	7.377	7.384	(1.076)	117162	53.7127	53.7	
	50	1,2-Dichloropropane	63	7.534	7.534	(1.099)	174088	53.1082	53.1	
	51	Bromodichloromethane	83	7.648	7.649	(1.116)	246144	57.3264	57.3	
	57	cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	264185	43.5919	43.6	
	54	1,4-Dioxane	88	7.956	7.956	(1.161)	22350	717.171	717	
$	58	Toluene-D8	98	8.800	8.800	(1.284)	651686	51.6427	51.6	
	59	Toluene	92	8.864	8.864	(1.293)	443149	54.4927	54.5	
	61	4-methyl-2-pentanone	43	9.443	9.436	(1.378)	118257	41.9316	41.9	
	60	Tetrachloroethene	164	9.379	9.372	(0.861)	118489	49.2527	49.2	
	62	trans-1,3-Dichloropropene	75	9.472	9.472	(1.382)	261907	50.1162	50.1	
	63	1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	130899	53.6316	53.6	
	64	Dibromochloromethane	129	9.894	9.894	(0.909)	156195	56.2366	56.2	
	65	1,3-Dichloropropane	76	10.029	10.030	(0.921)	286398	50.3819	50.4	
	66	1,2-Dibromoethane	107	10.180	10.180	(1.485)	146936	53.6472	53.6	
	67	2-Hexanone	43	10.587	10.580	(0.972)	68939	37.8882	37.9	
*	68	Chlorobenzene-D5	117	10.887	10.888	(1.000)	443798	50.0000		
	69	Chlorobenzene	112	10.909	10.909	(1.002)	437000	52.7309	52.7	
	70	1-Chlorohexane	91	10.930	10.931	(1.004)	219647	48.1277	48.1	
	71	Ethylbenzene	106	10.973	10.974	(1.008)	239568	54.7273	54.7	
	72	1,1,1,2-Tetrachloroethane	131	11.009	11.016	(1.011)	145690	55.3063	55.3	
M	106	Xylenes (total)	106				819261	165.949	166	
	73	m+p-Xylenes	106	11.181	11.181	(1.027)	563623	115.931	116	
	74	o-Xylene	106	11.738	11.739	(1.078)	255638	50.0177	50.0	
	75	Styrene	104	11.817	11.817	(1.085)	434167	52.6694	52.7	
	76	Bromoform	173	11.824	11.817	(1.086)	96648	50.8416	50.8	
	77	Isopropylbenzene	105	12.167	12.168	(0.871)	670944	52.3136	52.3	
$	78	P-Bromofluorobenzene	95	12.518	12.511	(1.826)	213746	52.4011	52.4	
	79	cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	41510	38.7531	38.8	
	86	trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	34648	47.8574	47.8	
	80	Bromobenzene	156	12.625	12.625	(0.904)	156659	49.2756	49.3	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4755.D
Report Date: 04-Apr-2018 05:36

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	12.711	12.711	(0.910)	846661	54.5481	54.5	
	82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	177914	48.3106	48.3	
	85	1,3,5-Trimethylbenzene	105	12.983	12.990	(0.929)	531046	50.2887	50.3	
	83	2-Chlorotoluene	91	12.882	12.883	(0.922)	483475	52.2562	52.2	
	84	1,2,3-Trichloropropane	75	12.975	12.976	(0.929)	158861	48.4557	48.4	
	87	4-Chlorotoluene	91	13.104	13.104	(0.938)	520168	53.5006	53.5	
	88	tert-Butylbenzene	119	13.390	13.383	(0.959)	469467	50.2398	50.2	
	89	Pentachloroethane	165	13.397	13.397	(0.959)	66492	56.0946	56.1	
	90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	543255	49.9928	50.0	
	92	P-Isopropyltoluene	119	13.390	13.383	(0.959)	469467	50.2398	50.2	
	93	1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	281361	52.6118	52.6	
*	94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	206100	50.0000		
	95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	279951	49.2081	49.2	
	97	N-Butylbenzene	91	14.362	14.363	(1.028)	518241	51.0317	51.0	
	91	sec-Butylbenzene	105	13.619	13.619	(0.975)	666924	51.4011	51.4	
	99	1,2-Dichlorobenzene	146	14.520	14.527	(1.039)	259418	51.7566	51.8	
	100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.115)	28160	44.3912	44.4	
	101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	179010	44.5709	44.6	
	102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	70201	45.9374	45.9	
	103	1,2,4-Trichlorobenzene	180	16.465	16.458	(1.179)	153993	44.0853	44.1	
	96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	547994	51.7439	51.7	
	104	Naphthalene	128	16.887	16.887	(1.209)	341903	44.0870	44.1	
	105	1,2,3-Trichlorobenzene	180	17.122	17.123	(1.226)	136140	43.8504	43.8	
	17	Methyl Acetate	43	3.158	3.158	(0.520)	106610	36.6760	36.7	
	46	Methylcyclohexane	83	6.733	6.733	(1.110)	274979	53.4593	53.4	
M	55	Total Alkylbenzenes	100				4045061	357.742	358	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4755.D
Date : 27-MAR-2018 21:11
Client ID:
Sample Info: WG225462-6,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4755.D
Y (x10^7)
Min
-Dichlorodifluoromethane (1.392)
-Chloromethane (1.560)
-Vinyl Chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.950)
-Diethyl Ether (2.293)
-Iodomethane (2.594)
-Acrolein (2.765)
1,1-Dichloroethene (2.494)+
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)+
-trans-1,2-Dichloroethene (3.144)+
-Methyl tert-butyl ether (3.259)
-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.681)
-Chloroprene (3.902)+
-Acrylonitrile (3.909)
-Ethyl tertiary-butyl ethe (4.152)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.703)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.289)+
-1,1-Dichloropropene (5.490)+
-Benzene (5.876)
-Propionitrile (5.983)+
-Pentafluorobenzene (6.097)+
-1,2-Dichloroethane (6.197)
-Isobutyl Alcohol (6.340)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.384)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)
-Toluene-D8 (8.800)
-Toluene (8.864)
-Tetrachloroethene (9.372)
-4-Methyl-2-pentanone (9.465)+
-Ethyl Methacrylate (9.744)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.588)
-Chlorobenzene-D5 (10.902)+
-Ethylbenzene (10.974)+
-m+p-Xylenes (11.181)
-o-Xylene (11.779)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.518)
-cis-1,4-Dichloro-2-Butene (12.625)+
-N-Propylbenzene (12.711)
-1,4-Dichlorobenzene-D4 (12.826)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.619)
-1,3-Dichlorobenzene (13.862)
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.458)+
-1,2,3-Trichlorobenzene (17.123)

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4756.D
Report Date: 04-Apr-2018 05:36

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T032718B.b\T4756.D
Lab Smp Id: WG225462-7
Inj Date : 27-MAR-2018 21:48
Operator : JSS   Inst ID: gcms-t.i
Smp Info : WG225462-7,SL2295
Misc Info : WG225462,WG225352-4,SL2295-2
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T032718B.b\T8A05(23)D.m
Meth Date : 04-Apr-2018 05:36 gcms-t.i   Quant Type: ISTD
Cal Date : 24-MAR-2018 15:39   Cal File: T4709.D
Als bottle: 18   QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all50.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.392	1.406	(0.229)	672827	196.992	197(AR)	
2	Chloromethane	50	1.549	1.549	(0.255)	265371	58.2301	58.2	
3	Vinyl chloride	62	1.614	1.614	(0.266)	178700	63.6536	63.6	
4	Bromomethane	94	1.850	1.850	(0.305)	69400	71.4300	71.4(R)	
5	Chloroethane	64	1.950	1.943	(0.321)	94781	72.3270	72.3(R)	
7	Diethyl Ether	59	2.293	2.293	(0.378)	114612	59.1236	59.1	
19	Tertiary-butyl alcohol	59	3.365	3.373	(0.555)	54032	197.457	197	
8	1,1-Dichloroethene	96	2.464	2.465	(0.406)	166757	78.2873	78.3(R)	
10	Carbon Disulfide	76	2.493	2.493	(0.411)	226288	35.5702	35.6	
9	Freon-113	151	2.493	2.486	(0.411)	10669293	5875.53	5880(AR)	
11	Iodomethane	142	2.593	2.593	(0.427)	22781	27.7866	27.8(R)	
12	Acrolein	56	2.765	2.765	(0.456)	148130	211.370	211	
14	Methylene Chloride	84	2.986	2.987	(0.492)	202681	51.1950	51.2	
15	Acetone	43	3.044	3.044	(0.502)	45595	39.6852	39.7	
45	Isobutyl Alcohol	43	6.347	6.347	(1.046)	91531	788.202	788	
16	trans-1,2-Dichloroethene	96	3.144	3.144	(0.518)	195407	49.8590	49.8	
13	Allyl Chloride	41	2.886	2.887	(0.476)	188613	37.1097	37.1	
18	Methyl tert-butyl ether	73	3.258	3.258	(0.537)	519175	47.7649	47.8	
20	Acetonitrile	41	3.537	3.537	(0.583)	189201	442.340	442	
21	Di-isopropyl ether	45	3.673	3.680	(0.605)	508350	49.6549	49.6	
22	Chloroprene	53	3.794	3.802	(0.625)	268281	52.5571	52.6	
39	Propionitrile	54	5.954	5.954	(0.981)	222920	456.086	456	
40	Methacrylonitrile	41	5.982	5.983	(0.986)	1055866	525.108	525	
23	1,1-Dichloroethane	63	3.830	3.830	(0.631)	366661	54.2012	54.2	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4756.D
Report Date: 04-Apr-2018 05:36

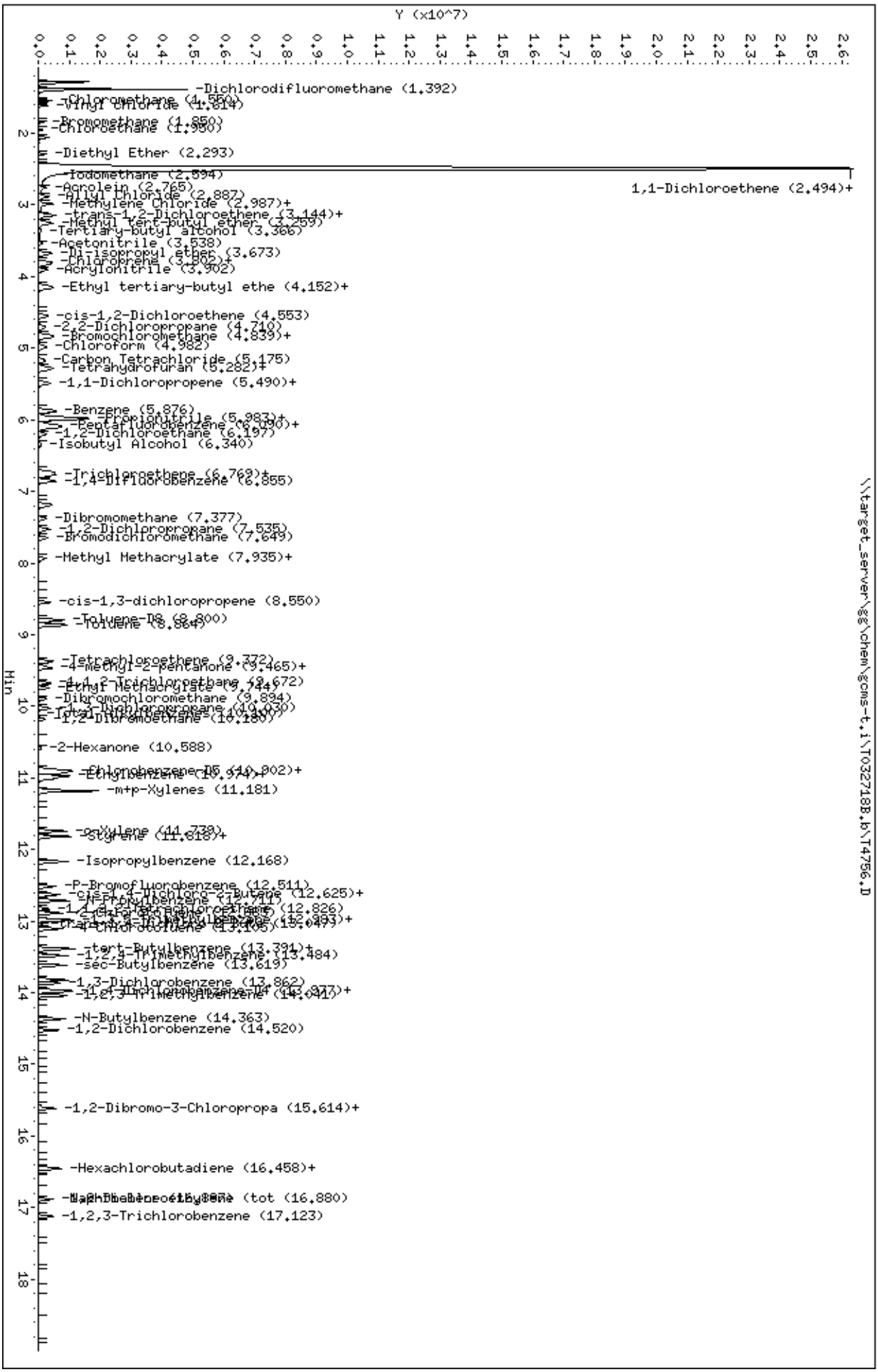
			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.909	3.909	(0.644)	270709	243.575	244	
	25	Ethyl tertiary-butyl ether	59	4.138	4.138	(0.682)	491193	45.6660	45.7	
	26	Vinyl Acetate	43	4.166	4.166	(0.608)	404096	54.3294	54.3	
	27	cis-1,2-Dichloroethene	96	4.545	4.553	(0.749)	207904	53.7095	53.7	
M	98	1,2-Dichloroethylene (total)	96				403311	103.569	104	
	52	Methyl Methacrylate	41	7.934	7.935	(1.158)	136434	45.1999	45.2	
	28	2,2-Dichloropropane	77	4.703	4.703	(0.775)	243844	47.0347	47.0	
	29	Bromochloromethane	128	4.846	4.853	(0.799)	79515	44.3411	44.3	
	31	Chloroform	83	4.981	4.982	(0.821)	355329	52.3012	52.3	
	32	Carbon Tetrachloride	117	5.167	5.168	(0.754)	239909	53.2898	53.3	
	33	Tetrahydrofuran	42	5.246	5.232	(0.865)	43460	45.7335	45.7	
$	34	Dibromofluoromethane	113	5.282	5.275	(0.870)	188618	49.6331	49.6	
	35	1,1,1-Trichloroethane	97	5.289	5.289	(0.872)	304860	53.2580	53.2	
	37	1,1-Dichloropropene	75	5.489	5.489	(0.801)	284492	54.2504	54.2	
	36	2-Butanone	43	5.503	5.496	(0.907)	77337	52.0903	52.1	
	38	Benzene	78	5.875	5.875	(0.857)	787277	52.7971	52.8	
*	41	Pentafluorobenzene	168	6.068	6.068	(1.000)	377688	50.0000		
	30	Cyclohexane	56	4.831	4.824	(0.796)	289404	49.8668	49.9	
	53	Ethyl Methacrylate	69	9.743	9.744	(1.421)	226985	45.6753	45.7	
$	42	1,2-Dichloroethane-D4	65	6.097	6.097	(1.005)	265702	51.3386	51.3	
	43	Tertiary-amyl methyl ether	73	6.104	6.104	(1.006)	462811	47.6441	47.6	
	44	1,2-Dichloroethane	62	6.197	6.204	(0.904)	288995	51.9641	52.0	
	47	Trichloroethene	95	6.769	6.776	(0.987)	213735	52.1107	52.1	
*	48	1,4-Difluorobenzene	114	6.855	6.855	(1.000)	593597	50.0000		
	49	Dibromomethane	93	7.384	7.384	(1.077)	130196	54.0755	54.1	
	50	1,2-Dichloropropane	63	7.534	7.534	(1.099)	192566	53.2213	53.2	
	51	Bromodichloromethane	83	7.648	7.649	(1.116)	271900	57.3704	57.4	
	57	cis-1,3-dichloropropene	75	8.549	8.550	(1.247)	299295	44.7182	44.7	
	54	1,4-Dioxane	88	7.956	7.956	(1.161)	26218	762.181	762	
$	58	Toluene-D8	98	8.800	8.800	(1.284)	704025	50.5442	50.5	
	59	Toluene	92	8.864	8.864	(1.293)	487032	54.2574	54.2	
	61	4-methyl-2-pentanone	43	9.436	9.436	(1.377)	133810	43.0449	43.0	
	60	Tetrachloroethene	164	9.372	9.372	(0.861)	137426	51.4266	51.4	
	62	trans-1,3-Dichloropropene	75	9.472	9.472	(1.382)	284762	49.3762	49.4	
	63	1,1,2-Trichloroethane	83	9.672	9.672	(1.411)	146336	54.3186	54.3	
	64	Dibromochloromethane	129	9.894	9.894	(0.909)	170431	55.2417	55.2	
	65	1,3-Dichloropropane	76	10.029	10.030	(0.921)	313367	49.6277	49.6	
	66	1,2-Dibromoethane	107	10.180	10.180	(1.485)	165596	54.7749	54.8	
	67	2-Hexanone	43	10.580	10.580	(0.972)	80480	39.7116	39.7	
*	68	Chlorobenzene-D5	117	10.887	10.888	(1.000)	492968	50.0000		
	69	Chlorobenzene	112	10.909	10.909	(1.002)	478190	51.9459	51.9	
	70	1-Chlorohexane	91	10.930	10.931	(1.004)	245578	48.4279	48.4	
	71	Ethylbenzene	106	10.973	10.974	(1.008)	263352	54.1600	54.2	
	72	1,1,1,2-Tetrachloroethane	131	11.016	11.016	(1.012)	154176	52.6900	52.7	
M	106	Xylenes (total)	106				892946	162.873	163	
	73	m+p-Xylenes	106	11.181	11.181	(1.027)	615782	114.026	114	
	74	o-Xylene	106	11.738	11.739	(1.078)	277164	48.8468	48.8	
	75	Styrene	104	11.817	11.817	(1.085)	474894	51.8758	51.9	
	76	Bromoform	173	11.817	11.817	(1.085)	106104	50.2695	50.3	
	77	Isopropylbenzene	105	12.167	12.168	(0.871)	733215	52.3627	52.4	
$	78	P-Bromofluorobenzene	95	12.511	12.511	(1.825)	230842	51.2708	51.3	
	79	cis-1,4-Dichloro-2-Butene	53	12.632	12.632	(0.904)	41627	35.6988	35.7	
	86	trans-1,4-Dichloro-2-Butene	53	13.047	13.047	(0.934)	34435	43.5646	43.6	
	80	Bromobenzene	156	12.625	12.625	(0.904)	173946	50.1133	50.1	

Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4756.D
Report Date: 04-Apr-2018 05:36

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	12.711	12.711	(0.910)	929711	54.8631	54.9	
	82	1,1,2,2-Tetrachloroethane	83	12.825	12.825	(0.918)	197200	49.0458	49.0	
	85	1,3,5-Trimethylbenzene	105	12.982	12.990	(0.929)	587490	50.9563	51.0	
	83	2-Chlorotoluene	91	12.882	12.883	(0.922)	532511	52.7175	52.7	
	84	1,2,3-Trichloropropane	75	12.968	12.976	(0.928)	174180	48.6618	48.7	
	87	4-Chlorotoluene	91	13.104	13.104	(0.938)	564213	53.1521	53.2	
	88	tert-Butylbenzene	119	13.390	13.383	(0.959)	512095	50.1947	50.2	
	89	Pentachloroethane	165	13.397	13.397	(0.959)	72165	55.7623	55.8	
	90	1,2,4-Trimethylbenzene	105	13.483	13.483	(0.965)	594487	50.1079	50.1	
	92	P-Isopropyltoluene	119	13.390	13.383	(0.959)	512095	50.1947	50.2	
	93	1,3-Dichlorobenzene	146	13.862	13.862	(0.992)	303570	51.9925	52.0	
*	94	1,4-Dichlorobenzene-D4	152	13.969	13.969	(1.000)	225017	50.0000		
	95	1,4-Dichlorobenzene	146	13.984	13.984	(1.001)	301574	48.5524	48.6	
	97	N-Butylbenzene	91	14.362	14.363	(1.028)	578128	52.1338	52.1	
	91	sec-Butylbenzene	105	13.619	13.619	(0.975)	728627	51.4358	51.4	
	99	1,2-Dichlorobenzene	146	14.527	14.527	(1.040)	281705	51.4782	51.5	
	100	1,2-Dibromo-3-Chloropropane	75	15.578	15.578	(1.115)	31424	45.3720	45.4	
	101	1,3,5-Trichlorobenzene	180	15.614	15.621	(1.118)	202701	46.2046	46.2	
	102	Hexachlorobutadiene	225	16.443	16.443	(1.177)	80155	48.0415	48.0	
	103	1,2,4-Trichlorobenzene	180	16.458	16.458	(1.178)	173395	45.4295	45.4	
	96	1,2,3-Trimethylbenzene	105	14.041	14.041	(1.005)	602262	52.0873	52.1	
	104	Naphthalene	128	16.887	16.887	(1.209)	377430	44.5463	44.5	
	105	1,2,3-Trichlorobenzene	180	17.122	17.123	(1.226)	154249	45.4458	45.4	
	17	Methyl Acetate	43	3.158	3.158	(0.520)	127809	39.9089	39.9	
	46	Methylcyclohexane	83	6.733	6.733	(1.110)	316625	55.8718	55.9	
M	55	Total Alkylbenzenes	100				4442633	359.886	360	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.


Y (x10^7)
Min
-Dichlorodifluoromethane (1.392)
-Chloromethane (1.550)
-Vinyl Chloride (1.614)
-Bromomethane (1.850)
-Chloroethane (1.950)
-Diethyl Ether (2.293)
-Iodomethane (2.594)
-Acrolein (2.765)
1,1-Dichloroethene (2.494)+
-Allyl Chloride (2.887)
-Methylene Chloride (2.987)+
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-Tertiary-butyl alcohol (3.366)
-Acetonitrile (3.538)
-Di-isopropyl ether (3.673)
-Chloroprene (3.802)+
-Acrylonitrile (3.902)
-Ethyl tertiary-butyl ethe (4.152)+
-cis-1,2-Dichloroethene (4.553)
-2,2-Dichloropropane (4.710)
-Bromochloromethane (4.839)+
-Chloroform (4.982)
-Carbon Tetrachloride (5.175)
-Tetrahydrofuran (5.282)+
-1,1-Dichloropropene (5.490)+
-Benzene (5.876)
-Bromobutane (5.983)+
-Pentafluorobenzene (6.090)+
-1,2-Dichloroethane (6.197)
-Isobutyl Alcohol (6.340)
-Trichloroethene (6.762)+
-1,4-Difluorobenzene (6.855)
-Dibromomethane (7.377)
-1,2-Dichloropropane (7.535)
-Bromodichloromethane (7.649)
-Methyl Methacrylate (7.935)+
-cis-1,3-dichloropropene (8.550)
-Toluene-D8 (8.800)
-Toluene (8.864)
-Tetrachloroethene (9.372)
-4-Methyl-2-pentanone (9.465)+
-Ethyl Methacrylate (9.747)
-1,1,2-Trichloroethane (9.672)
-Dibromochloromethane (9.894)
-1,3-Dichloropropane (10.030)
-Tetrachloroethene-D2 (10.100)
-1,2-Dibromoethane (10.180)
-2-Hexanone (10.588)
-Chlorobenzene-D5 (11.002)+
-Ethylbenzene (10.974)+
-m+p-Xylenes (11.181)
-o-Xylene (11.729)
-Styrene (11.818)+
-Isopropylbenzene (12.168)
-P-Bromofluorobenzene (12.511)
-cis-1,4-Dichloro-2-Butene (12.625)+
-N-Propylbenzene (12.711)
-1,2,4,5-Tetrachlorobenzene (12.826)
-4-Chlorotoluene (13.105)
-tert-Butylbenzene (13.391)+
-1,2,4-Trimethylbenzene (13.484)
-sec-Butylbenzene (13.619)
-1,3-Dichlorobenzene (13.862)
-1,4-Dichlorobenzene-D4 (14.017)+
-1,2,3-Trimethylbenzene (14.041)
-N-Butylbenzene (14.363)
-1,2-Dichlorobenzene (14.520)
-1,2-Dibromo-3-Chloropropa (15.614)+
-Hexachlorobutadiene (16.458)+
-Naphthalene-d8 (tot (16.880)
-1,2,3-Trichlorobenzene (17.123)
\\target_server\gg\chem\gcms-t.i\T032718B.b\T4756.D
Data File: \\target_server\gg\chem\gcms-t.i\T032718B.b\T4756.D
Date : 27-MAR-2018 21:48
Client ID:
Sample Info: WG225462-7,SL2295
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: JSS
Column diameter: 0.18

Logbooks and Supporting Documents

KATAHDIN ANALYTICAL SERVICES

GCMS-P INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 3-19-18B

					PREP METHOD			Criteria			pH Paper Lot #:				KI Paper Lot #
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG225041 -10	FB3983	1	-1	VOABFBAQ							Y	DJ	N/A	N/A	A Files PGA05(62)
Cond. STD	P4804	1	1	P8A05(62)							/				
Rinse	05	1	2	P8A05(62)D							—				Curve
WG225041 -4	06	1	3								Y				
-3	07	1	4								Y				OK
-2	08	1	5								Y				
-1	09	1	6								Y				
-6	10	1	7								Y				
-5	11	1	8								Y				
-7	12	1	9								Y				
Rinse	13	1	10								—				

STANDARD	CODE
BFB	V1035
CAL. STD.	V1037/V1038A
LCS/MS MIX	V1030
EXTRAS MIX	V1039

STANDARD	CODE
IS MIX	V1016
SS MIX	

TIT 3/20/18

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

Katahdin Analytical Services 1000501

GCMS-P INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 3-23-18 7:30

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
W0225300 -3	P4987	1	-	VOABCDAD	✓						Y	✓			
VSTD50 -4	P4879		1	(P8A05/62)							Y				
LCS -1	80		2								Y				
VBlankA	81		3								N				
B -2	82		4								Y				4.2
SL2079-14B	83		5						5.0		Y/N		<2		1 SS ↓
15 B	84		6						↓		N		<2		1 SS ↓
SL2296-14RA B	85		7						4.2		Y		<2		
-17RA B	86		8								Y		<2		
-13 A	87	✓	9								Y		<2		
-21DL B	88	4	10								Y		<2		
-9DL B	89	2	11								Y		<2		
-20DL B	90	2	12						↓		Y		<2		
SLD010-3RA C	91	1	13						5.0		N		<2		1 SS ↓
-5RA C	92		14								N		<2		1 SS ↓
SL2295-1 A	93		15								N		<2		1 SS ↓
-3 A	94		16								N		<2		1 SS ↓
-4 A	95		17								N		<2		1 SS ↓
-5 A	96		18								N		<2		1 SS ↓
-6 A	97		19						↓		N		<2		1 SS ↓
CCV1	98		20								Y				18:58
2	99		21								N				Not needed
3	P4900		22								N				↓
Rmsc	✓ 01		23								—				
✓	✓ 02	✓	24	✓	✓						—	✓	✓	✓	

STANDARD	CODE
BFB	V1025
CAL. STD.	V1037 | V1038B
LCS/MS MIX	~~V1040~~ V1030
EXTRAS MIX	V1039

STANDARD	CODE
IS MIX	V1045
SS MIX	↓

3-23-18

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-P INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 3-24-18 8:01

					PREP METHOD			Criteria			pH Paper Lot #:				KI Paper Lot #
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	TRC	COMMENTS
WG225349 -10	PB988	1	-	VOABFBA2	Y						Y	TB			
50 -4	P4904		1	P8A05(63)							Y				Cume
20 -3	05		2								Y				OK
5 -2	06		3								Y				
1 -1	07		4								Y				
150 -6	08		5								Y				
100 -5	09		6								Y				
Ind/LCS -7/8	10		7								N				PCDFM ↓
VBlankA	11		8								-				
B -9	12		9								-				

TTC 3/26/18

STANDARD	CODE
BFB	V1025
CAL. STD.	V1046/V1048A
LCS/MS MIX	V1044
EXTRAS MIX	V1047

STANDARD	CODE
IS MIX	V1045
SS MIX	V

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-P INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 3-26-18 8:07

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG225398 -3	PB959	1	-	[illegible]	✓						Y	[illegible]			
rstd50 -4	P4914		1	P8A05(63)							Y				
LCS -1	15		2								Y				(A)=IND -6
VBlnkA	16		3								N				
B	17		4								N				
C -2	18		5								Y				
SL2453-2A	19		6					✓			Y		<2		
SL2079-14RA C	20		7						5.0		N		<2		
15RA C	21		8						✓		N		<2		
SL2453-1 A	22		9					✓			Y		<2		
SL2010-3RA2 E	23		10						5.0		N		<2		
-5RA2 E	24		11								N		<2		
SL2295-15A	25		12								N		<2		Did not run
-16 A	26		13								N		<2		
-17 A	27		14								N		<2		
-18 A	28		15								N		<2		
-19 A	39		16								N		<2		
-20 A	30		17								N		<2		
-22 A	31		18								N		<2		
CCV1 -5	32		19								N				
2	33		20					3 [illegible]			N				
3	34		21								N				
Rinse	35		22								N				

STANDARD	CODE
BFB	V1025
CAL. STD.	V1046/V1048A
LCS/MS MIX	V1044
EXTRAS MIX	V1047

STANDARD	CODE
IS MIX	V1045
SS MIX	✓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

Cont'd - 624

Katahdin Analytical Services 1000504

GCMS-P INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 3-27-18 737

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	pH Paper Lot #: Y/N	ANALYST	PH	TRC	KI Paper Lot # COMMENTS
WG225461 -3	P3990A	1	-	V0083CBASQ	✓						Y	B			
VStd 50 -4	P4926		1	P8A05(63)							Y				
LCS -1	28		2								Y				
VBlankA	30		3								N				Target hits
✓ B	31		4								Y				
SL2295-21 A	32		5						5.0		Y		<2		
-23 A	33		6								Y		<2		
-25 A	34		7								Y		<2		
-15 B	36		8								Y		<2		
-16 B	37		9								Y		<2		DL 1:10
-17 B	38		10								Y		<2		
-18 B	39		11								Y		<2		
-19 B	40		12										<2		1SS ↑ DL 1:4
-20 B	41		13								Y		<2		DL 1:2
-22 B	42		14								Y		<2		
-24 B	43		15										<2		1SS ↑
-13	44		16								Y		<2		
CCV1	45		17								Y				1924 ✓
2	46		18								N				Not needed
3	47		19								N				↓
Rinse	48		20												

TTC 3/28/18

STANDARD	CODE
BFB	V1025
CAL. STD.	V1046 | V1048A
LCS/MS MIX	V1049
EXTRAS MIX	V1047

STANDARD	CODE
IS MIX	V1045
SS MIX	✓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

624 cont'd

VOA-024 - Revision 3 - 02/26/2018

QAMS651

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KATAHDIN ANALYTICAL SERVICES

GCMS-T INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 032418

					PREP METHOD			Criteria			pH Paper Lot #:			
SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	5030	5035	1311	KAS	DoD	QAPP	Y/N	ANALYST	PH	COMMENTS
WG225352-10	TB589	1	-1	VCABFBAB	✓						Y	[illegible]		
Rinse	T4703	1	1	T8A05(23)							N			
WG225352-4	04	1	2								Y			
-3	05	1	3								Y			Curve ok
-2	06	1	4								Y			[illegible] 032618
-1	07	1	5								Y			
-6	08	1	6								Y			
-5	09	1	7								Y			
-7	10	1	8								Y			
VBLK	11	1	9								N			
WG225352-9	12	1	10								N			
Rinse	13	1	10								N			

STANDARD	CODE
BFB	V1025
CAL. STD.	V1046/V1048A
LCS/MS MIX	V1044
EXTRAS MIX	V1047

STANDARD	CODE
IS MIX	1031
SS MIX	

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

KATAHDIN ANALYTICAL SERVICES

GCMS-T INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 3-26-18 8:36

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	5035	1311	Criteria KAS	DoD	QAPP	Y/N	ANALYST	pH Paper Lot #: PH	COMMENTS
WG225399-3	TB590	1	–	V0DBCB3A2	✓						Y	[illegible]		
VSTA50 -4	~~T8A05~~ T4714	1	1	T8A05 (~~2~~ 3)							Y			
LCS	T4715	1	2								Y			
VBlankA	16	1	3	WS 4-3-18							N			
✓ B -2	17	1	4								Y			
SL2295-1RA B	18	1	5						5.0		Y		<2	
-3RA B	19	1	6								Y			
-4RA B	20	1	7								Y			RR 1:20
-5RA B	21	1	8								N			1SS↑ C.O RR STR
-6RA B	22	1	9								Y			1SS↑ RR 1:100
-7A	23	1	10								N			1SS↑ C.O RR STR
-8A	24	1	11								N			1SS↑ C.O RR STR
-9A	25	1	12								N			1SS↑ C.O. RR STR
-10A	26	1	13								Y			1SS↑ RR 1:50
-11A	27	1	14								Y			1SS↑ RR 1:20
-12A	28	1	15								Y			1SS↑ RR 1:5
-13A	29	1	16								N			1SS↑ C.O. RR STR
-14A	30	1	17								Y			1SS↑ RR 1:20
CCV1	31	1	18								Y			
2	32	1	19								N			
3	33	1	20								N			20:46
Rinse	34	1	21								N			
✓	35	1	22								N			
Rinse	36	1	1								N			
														[illegible] 03-27-18

STANDARD	CODE
BFB	V1025
CAL. STD.	V1046 (V1048A
LCS/MS MIX	~~V1049~~ V1049
EXTRAS MIX	~~V1044~~ V1047

3-26-18

STANDARD	CODE
IS MIX	V1031
SS MIX	✓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM	EPA 624
(heated purge)	EPA 524

GCMS-T INSTRUMENT RUNLOG

KATAHDIN ANALYTICAL SERVICES

DATE/TIME OF BFB INJECTION: 3-27-18 1043

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	PREP METHOD 5030	PREP METHOD 5035	PREP METHOD 1311	Criteria KAS	Criteria DoD	Criteria QAPP	pH Paper Lot #: Y/N	ANALYST	PH	COMMENTS
WG225462-3	TB592	1	–	[illegible]	✓						Y	[illegible]		
VStd50	T4739		1	T8AC5(2B)							N			
✓ -4	40		2	3							Y			
LCS -1	41		3	WS 4-3-18							Y			
VBlankA	42		4								N			
B -2	43	✓	5								Y			Target hits
SL2295-6DL C	44	100	6						5.0		Y		<2	
-10DL B	45	50	7								Y		<2	1 SS↑
-4DL C	46	20	8								Y		<2	2 SS↑
-11DL B	47	20	9								Y		<2	1 SS↑
-14DL B	48	20	10								Y		<2	1 SS↑
-12DL B	49	5	11								Y		<2	2 SS↑
-5RA2 C	50	1	12								Y		<2	2 SS↑
-7RA B	51		13								Y		<2	2 SS↑
-8RA B	52		14										<2	2 SS↑
-9RA B	53		15								N		<2	1 IS↓ 2 SS↑
-2 B	54		16										<2	1 SS↑ DL 1:200
-2MS C-6	55		17								Y		<2	
-2MSD D7	56		18								Y		<2	
CCV1 -5	57		19								N			2225✓ Freon-113↑
2	58		20								Y			
3	59		21								Y			
Rmsa	60		22								–			
✓	61	✓	23								–			

TTC 3/28/18

STANDARD	CODE
BFB	V1025
CAL. STD.	V1046/1048B
LCS/MS MIX	V1049
EXTRAS MIX	V1047

STANDARD	CODE
IS MIX	V1031
SS MIX	✓

Circle Methods:

SW846 8260	OLM 04.2
SW846 8260 SIM	OLC 03.2
SW846 8260 SIM (heated purge)	EPA 624
	EPA 524

VOA-009 - Revision 2 - 02/15/2016

QAMS642

0000099

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-G

DATE OF DFTPP INJECTION: 032718

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
WG225305-1	50ng DFTPP	GD479	1	1	DFTPP SLM	2.0	JLK	OK
-4	SSTD 1.00 G0327	G2655	↓	2	GD10XN90	↓	↓	✓
-2	0.25	56		3				✓
-3	0.5	57		4				✓
-5	3.0	58		5				✓
-6	7.0	59		6				✓
-7	15	60		7				✓ 53025 (MD)
-8	(MD)	61		8				OK
	WG225020-1RA	62		9				OK
	↓ -2RA	63	↓	10				OK
	SL2296-1BDL	64	2	11				OK 100/200
	↓ -2DL	65	2	12				OK ↓
	SL2089-1	66	1	13				OK
	-3DL	67	3	14				OK 100/300
	-5DL	68	3	15				OK ↓
	-7	69	1	16				OK
	-9	70		17				OK2
	-11	71		18				OK
	WG225020-5	72		19				OK
	↓ -6	73		20				OK
WG225093	~~SL2138-1~~ -1RA	74		21				OK
↓	JLK = -2RA	75		22				OK
	SL2138-1	76		23				OK
	-7-3 JLK	77		24				OK
	-9-5	78		25				OK
	JLK -11-7	79		26				OK
SL2138-9	~~SSTD 1.00 G0327~~	80		27				OK
↓ -11	~~WG225305-1 dup~~	81	↓	28	↓	↓	↓	OK

STANDARD	CODE
DFTPP	53055
CAL. STD.	53053
IS MIX	53050

REVIEWED AND APPROVED BY: _____
DATE: _____

Cont next page

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-G

DATE OF DFTPP INJECTION: 032718 cont

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
	SSTD1.00 G0327	G2682	1	29	GD10N90	2.0	JLG	ok
	WG225405-1	83		30				ok
	↓ -2	84		31				ok
	SL2439-2	85		32				ok DL 1:2
	-3	86		33				DC
	-4	87		34				
	-5	88		35				
	-6	89		36				
	-7	90		37				
	-8	91		38				
	-9	92		39				
	SL2384-4	93		40				
	-5	94		41				
	-6	95		42				
	-8	96		43				
	-9	97		44				
	-10	98		45				
	-11	99		46				
	-13	G2700		47				
	-15	01		48				
	-16	02		49				
	-17	03	↓	50	↓	↓	↓	↓ DL 1:300

STANDARD	CODE
DFTPP	53055
CAL. STD.	53053
IS MIX	53056

REVIEWED AND APPROVED BY: _____
DATE: _____

KATAHDIN ANALYTICAL SERVICES
GC/MS SVOA INJ LOG INSTRUMENT: 5973-G

DATE OF DFTPP INJECTION: 032818

JOB	SAMPLE	DATAFILE	DF	ALS #	METHOD	UL INJ	CHEMIST	COMMENTS
W6225534-1	50 ng DFTPP	G0480	1	1	DFTPP5M	2.0	JLK	OK
-2	SSTD 1.00 G0328	G2704	1	2	G1018N90			OK
	SL2439-2DL	05	3	3				OK 150/300
	-3	06	11	4				OK
	-4	07		5				OK
	-5	08		6				OK
	-6	09		7				OK
	-7	10		8				OK
	-8	11		9				OK
	-9	12		10				OK
	SL2384-17DL	13	300	11				OK 50/1000 → 50/750
	-4	14	1	12				OK
	-5	15		13				OK
	-6	16		14				OK
	-8	17		15				OK
	-9	18		16				OK
	-10	19		17				OK
	-11	20		18				OK
	-13	21		19				OK
	-15	22		20				OK
	-16	23		21				OK

STANDARD	CODE
DFTPP	53055
CAL. STD.	53053
IS MIX	53056

REVIEWED AND APPROVED BY: _____
DATE: _____

EXPLOSIVES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2295

Client Sample ID	Lab Sample ID	Col. ID	DNB #
CHAAP-21C-LGIA-DPT02	SL2295-1	B	120.
CHAAP-21C-LGIA-DPT20	SL2295-10	B	97.1
CHAAP-21C-UGIA-DPT01	SL2295-11	B	101.
CHAAP-21C-UGIA-DPT03	SL2295-12	B	98.9
CHAAP-21C-UGIA-DPT05	SL2295-13	B	105.
CHAAP-21C-UGIA-DPT07	SL2295-14	B	118.
CHAAP-21C-UGIA-DPT09	SL2295-15	B	113.
CHAAP-21C-UGIA-DPT11	SL2295-16	B	111.
CHAAP-21C-UGIA-DPT13	SL2295-17	B	102.
CHAAP-21C-UGIA-DPT15	SL2295-18	B	103.
CHAAP-21C-UGIA-DPT17	SL2295-19	B	98.2
CHAAP-21C-LGIA-DPT04	SL2295-2	B	102.
CHAAP-21C-UGIA-DPT19	SL2295-20	B	103.
CHAAP-21C-LGIA-DPT10	SL2295-22	B	95.9
CHAAP-21C-EB-031718	SL2295-23	B	101.
CHAAP-21C-UGIA-DPT10	SL2295-24	B	97.0
CHAAP-21C-EB-031818	SL2295-25	B	99.0
CHAAP-21C-LGIA-DPT06	SL2295-3	B	90.7
CHAAP-21C-LGIA-DPT08	SL2295-4	B	97.4
CHAAP-21C-LGIA-DPT10	SL2295-5	B	98.2
CHAAP-21C-LGIA-DPT12	SL2295-6	B	101.
CHAAP-21C-LGIA-DPT14	SL2295-7	B	96.8
CHAAP-21C-LGIA-DPT16	SL2295-8	B	99.4
CHAAP-21C-LGIA-DPT18	SL2295-9	B	98.8
Method Blank Sample	WG225094-1	B	96.3
Laboratory Control S	WG225094-2	B	101.
Matrix Spike	WG225094-3	B	102.
Matrix Spike Duplica	WG225094-4	B	110.
Method Blank Sample	WG225144-1	B	99.2
Laboratory Control S	WG225144-2	B	96.8

		QC Limits
DNB	1,2-DINITROBENZENE	83-120

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Cornhusker Army Ammunition Plant **Matrix:** AQ
Lab Code: KAS **SDG:** SL2295

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10044.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL2295
Lab Sample ID : WG225094-1
Date Extracted : 19-MAR-18
Date Analyzed : 20-MAR-18
Time Analyzed : 21:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225094-2	HLC10045.	03/20/18	22:19
CHAAP-21C-LGIA-DPT02	SL2295-1	HLC10048.	03/20/18	23:54
Matrix Spike	WG225094-3	HLC10050.	03/21/18	00:58
Matrix Spike Duplica	WG225094-4	HLC10051.	03/21/18	01:30
CHAAP-21C-LGIA-DPT04	SL2295-2	HLC10052.	03/21/18	02:02
CHAAP-21C-LGIA-DPT06	SL2295-3	HLC10053.	03/21/18	02:33
CHAAP-21C-LGIA-DPT08	SL2295-4	HLC10054.	03/21/18	03:05
CHAAP-21C-LGIA-DPT10	SL2295-5	HLC10055.	03/21/18	03:37
CHAAP-21C-LGIA-DPT12	SL2295-6	HLC10056.	03/21/18	04:09
CHAAP-21C-LGIA-DPT14	SL2295-7	HLC10057.	03/21/18	04:40
CHAAP-21C-LGIA-DPT16	SL2295-8	HLC10058.	03/21/18	05:12
CHAAP-21C-LGIA-DPT18	SL2295-9	HLC10059.	03/21/18	05:44
CHAAP-21C-LGIA-DPT20	SL2295-10	HLC10061.	03/21/18	06:48
CHAAP-21C-UGIA-DPT01	SL2295-11	HLC10062.	03/21/18	07:19
CHAAP-21C-UGIA-DPT03	SL2295-12	HLC10063.	03/21/18	07:51
CHAAP-21C-UGIA-DPT05	SL2295-13	HLC10064.	03/21/18	08:23
CHAAP-21C-UGIA-DPT07	SL2295-14	HLC10065.	03/21/18	08:55
CHAAP-21C-UGIA-DPT09	SL2295-15	HLC10066.	03/21/18	09:26
CHAAP-21C-UGIA-DPT11	SL2295-16	HLC10067.	03/21/18	09:58
CHAAP-21C-UGIA-DPT13	SL2295-17	HLC10068.	03/21/18	10:30
CHAAP-21C-UGIA-DPT15	SL2295-18	HLC10069.	03/21/18	11:02

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10072.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL2295
Lab Sample ID : WG225144-1
Date Extracted : 21-MAR-18
Date Analyzed : 21-MAR-18
Time Analyzed : 13:52

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG225144-2	HLC10073.	03/21/18	14:24
CHAAP-21C-UGIA-DPT17	SL2295-19	HLC10074.	03/21/18	14:55
CHAAP-21C-UGIA-DPT19	SL2295-20	HLC10075.	03/21/18	15:27
CHAAP-21C-LGIA-DPT106	SL2295-22	HLC10076.	03/21/18	15:59
CHAAP-21C-EB-031718	SL2295-23	HLC10077.	03/21/18	16:31
CHAAP-21C-UGIA-DPT109	SL2295-24	HLC10078.	03/21/18	17:02
CHAAP-21C-EB-031818	SL2295-25	HLC10079.	03/21/18	17:34

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10158.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL2295
Lab Sample ID : WG225094-1C
Date Extracted : 19-MAR-18
Date Analyzed : 23-MAR-18
Time Analyzed : 20:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-21C-LGIA-DPT02	SL2295-1C	HLC10160.	03/23/18	22:36
CHAAP-21C-LGIA-DPT12	SL2295-6C	HLC10162.	03/24/18	00:14
CHAAP-21C-LGIA-DPT14	SL2295-7C	HLC10164.	03/24/18	01:52
CHAAP-21C-LGIA-DPT16	SL2295-8C	HLC10165.	03/24/18	02:42
CHAAP-21C-LGIA-DPT18	SL2295-9C	HLC10166.	03/24/18	03:31
CHAAP-21C-LGIA-DPT20	SL2295-10C	HLC10167.	03/24/18	04:20
CHAAP-21C-UGIA-DPT03	SL2295-12C	HLC10168.	03/24/18	05:09
CHAAP-21C-UGIA-DPT11	SL2295-16C	HLC10169.	03/24/18	05:58
CHAAP-21C-UGIA-DPT13	SL2295-17C	HLC10170.	03/24/18	06:47
CHAAP-21C-UGIA-DPT15	SL2295-18C	HLC10171.	03/24/18	07:36

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Lab File ID : HLC10172.D
Instrument ID : HPLC02
Matrix : AQ

SDG : SL2295
Lab Sample ID : WG225144-1C
Date Extracted : 21-MAR-18
Date Analyzed : 24-MAR-18
Time Analyzed : 08:26

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
CHAAP-21C-EB-031818	SL2295-25C	HLC10173.	03/24/18	09:15

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sales@katahdinlab.com

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SL2295
Project : Cornhusker Army Ammunition Plant **Column ID :** B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG225143-7	03/20/18	14:54	8.575	
Initial Calibration	WG225143-6	03/20/18	15:26	8.57	
Initial Calibration	WG225143-5	03/20/18	15:58	8.57	
Initial Calibration	WG225143-4	03/20/18	16:30	8.57	
Initial Calibration	WG225143-3	03/20/18	17:01	8.57	
Initial Calibration	WG225143-2	03/20/18	17:33	8.574	
Initial Calibration	WG225143-1	03/20/18	18:05	8.587	
Independent Source	WG225143-8	03/20/18	18:37		
Method Blank Sample	WG225094-1	03/20/18	21:47	8.593	
Laboratory Control S	WG225094-2	03/20/18	22:19	8.594	
CHAAP-21C-LGIA-DPT02	SL2295-1	03/20/18	23:54	8.594	
Continuing Calibrati	WG225143-9	03/21/18	00:26	8.567	
Matrix Spike	WG225094-3	03/21/18	00:58	8.594	
Matrix Spike Duplica	WG225094-4	03/21/18	01:30	8.589	
CHAAP-21C-LGIA-DPT04	SL2295-2	03/21/18	02:02	8.595	
CHAAP-21C-LGIA-DPT06	SL2295-3	03/21/18	02:33	8.585	
CHAAP-21C-LGIA-DPT08	SL2295-4	03/21/18	03:05	8.59	
CHAAP-21C-LGIA-DPT10	SL2295-5	03/21/18	03:37	8.59	
CHAAP-21C-LGIA-DPT12	SL2295-6	03/21/18	04:09	8.59	
CHAAP-21C-LGIA-DPT14	SL2295-7	03/21/18	04:40	8.591	
CHAAP-21C-LGIA-DPT16	SL2295-8	03/21/18	05:12	8.593	
CHAAP-21C-LGIA-DPT18	SL2295-9	03/21/18	05:44	8.595	
Continuing Calibrati	WG225143-10	03/21/18	06:16	8.57	
CHAAP-21C-LGIA-DPT20	SL2295-10	03/21/18	06:48	8.604	
CHAAP-21C-UGIA-DPT01	SL2295-11	03/21/18	07:19	8.618	
CHAAP-21C-UGIA-DPT03	SL2295-12	03/21/18	07:51	8.605	
CHAAP-21C-UGIA-DPT05	SL2295-13	03/21/18	08:23	8.608	
CHAAP-21C-UGIA-DPT07	SL2295-14	03/21/18	08:55	8.605	
CHAAP-21C-UGIA-DPT09	SL2295-15	03/21/18	09:26	8.6	
CHAAP-21C-UGIA-DPT11	SL2295-16	03/21/18	09:58	8.595	
CHAAP-21C-UGIA-DPT13	SL2295-17	03/21/18	10:30	8.591	
CHAAP-21C-UGIA-DPT15	SL2295-18	03/21/18	11:02	8.596	
Continuing Calibrati	WG225143-11	03/21/18	11:34	8.573	
Continuing Calibrati	WG225143-12	03/21/18	13:20	8.549	
Method Blank Sample	WG225144-1	03/21/18	13:52	8.572	
Laboratory Control S	WG225144-2	03/21/18	14:24	8.567	

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : Cornhusker Army Ammunition Plant
Instrument ID : HPLC02

SDG : SL2295
Column ID : B

CHAAP-21C-UGIA-DPT17	SL2295-19	03/21/18	14:55	8.575	
CHAAP-21C-UGIA-DPT19	SL2295-20	03/21/18	15:27	8.573	
CHAAP-21C-LGIA-DPT10	SL2295-22	03/21/18	15:59	8.562	
CHAAP-21C-EB-031718	SL2295-23	03/21/18	16:31	8.564	
CHAAP-21C-UGIA-DPT10	SL2295-24	03/21/18	17:02	8.56	
CHAAP-21C-EB-031818	SL2295-25	03/21/18	17:34	8.569	
Continuing Calibrati	WG225143-13	03/21/18	18:38	8.541	

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SL2295
Project : Cornhusker Army Ammunition Plant
Column ID : B
Instrument ID : HPLC02

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	DNB	
Initial Calibration	WG210620-15	08/01/17	09:37	13.49	
Initial Calibration	WG210620-14	08/01/17	10:27	13.48	
Initial Calibration	WG210620-13	08/01/17	11:16	13.48	
Initial Calibration	WG210620-12	08/01/17	12:05	13.47	
Initial Calibration	WG210620-11	08/01/17	12:54	13.47	
Initial Calibration	WG210620-10	08/01/17	13:44	13.47	
Initial Calibration	WG210620-9	08/01/17	14:33	13.46	
Independent Source	WG210620-16	08/01/17	17:01		
Continuing Calibrati	WG225143-21	03/23/18	16:02	13.50	
Method Blank Sample	WG225094-1C	03/23/18	20:57	13.54	
CHAAP-21C-LGIA-DPT02	SL2295-1C	03/23/18	22:36	13.54	
CHAAP-21C-LGIA-DPT12	SL2295-6C	03/24/18	00:14	13.54	
Continuing Calibrati	WG225143-22	03/24/18	01:03	13.53	
CHAAP-21C-LGIA-DPT14	SL2295-7C	03/24/18	01:52	13.54	
CHAAP-21C-LGIA-DPT16	SL2295-8C	03/24/18	02:42	13.55	
CHAAP-21C-LGIA-DPT18	SL2295-9C	03/24/18	03:31	13.56	
CHAAP-21C-LGIA-DPT20	SL2295-10C	03/24/18	04:20	13.55	
CHAAP-21C-UGIA-DPT03	SL2295-12C	03/24/18	05:09	13.55	
CHAAP-21C-UGIA-DPT11	SL2295-16C	03/24/18	05:58	13.56	
CHAAP-21C-UGIA-DPT13	SL2295-17C	03/24/18	06:47	13.55	
CHAAP-21C-UGIA-DPT15	SL2295-18C	03/24/18	07:36	13.56	
Method Blank Sample	WG225144-1C	03/24/18	08:26	13.56	
CHAAP-21C-EB-031818	SL2295-25C	03/24/18	09:15	13.55	
Continuing Calibrati	WG225143-23	03/24/18	10:04	13.54	

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-1
Client ID: CHAAP-21C-LGIA-DPT02
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10048.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 20-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		120.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10048.D
Report Date: 26-Mar-2018 13:16

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10048.D
Lab Smp Id: SL2295-1 Client Smp ID: HAAP-21C-LGIA-DPT02
Inj Date : 20-MAR-2018 23:54
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-1
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 25
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

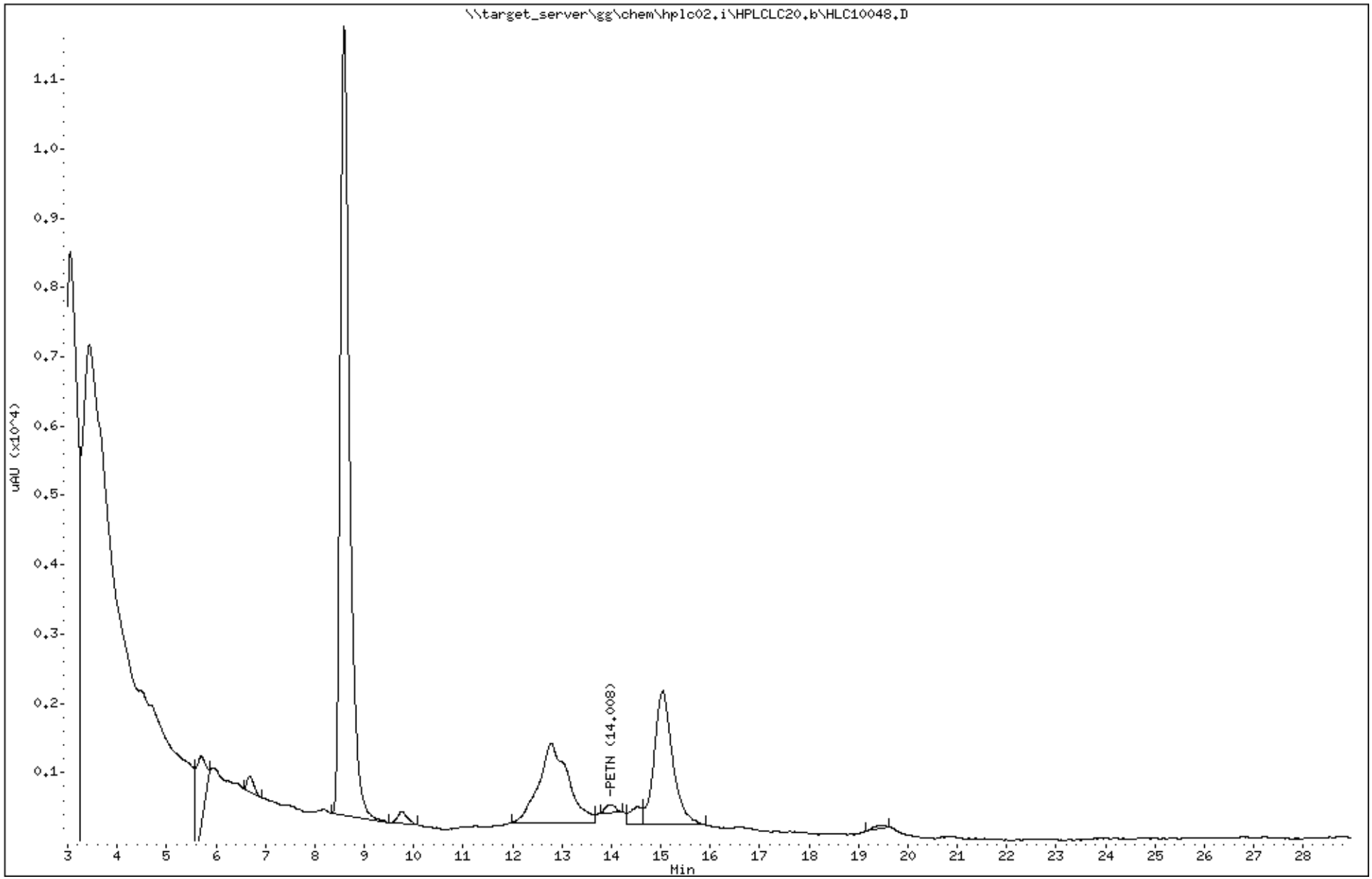
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
~~18 PETN~~	~~14.008~~	~~13.963~~	~~0.045~~	~~111~~	~~0.03860~~	~~0.386(aM)~~	NC

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

2:58 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10048.D
Date : 20-MAR-2018 23:54
Client ID: HAAP-21C-LGIA-DPT02
Instrument: hplc02.i
Sample Info: SL2295-1
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000017

Data File: HLC10048.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10048.D
Lab Smp Id: SL2295-1 Client Smp ID: HAAP-21C-LGIA-DPT02
Inj Date : 20-MAR-2018 23:54
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-1
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 25
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

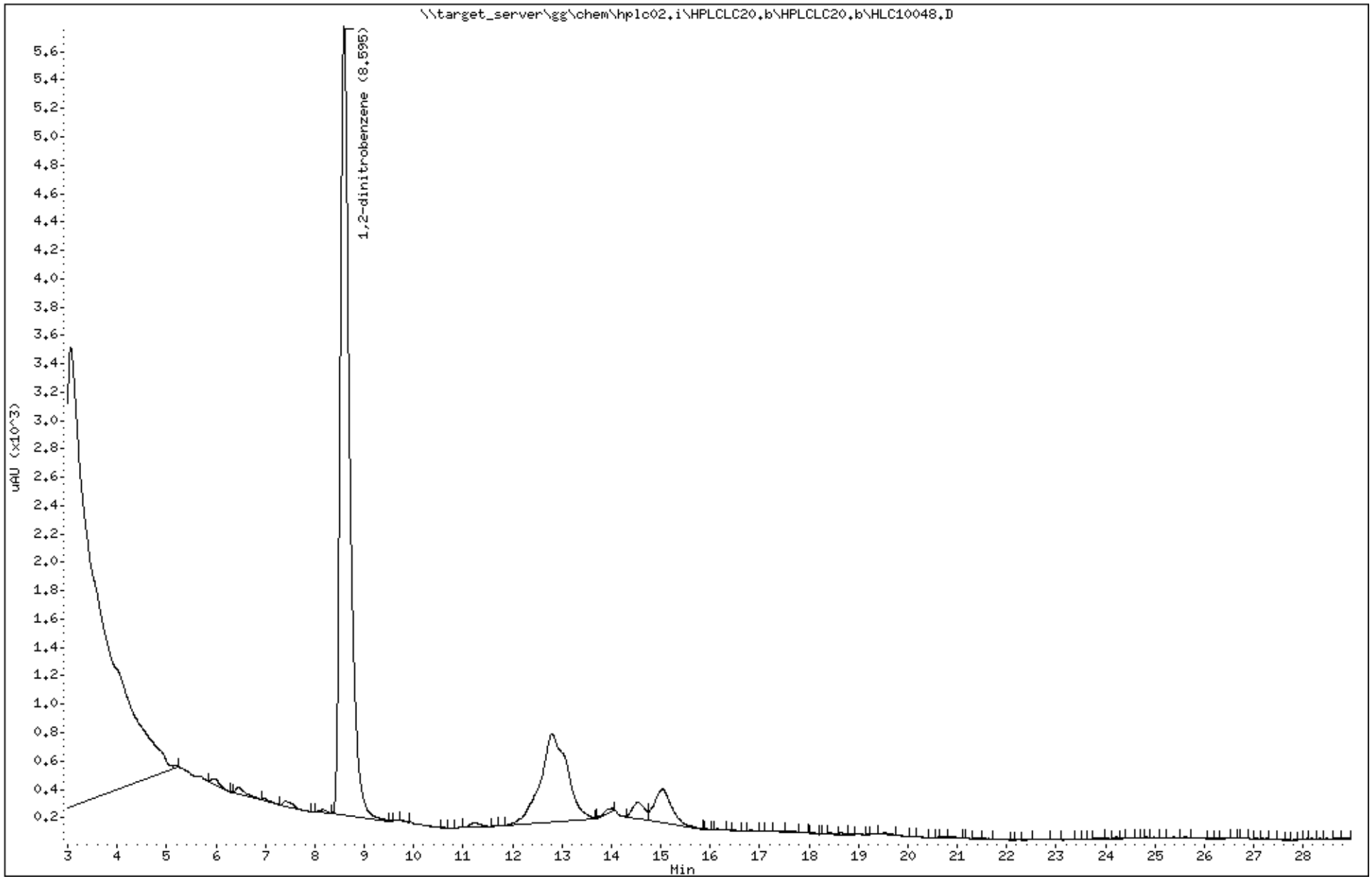
Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.594	8.575	0.019	5564	1.20240	12.0(R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10048.D
Date : 20-MAR-2018 23:54
Client ID: HAAP-21C-LGIA-DPT02 Instrument: hplc02.i
Sample Info: SL2295-1
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000019

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10160.D
Report Date: 26-Mar-2018 13:36

Katahdin Analytical Services

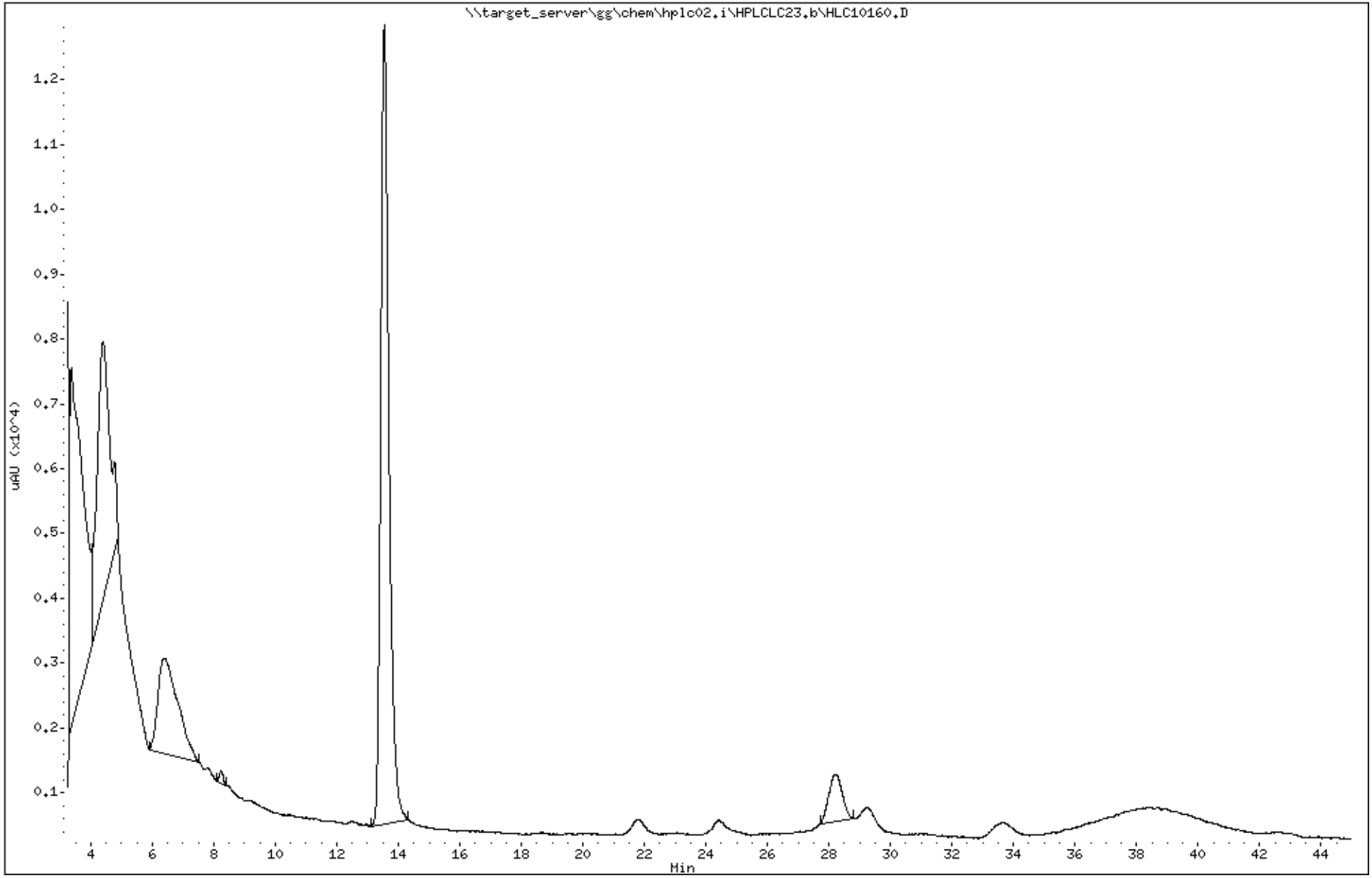
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10160.D
Lab Smp Id: SL2295-1C Client Smp ID: HAAP-21C-LGIA-DPT02
Inj Date : 23-MAR-2018 22:36
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-1C
Misc Info : WG225143,WG225094,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m
Meth Date : 26-Mar-2018 13:35 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 37
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: NGPETN.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10160.D
Date : 23-MAR-2018 22:36
Client ID: HAAP-21C-LGIA-DPT02
Instrument: hplc02.i
Sample Info: SL2295-1C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000021

Data File: HLC10160.D
Report Date: 26-Mar-2018 13:43

Katahdin Analytical Services

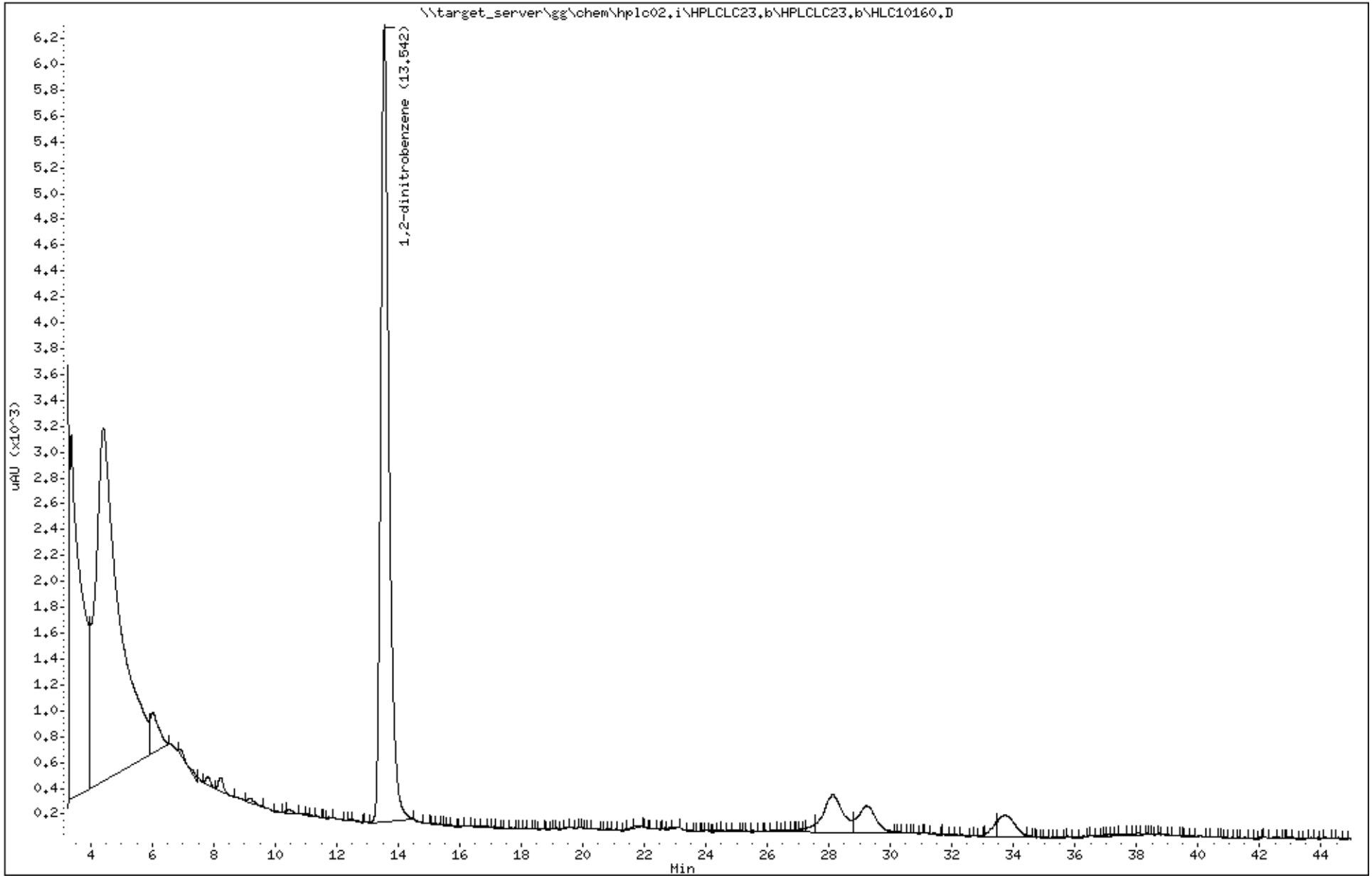
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10160.D
Lab Smp Id: SL2295-1C Client Smp ID: HAAP-21C-LGIA-DPT02
Inj Date : 23-MAR-2018 22:36
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-1C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 37
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.541	13.504	0.037	6165	1.16393	11.6	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10160.D
Date : 23-MAR-2018 22:36
Client ID: HAAP-21C-LGIA-DPT02
Instrument: hplc02.i
Sample Info: SL2295-1C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000023

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-2
Client ID: CHAAP-21C-LGIA-DPT04
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10052.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	UM	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		102.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10052.D
Report Date: 26-Mar-2018 13:16

Katahdin Analytical Services

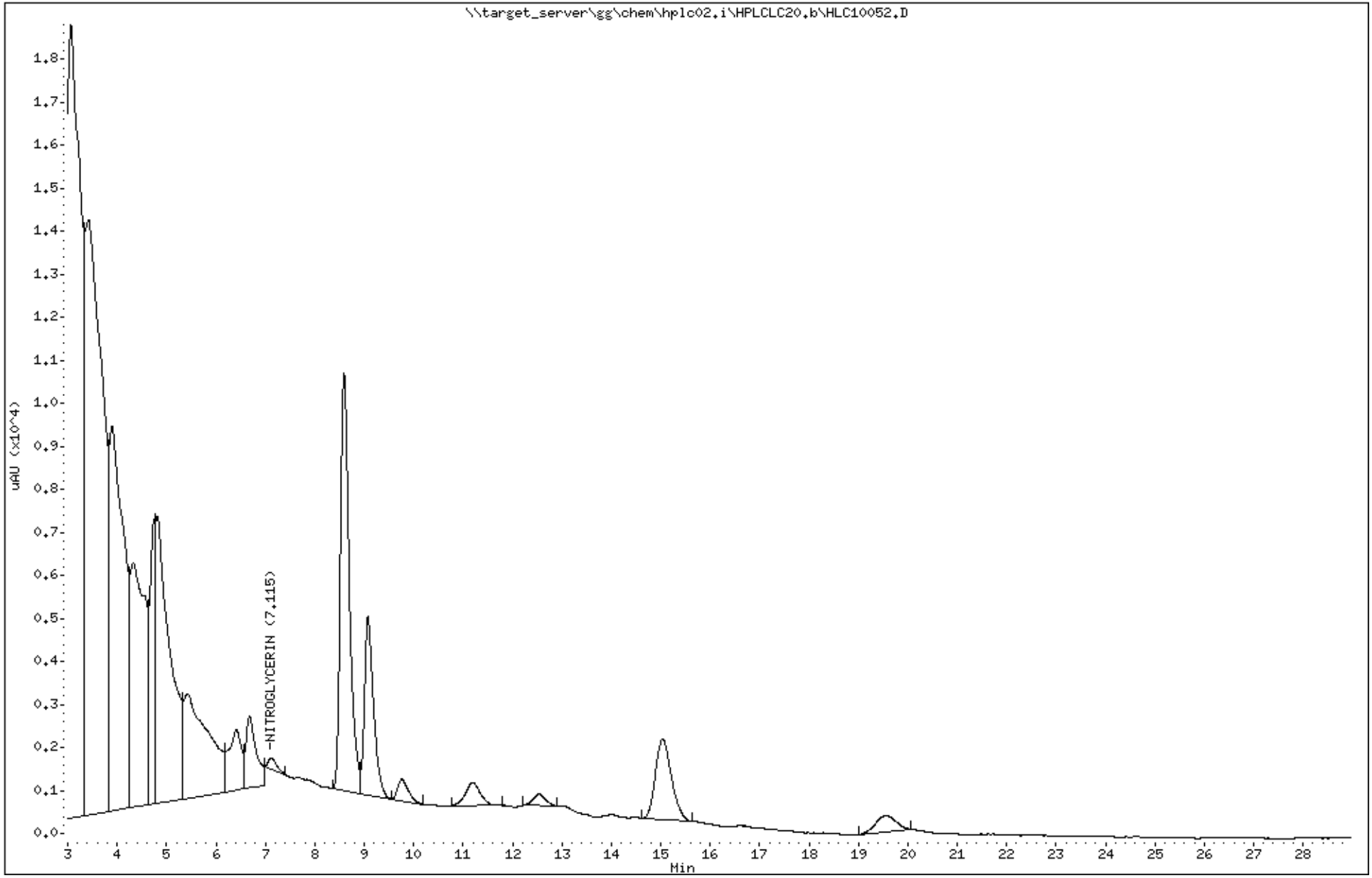
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10052.D
Lab Smp Id: SL2295-2 Client Smp ID: HAAP-21C-LGIA-DPT04
Inj Date : 21-MAR-2018 02:02
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-2
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 29
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10052.D
Date : 21-MAR-2018 02:02
Client ID: HAAP-21C-LGIA-DPT04
Instrument: hplc02.i
Sample Info: SL2295-2
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000026

Data File: HLC10052.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10052.D
Lab Smp Id: SL2295-2 Client Smp ID: HAAP-21C-LGIA-DPT04
Inj Date : 21-MAR-2018 02:02
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-2
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 29
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

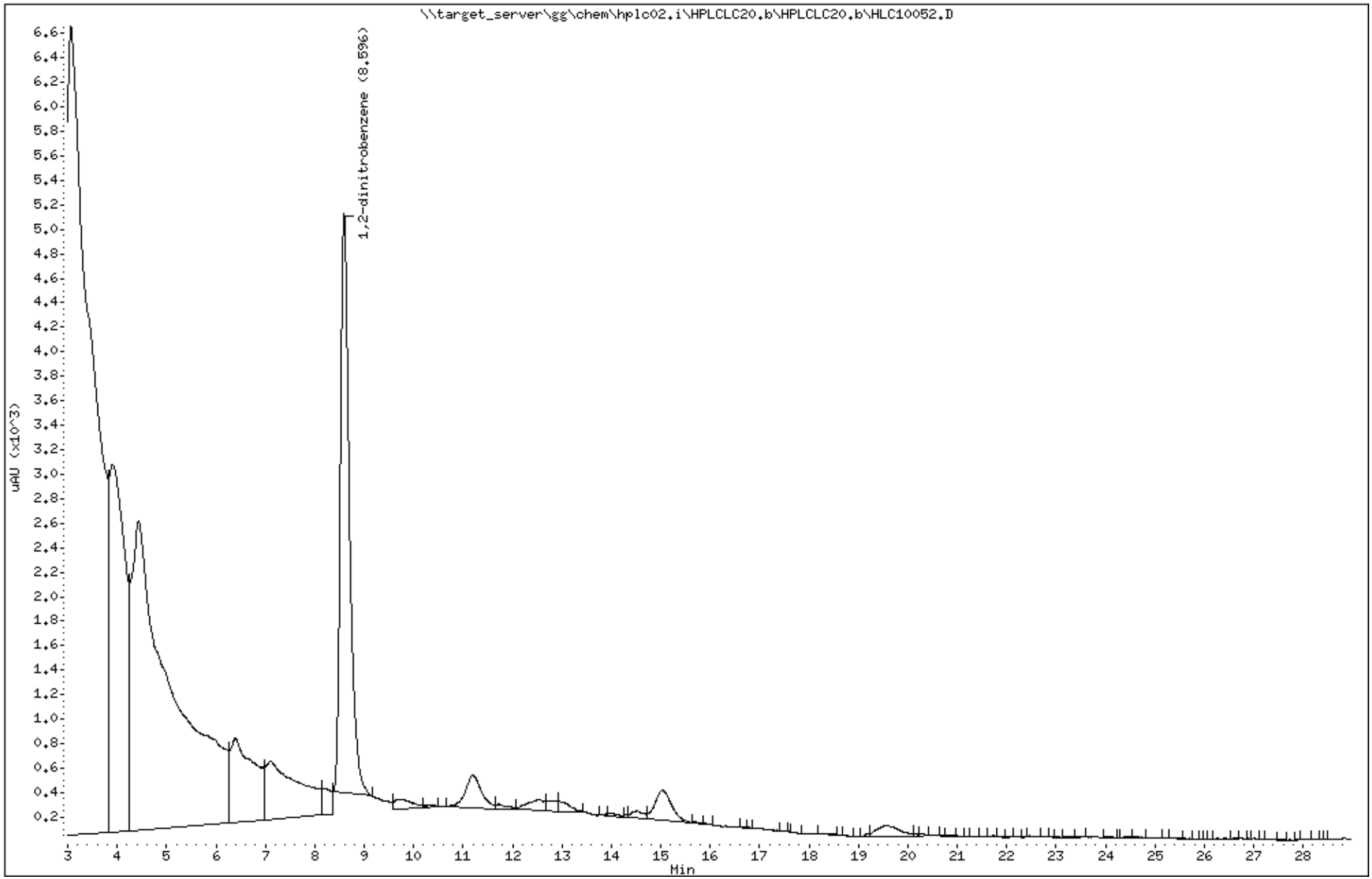
					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.595	8.575	0.020	4731	1.02238	10.2(M)	M2

QC Flag Legend

M - Compound response manually integrated.

2:59 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10052.D
Date : 21-MAR-2018 02:02
Client ID: HAAP-21C-LGIA-DPT04 Instrument: hplc02.i
Sample Info: SL2295-2
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000028

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-3
Client ID: CHAAP-21C-LGIA-DPT06
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10053.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		90.7	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10053.D
Report Date: 26-Mar-2018 13:16

Katahdin Analytical Services

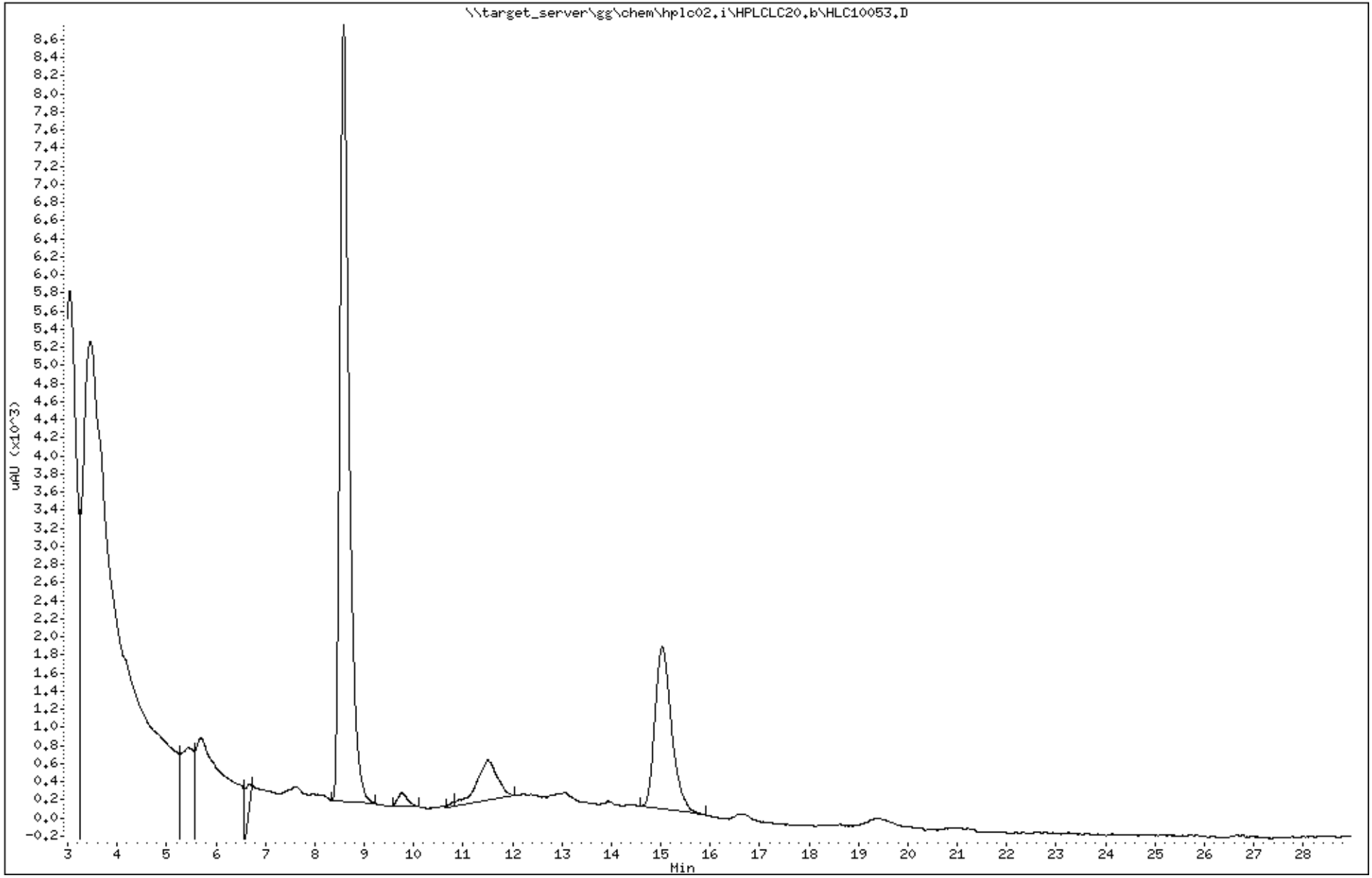
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10053.D
Lab Smp Id: SL2295-3 Client Smp ID: HAAP-21C-LGIA-DPT06
Inj Date : 21-MAR-2018 02:33
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-3
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 30
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10053.D
Date : 21-MAR-2018 02:33
Client ID: HAAP-21C-LGIA-DPT06
Instrument: hplc02.i
Sample Info: SL2295-3
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000031

Data File: HLC10053.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

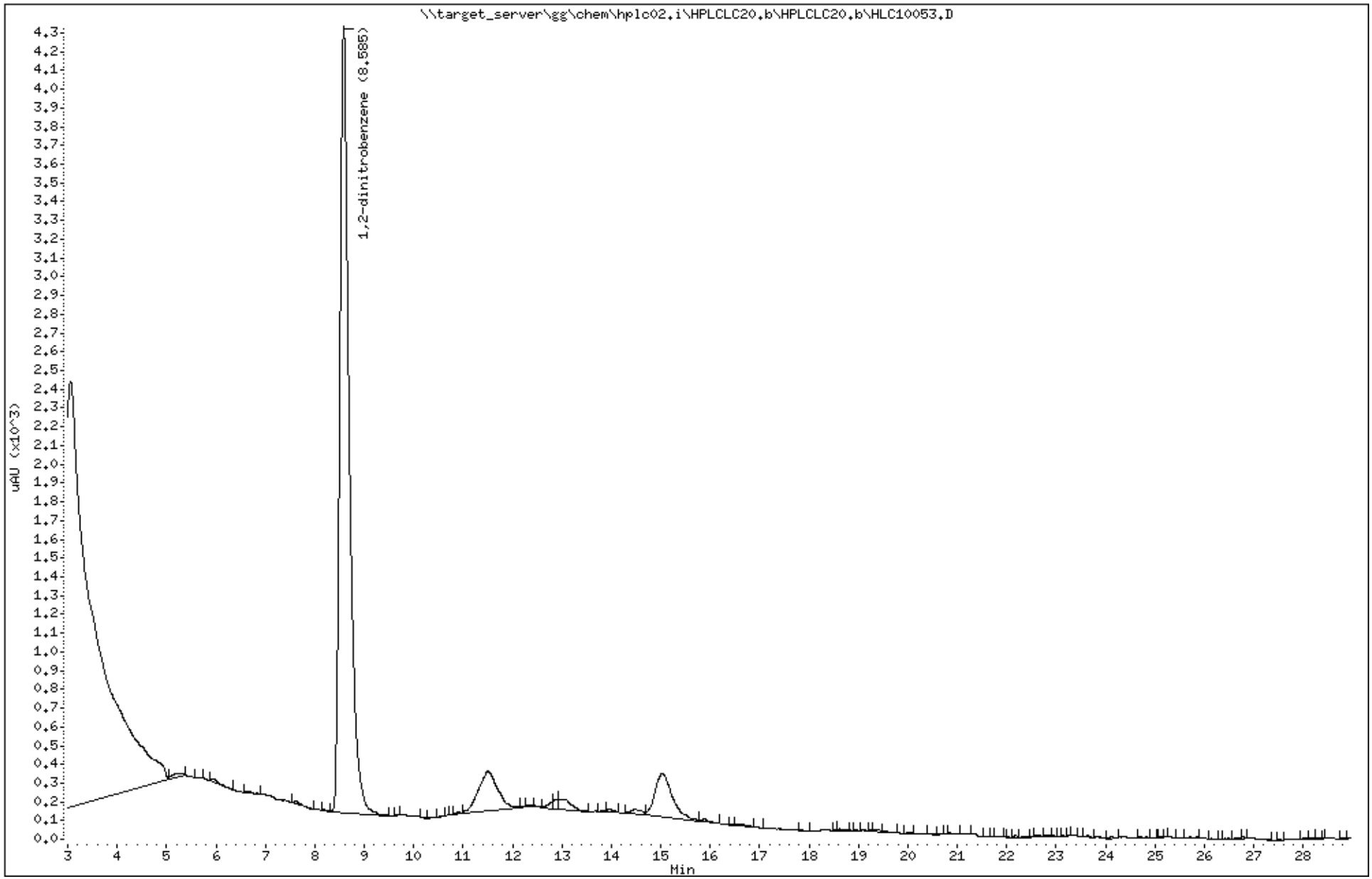
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10053.D
Lab Smp Id: SL2295-3 Client Smp ID: HAAP-21C-LGIA-DPT06
Inj Date : 21-MAR-2018 02:33
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-3
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 30
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.585	8.575	0.010	4196	0.90677	9.07	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10053.D
Date : 21-MAR-2018 02:33
Client ID: HAAP-21C-LGIA-DPT06 Instrument: hplc02.i
Sample Info: SL2295-3
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000033

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-4
Client ID: CHAAP-21C-LGIA-DPT08
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10054.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		97.4	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10054.D
Report Date: 26-Mar-2018 13:16

Katahdin Analytical Services

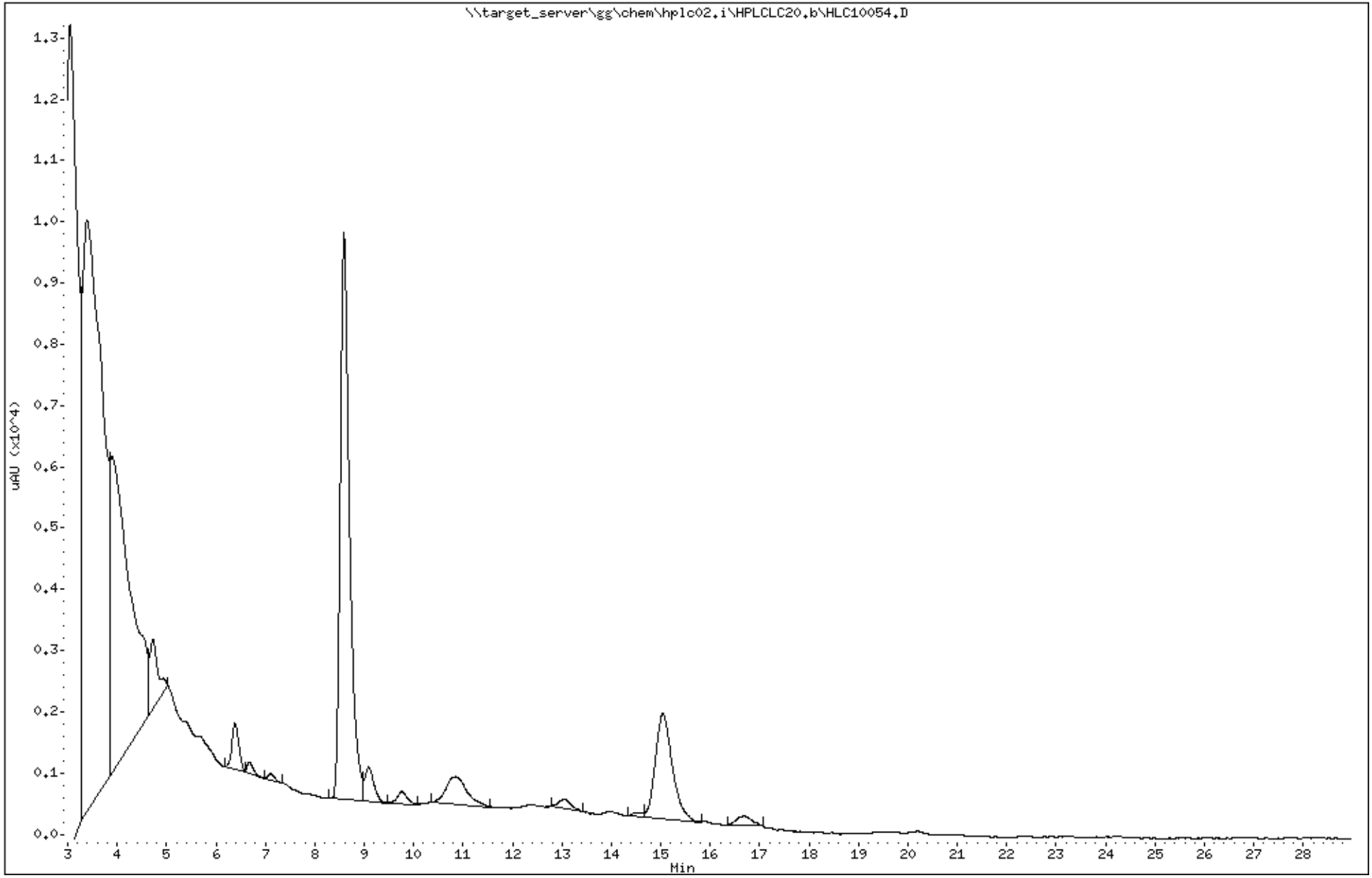
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10054.D
Lab Smp Id: SL2295-4 Client Smp ID: HAAP-21C-LGIA-DPT08
Inj Date : 21-MAR-2018 03:05
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-4
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 31
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10054.D
Date : 21-MAR-2018 03:05
Client ID: HAAP-21C-LGIA-DPT08
Instrument: hplc02.i
Sample Info: SL2295-4
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000036

Data File: HLC10054.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

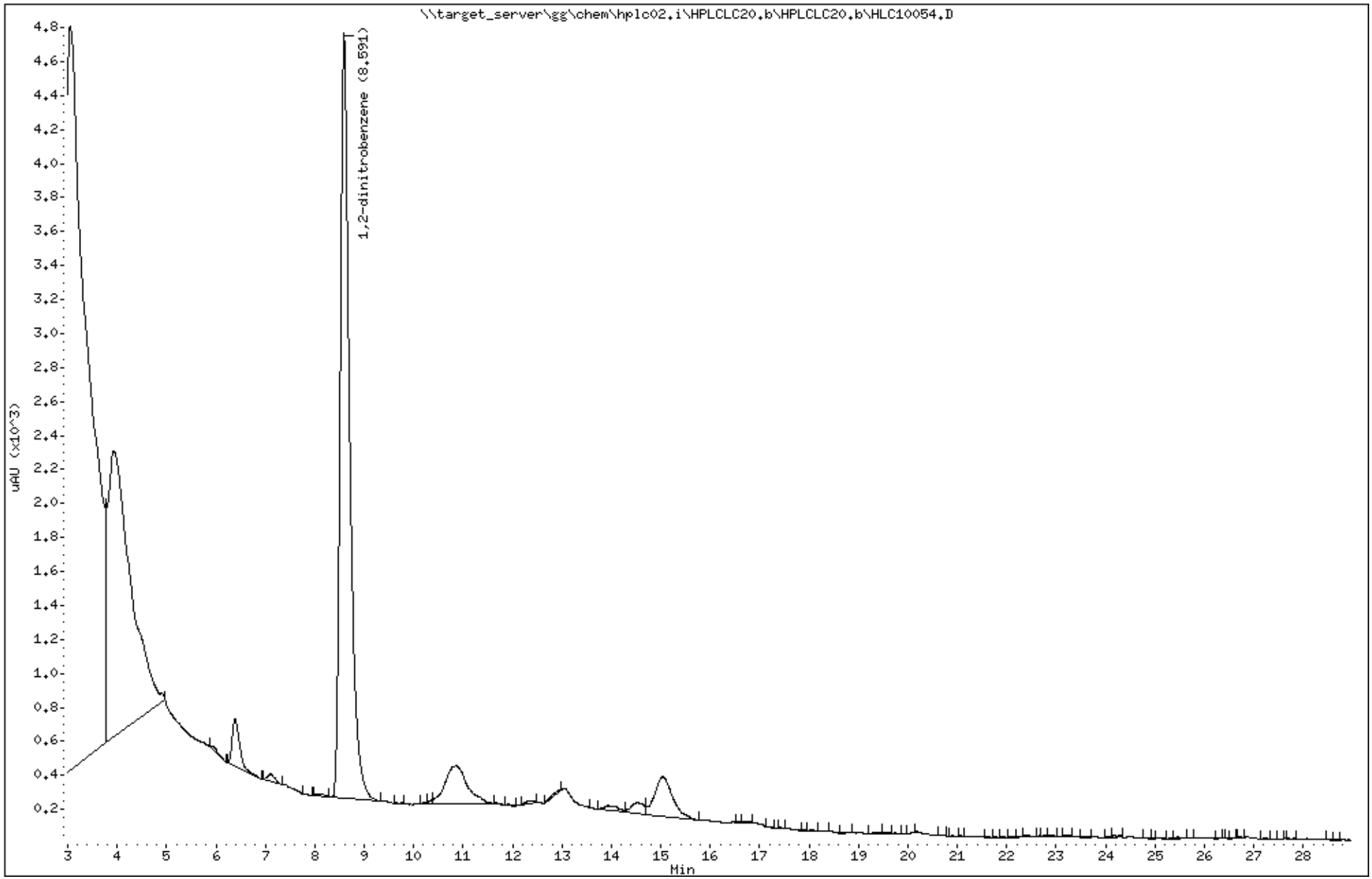
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10054.D
Lab Smp Id: SL2295-4 Client Smp ID: HAAP-21C-LGIA-DPT08
Inj Date : 21-MAR-2018 03:05
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-4
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 31
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.590	8.575	0.015	4506	0.97376	9.74	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10054.D
Date : 21-MAR-2018 03:05
Client ID: HAAP-21C-LGIA-DPT08 Instrument: hplc02.i
Sample Info: SL2295-4
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000038

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-5
Client ID: CHAAP-21C-LGIA-DPT10
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10055.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.2	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10055.D
Report Date: 26-Mar-2018 13:16

Katahdin Analytical Services

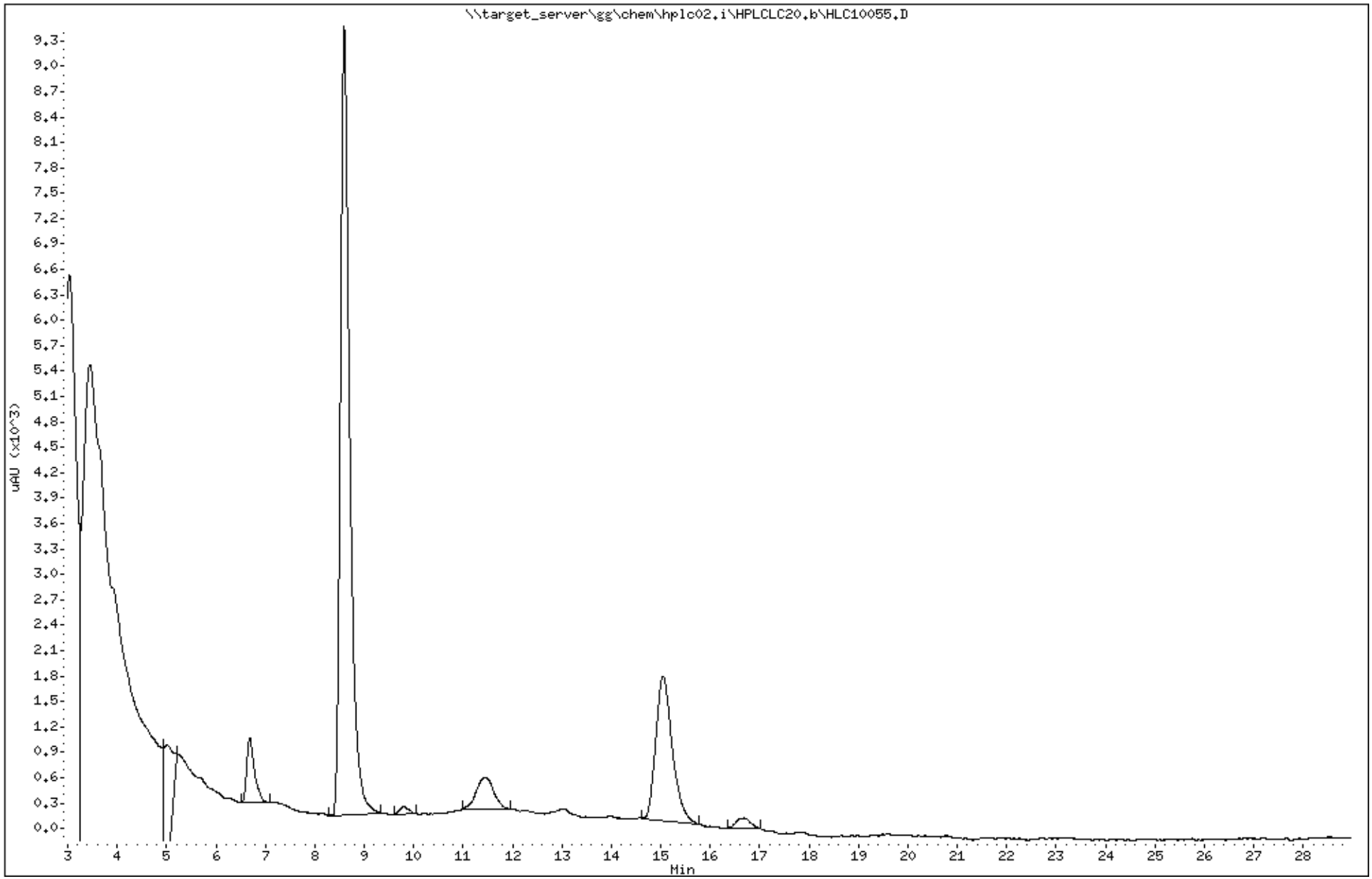
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10055.D
Lab Smp Id: SL2295-5 Client Smp ID: HAAP-21C-LGIA-DPT10
Inj Date : 21-MAR-2018 03:37
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-5
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 32
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10055.D
Date : 21-MAR-2018 03:37
Client ID: HAAP-21C-LGIA-DPT10
Instrument: hplc02.i
Sample Info: SL2295-5
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000041

Data File: HLC10055.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

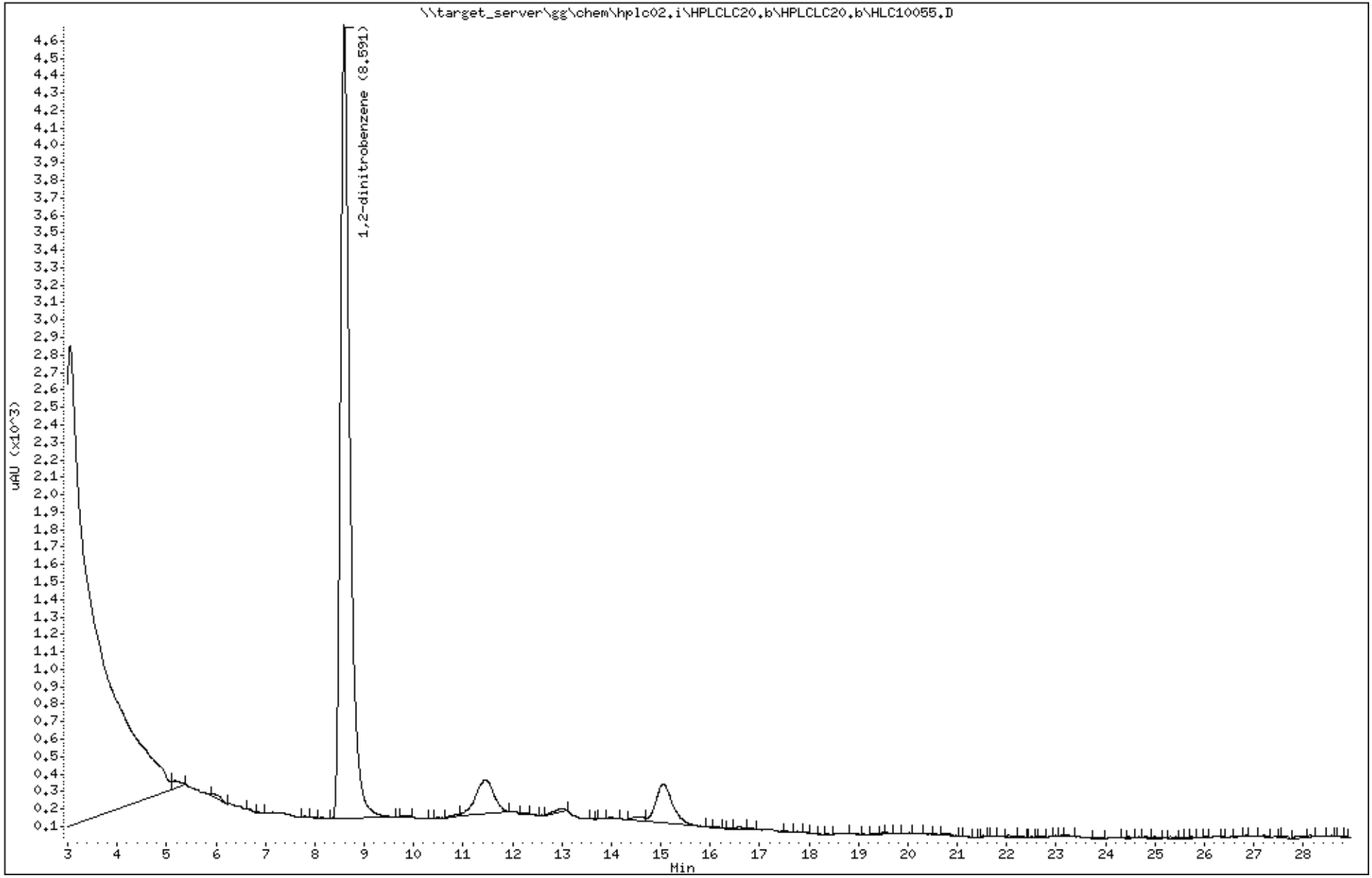
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10055.D
Lab Smp Id: SL2295-5 Client Smp ID: HAAP-21C-LGIA-DPT10
Inj Date : 21-MAR-2018 03:37
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-5
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 32
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.590	8.575	0.015	4546	0.98240	9.82	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10055.D
Date : 21-MAR-2018 03:37
Client ID: HAAP-21C-LGIA-DPT10
Instrument: hplc02.i
Sample Info: SL2295-5
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000043

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-6
Client ID: CHAAP-21C-LGIA-DPT12
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10056.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		101.	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10056.D
Report Date: 26-Mar-2018 13:16

Katahdin Analytical Services

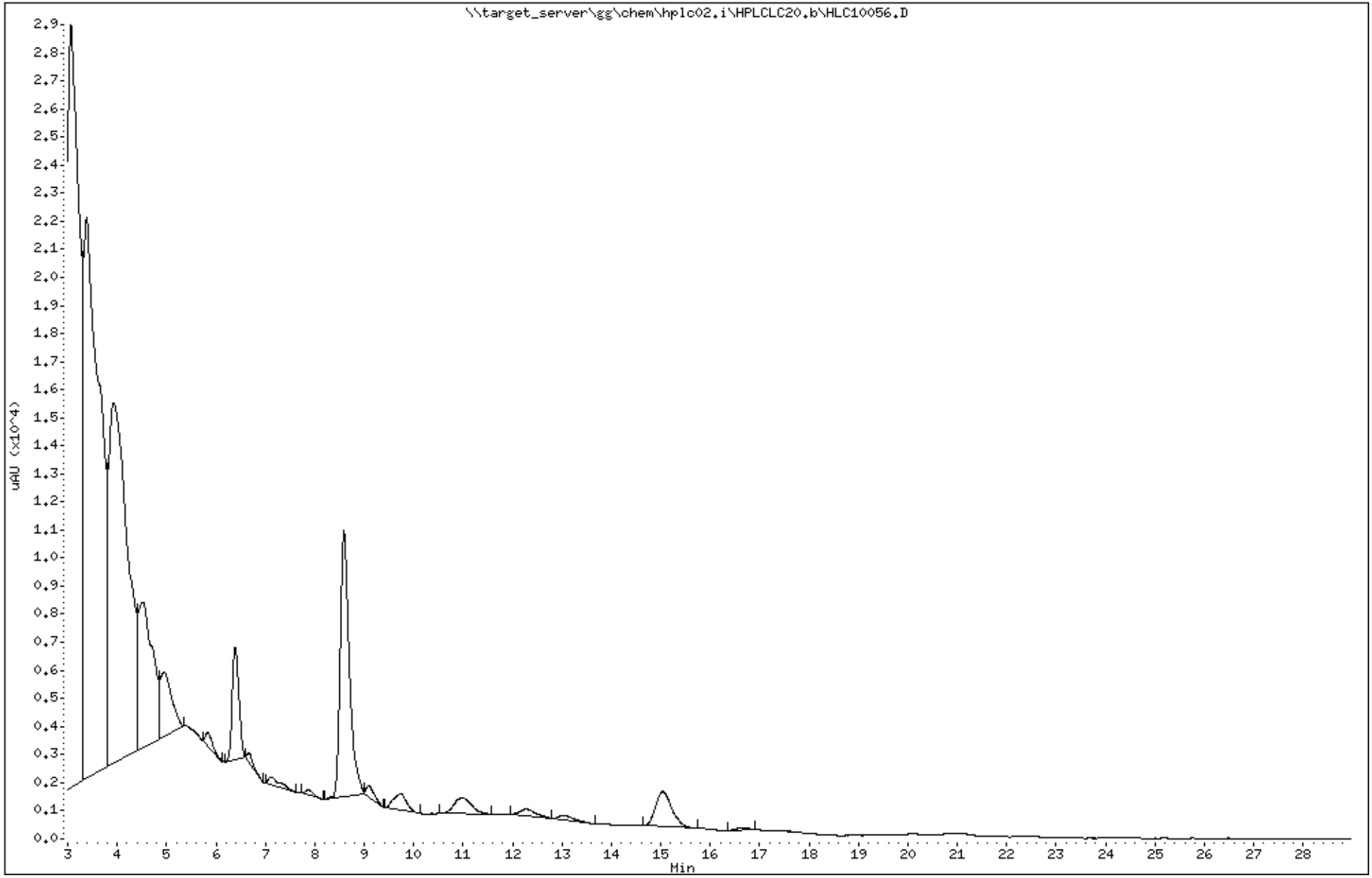
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10056.D
Lab Smp Id: SL2295-6 Client Smp ID: HAAP-21C-LGIA-DPT12
Inj Date : 21-MAR-2018 04:09
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-6
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10056.D
Date : 21-MAR-2018 04:09
Client ID: HAAP-21C-LGIA-DPT12
Instrument: hplc02.i
Sample Info: SL2295-6
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000046

Data File: HLC10056.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10056.D
Lab Smp Id: SL2295-6 Client Smp ID: HAAP-21C-LGIA-DPT12
Inj Date : 21-MAR-2018 04:09
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-6
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 33
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
~~4 RDX~~	~~4.837~~	~~4.989~~	~~-0.152~~	~~0~~	~~0.00587~~	~~0.0587(aM)~~	~~M9~~
$ 2 1,2-dinitrobenzene	8.590	8.575	0.015	4683	1.01201	10.1	
~~6 1,3-dinitrobenzene~~	~~12.317~~	~~12.315~~	~~0.002~~	~~94~~	~~0.01263~~	~~0.126(a)~~	

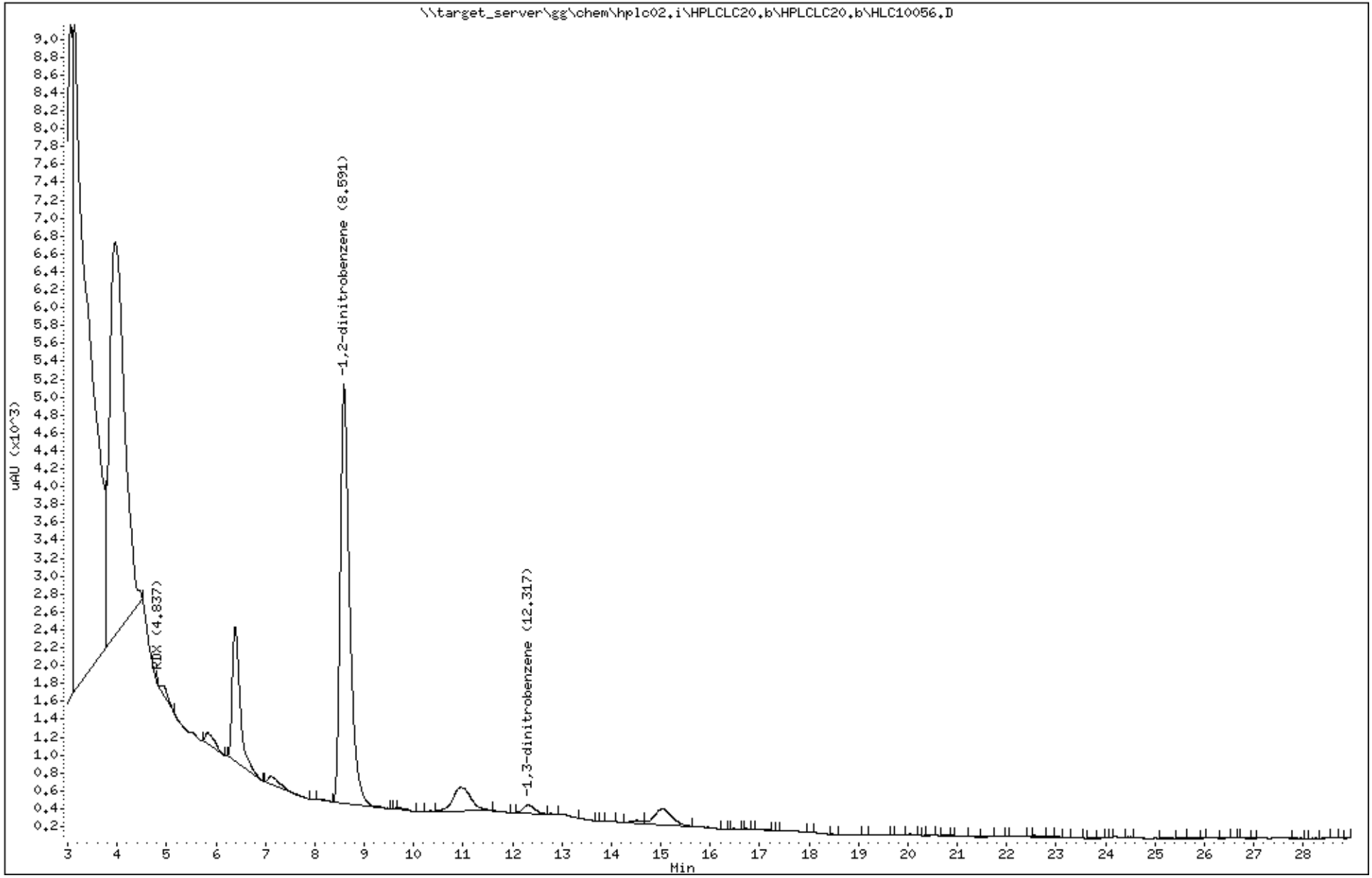
NC

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

3:00 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10056.D
Date : 21-MAR-2018 04:09
Client ID: HAAP-21C-LGIA-DPT12 Instrument: hplc02.i
Sample Info: SL2295-6
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000048

Data File: HLC10162.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

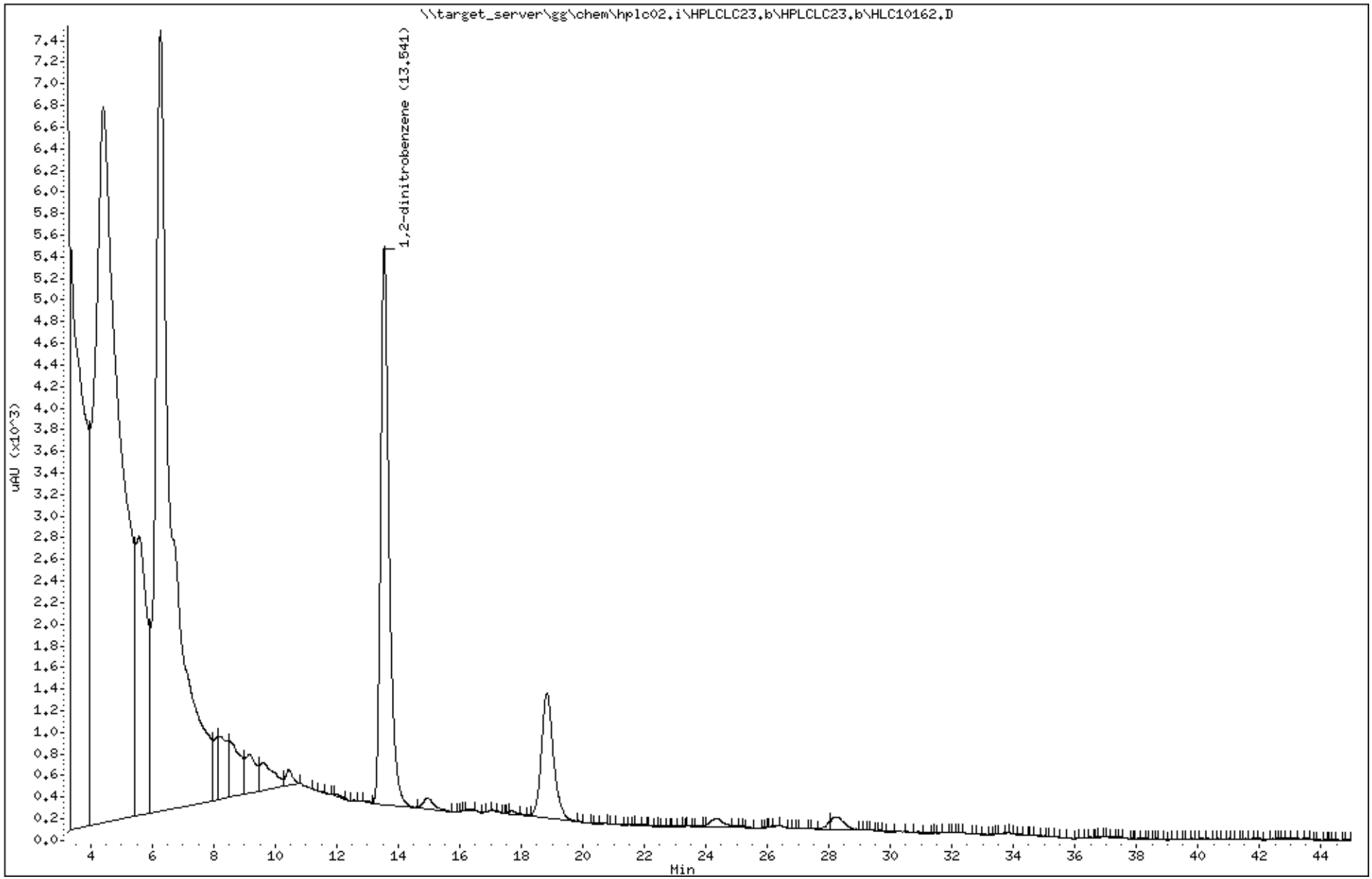
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10162.D
Lab Smp Id: SL2295-6C Client Smp ID: HAAP-21C-LGIA-DPT12
Inj Date : 24-MAR-2018 00:14
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-6C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 39
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
Compounds	RT	EXP RT	DLT RT	RESPONSE			REVIEW CODE
$ 2 1,2-dinitrobenzene	13.541	13.504	0.037	5167	0.97515	9.75	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10162.D
Date : 24-MAR-2018 00:14
Client ID: HAAP-21C-LGIA-DPT12
Instrument: hplc02.i
Sample Info: SL2295-6C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000050

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-7
Client ID: CHAAP-21C-LGIA-DPT14
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10057.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		96.8	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10057.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

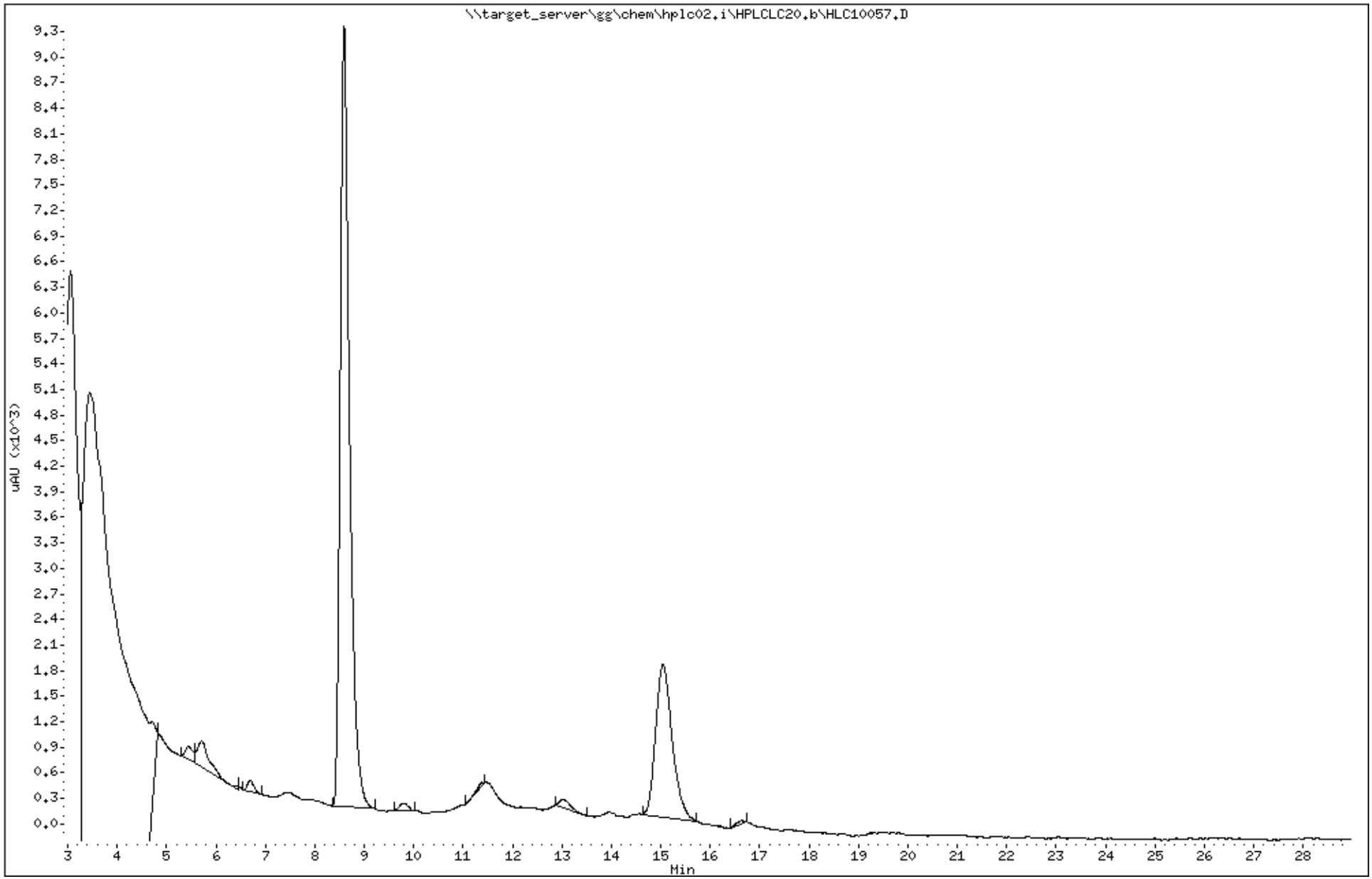
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10057.D
Lab Smp Id: SL2295-7 Client Smp ID: HAAP-21C-LGIA-DPT14
Inj Date : 21-MAR-2018 04:40
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-7
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 34
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10057.D
Date : 21-MAR-2018 04:40
Client ID: HAAP-21C-LGIA-DPT14
Instrument: hplc02.i
Sample Info: SL2295-7
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000053

Data File: HLC10057.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10057.D
Lab Smp Id: SL2295-7 Client Smp ID: HAAP-21C-LGIA-DPT14
Inj Date : 21-MAR-2018 04:40
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-7
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 34
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

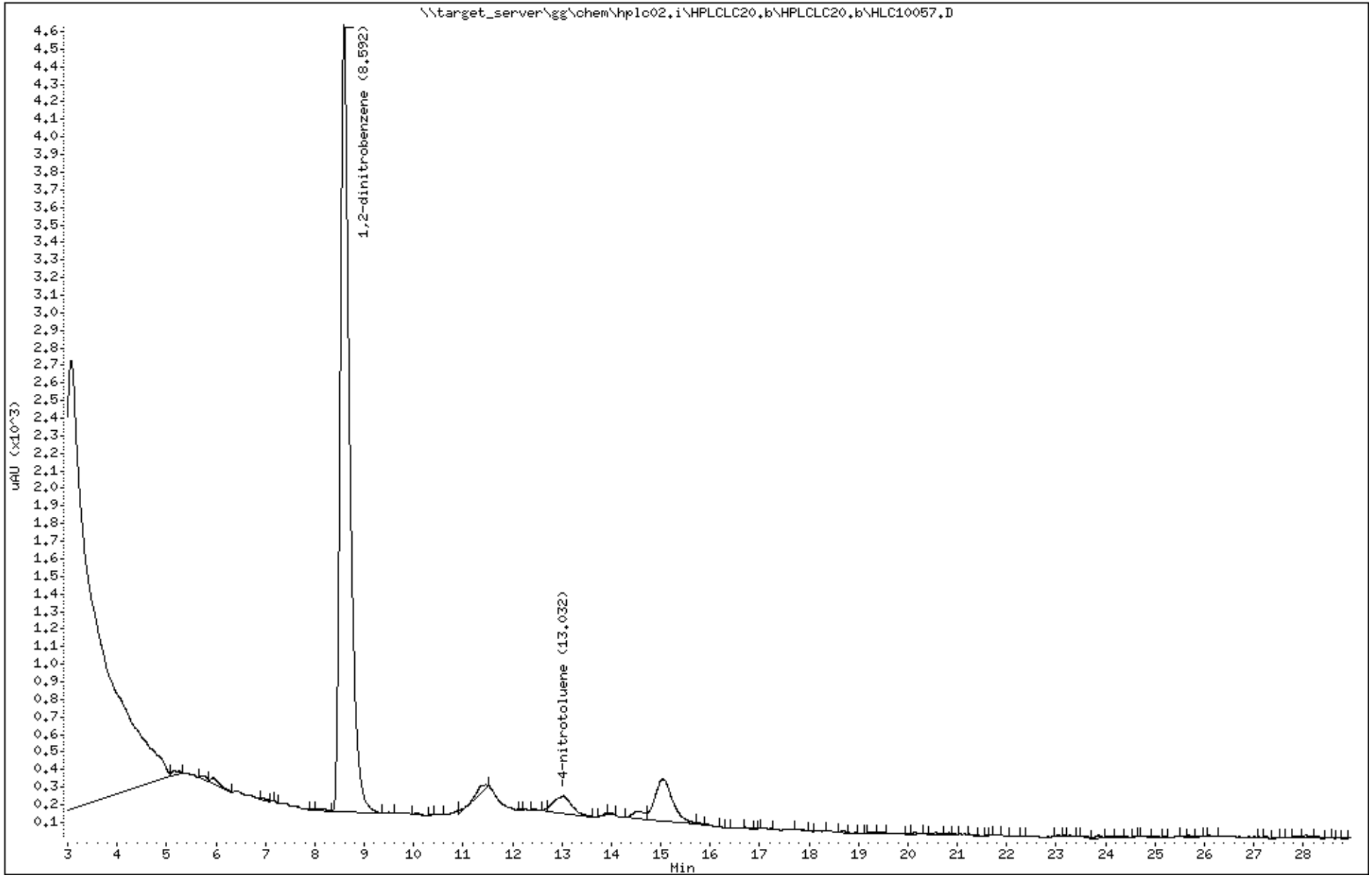
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.591	8.575	0.016	4479	0.96792	9.68	
~~16 4-nitrotoluene~~	~~13.031~~	~~13.022~~	~~0.009~~	~~99~~	~~0.04226~~	~~0.423~~	NC

3:01 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10057.D
Date : 21-MAR-2018 04:40
Client ID: HAAP-21C-LGIA-DPT14 Instrument: hplc02.i
Sample Info: SL2295-7
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000055

Data File: HLC10164.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

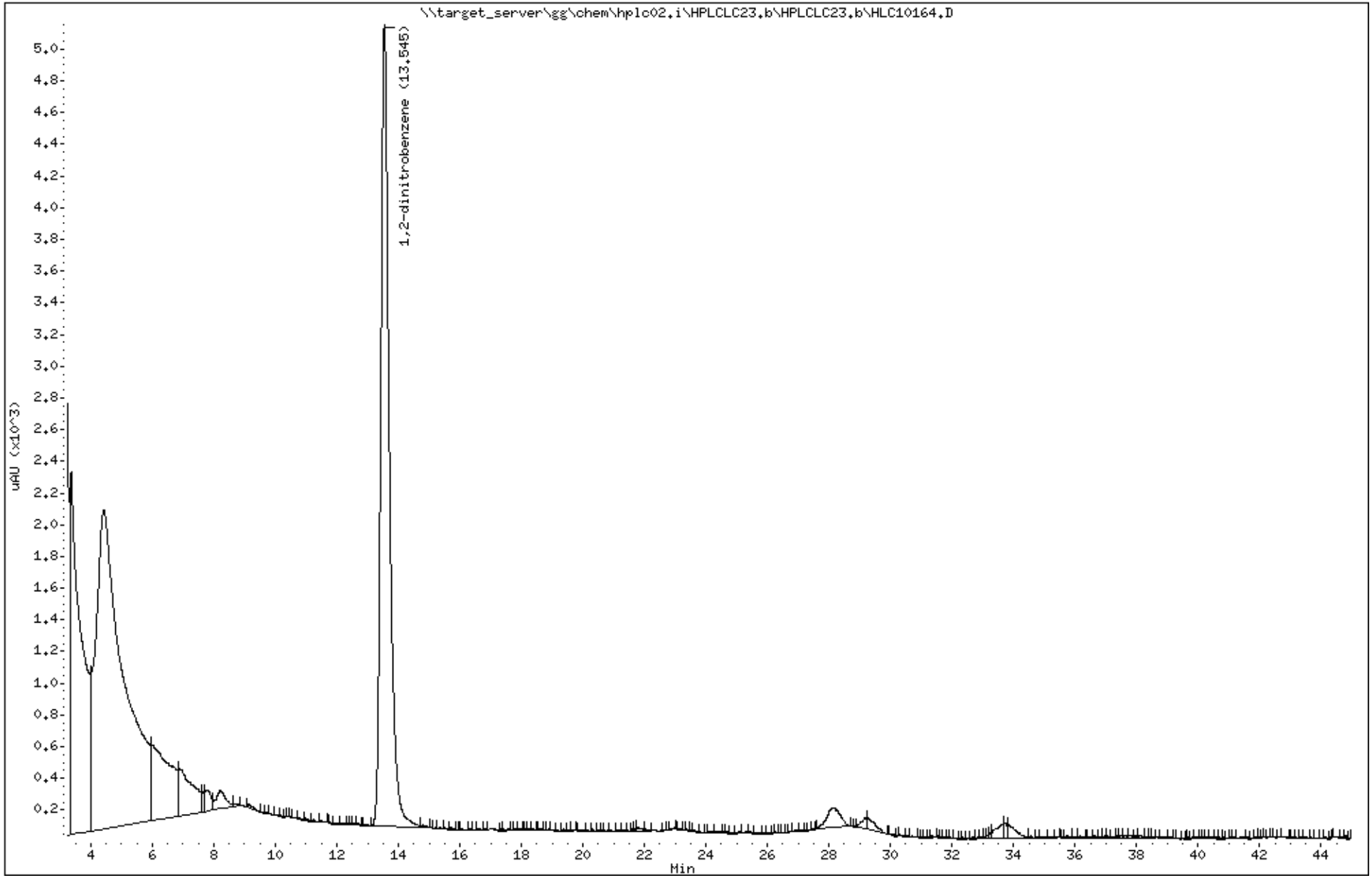
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10164.D
Lab Smp Id: SL2295-7C Client Smp ID: HAAP-21C-LGIA-DPT14
Inj Date : 24-MAR-2018 01:52
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-7C
Misc Info : WG225143,WG225094,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 41
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.544	13.504	0.040	5059	0.95472	9.55	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10164.D
Date : 24-MAR-2018 01:52
Client ID: HAAP-21C-LGIA-DPT14
Instrument: hplc02.i
Sample Info: SL2295-7C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000057

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-8
Client ID: CHAAP-21C-LGIA-DPT16
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10058.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		99.4	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10058.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10058.D
Lab Smp Id: SL2295-8 Client Smp ID: HAAP-21C-LGIA-DPT16
Inj Date : 21-MAR-2018 05:12
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-8
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 35
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

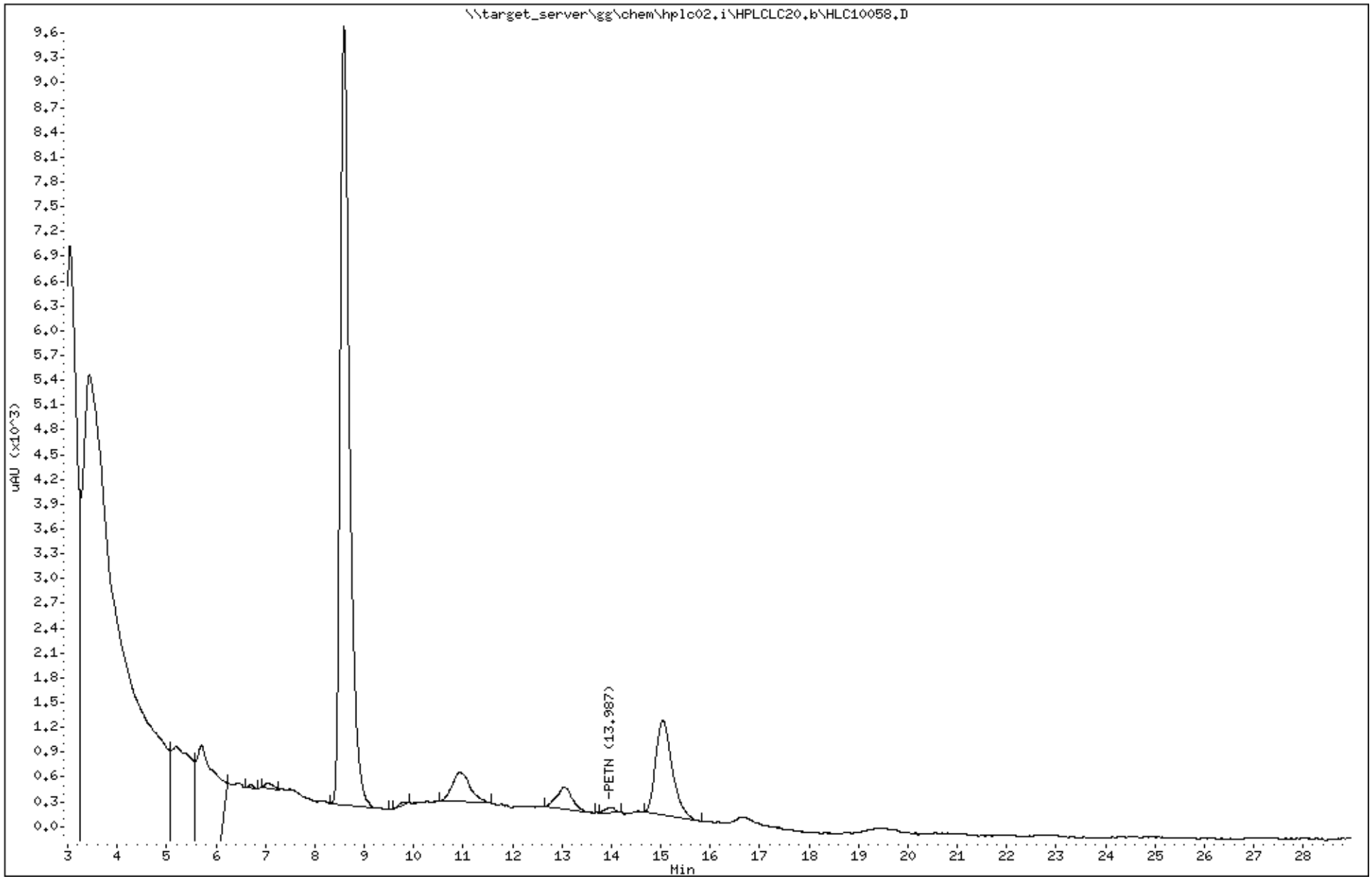
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
~~18 PETN~~	~~13.987~~	~~13.963~~	~~0.024~~	~~67~~	~~0.02330~~	~~0.233(a)~~	NC

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

3:01 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10058.D
Date : 21-MAR-2018 05:12
Client ID: HAAP-21C-LGIA-DPT16
Instrument: hplc02.i
Sample Info: SL2295-8
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000060

Data File: HLC10058.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10058.D
Lab Smp Id: SL2295-8 Client Smp ID: HAAP-21C-LGIA-DPT16
Inj Date : 21-MAR-2018 05:12
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-8
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 35
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

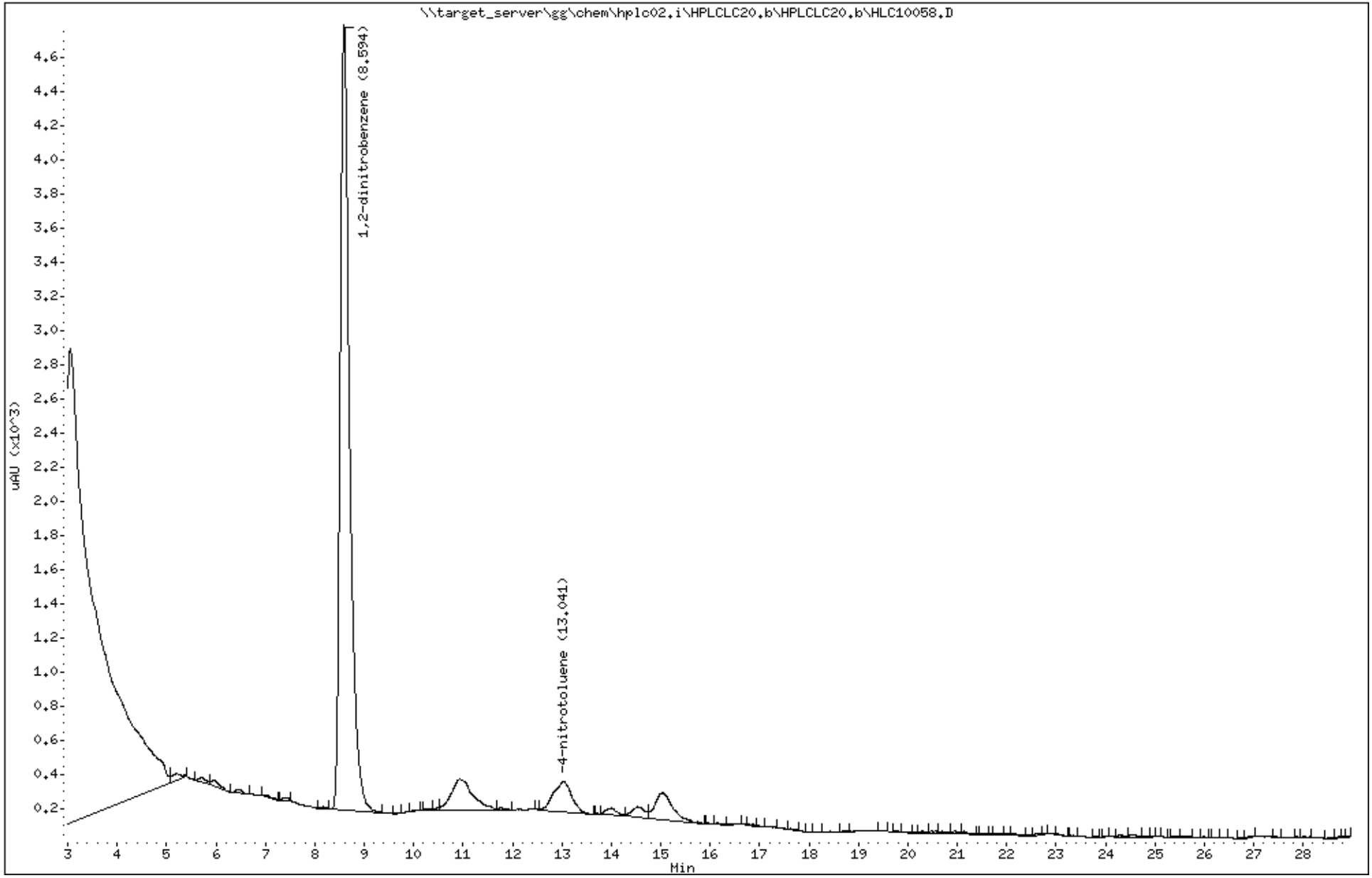
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.593	8.575	0.018	4602	0.99450	9.94	
~~16 4-nitrotoluene~~	~~13.040~~	~~13.022~~	~~0.018~~	~~181~~	~~0.07727~~	~~0.773~~	NC

3:01 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10058.D
Date : 21-MAR-2018 05:12
Client ID: HAAP-21C-LGIA-DPT16 Instrument: hplc02.i
Sample Info: SL2295-8
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000062

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10165.D
Report Date: 26-Mar-2018 13:36

Katahdin Analytical Services

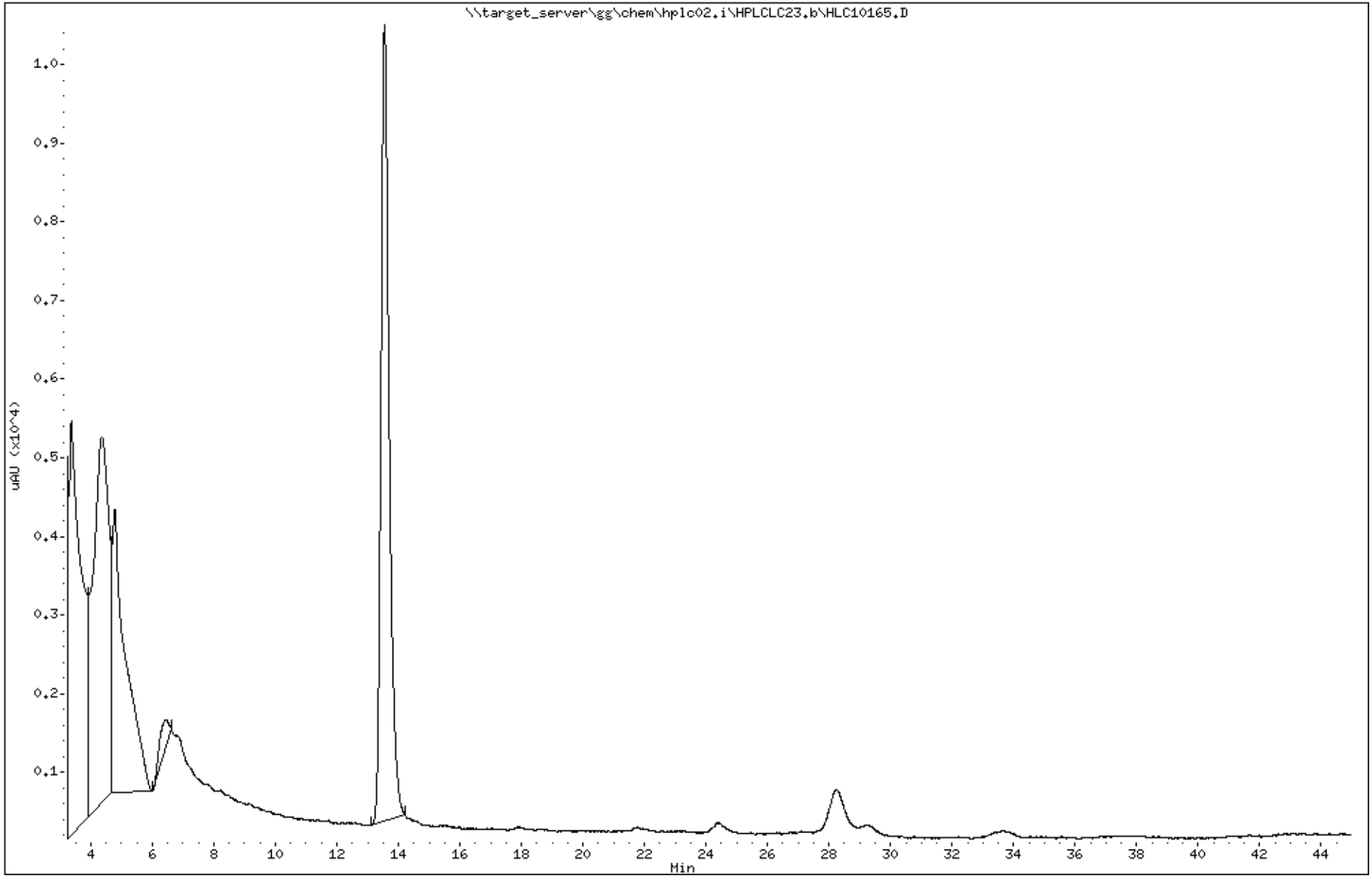
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10165.D
Lab Smp Id: SL2295-8C Client Smp ID: HAAP-21C-LGIA-DPT16
Inj Date : 24-MAR-2018 02:42
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-8C
Misc Info : WG225143,WG225094,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m
Meth Date : 26-Mar-2018 13:35 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 42
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: NGPETN.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10165.D
Date : 24-MAR-2018 02:42
Client ID: HAAP-21C-LGIA-DPT16
Instrument: hplc02.i
Sample Info: SL2295-8C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000064

Data File: HLC10165.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

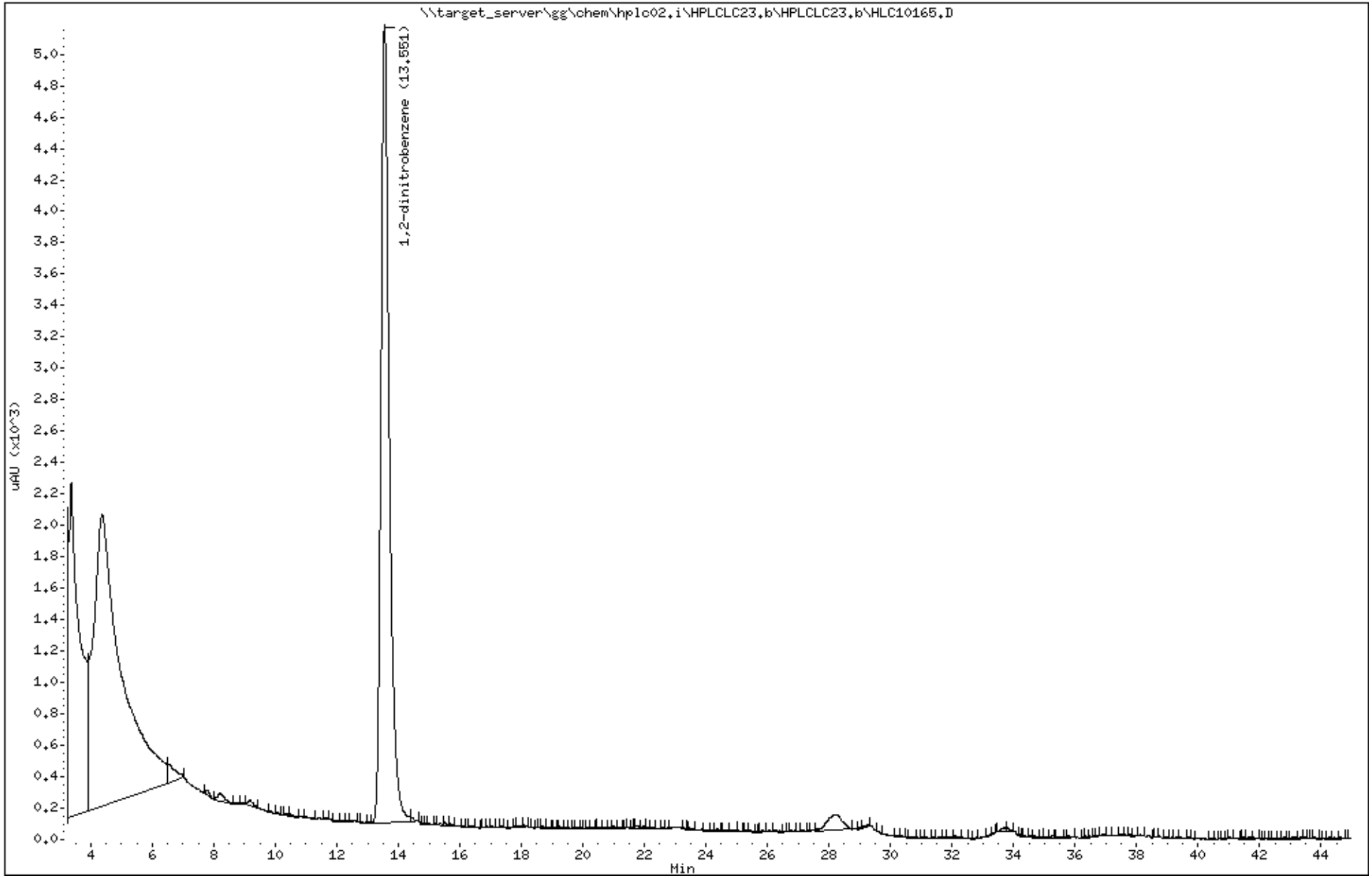
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10165.D
Lab Smp Id: SL2295-8C Client Smp ID: HAAP-21C-LGIA-DPT16
Inj Date : 24-MAR-2018 02:42
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-8C
Misc Info : WG225143,WG225094,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 42
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.551	13.504	0.047	5082	0.95907	9.59	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10165.D
Date : 24-MAR-2018 02:42
Client ID: HAAP-21C-LGIA-DPT16 Instrument: hplc02.i
Sample Info: SL2295-8C
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E2 Column diameter: 4.60



Katahdin Analytical Services 2000066

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-9
Client ID: CHAAP-21C-LGIA-DPT18
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10059.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.8	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10059.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

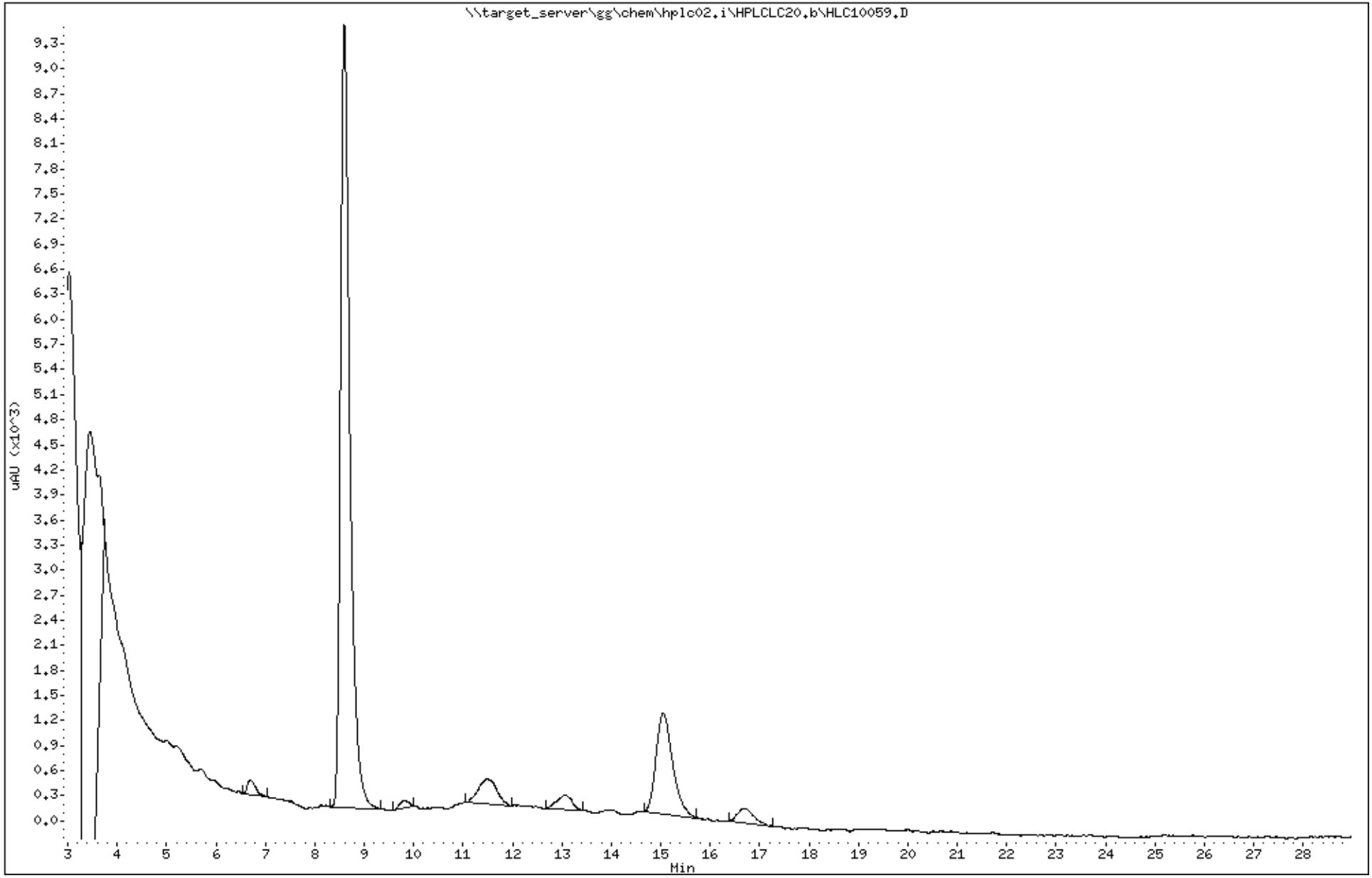
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10059.D
Lab Smp Id: SL2295-9 Client Smp ID: HAAP-21C-LGIA-DPT18
Inj Date : 21-MAR-2018 05:44
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-9
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 36
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10059.D
Date : 21-MAR-2018 05:44
Client ID: HAAP-21C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: SL2295-9
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000069

Data File: HLC10059.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10059.D
Lab Smp Id: SL2295-9 Client Smp ID: HAAP-21C-LGIA-DPT18
Inj Date : 21-MAR-2018 05:44
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-9
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 36
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

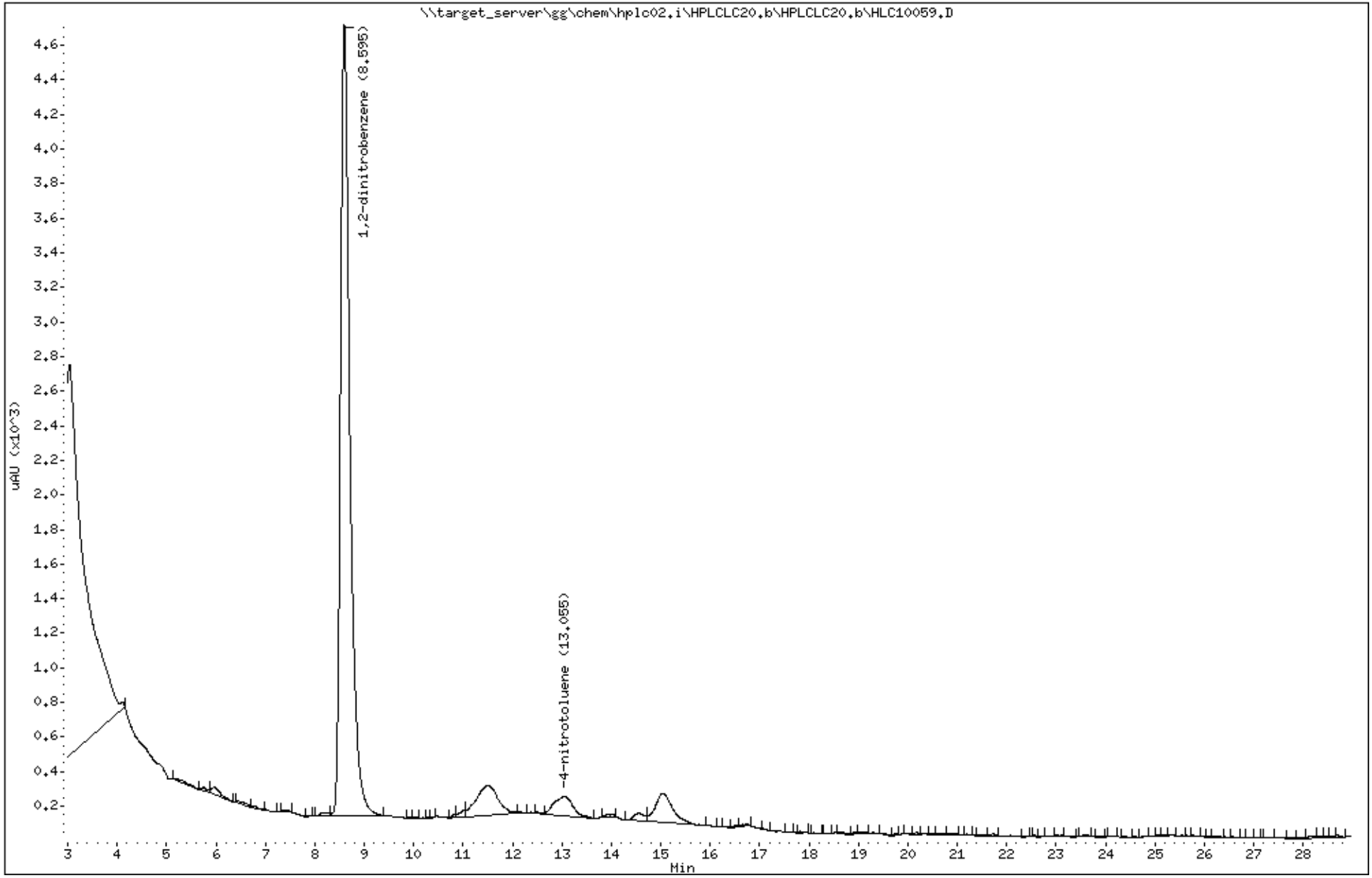
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.595	8.575	0.020	4573	0.98824	9.88	
~~16 4-nitrotoluene~~	~~13.055~~	~~13.022~~	~~0.033~~	~~114~~	~~0.04867~~	~~0.487~~	NC

3:02 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10059.D
Date : 21-MAR-2018 05:44
Client ID: HAAP-21C-LGIA-DPT18 Instrument: hplc02.i
Sample Info: SL2295-9
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000071

Data File: HLC10166.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

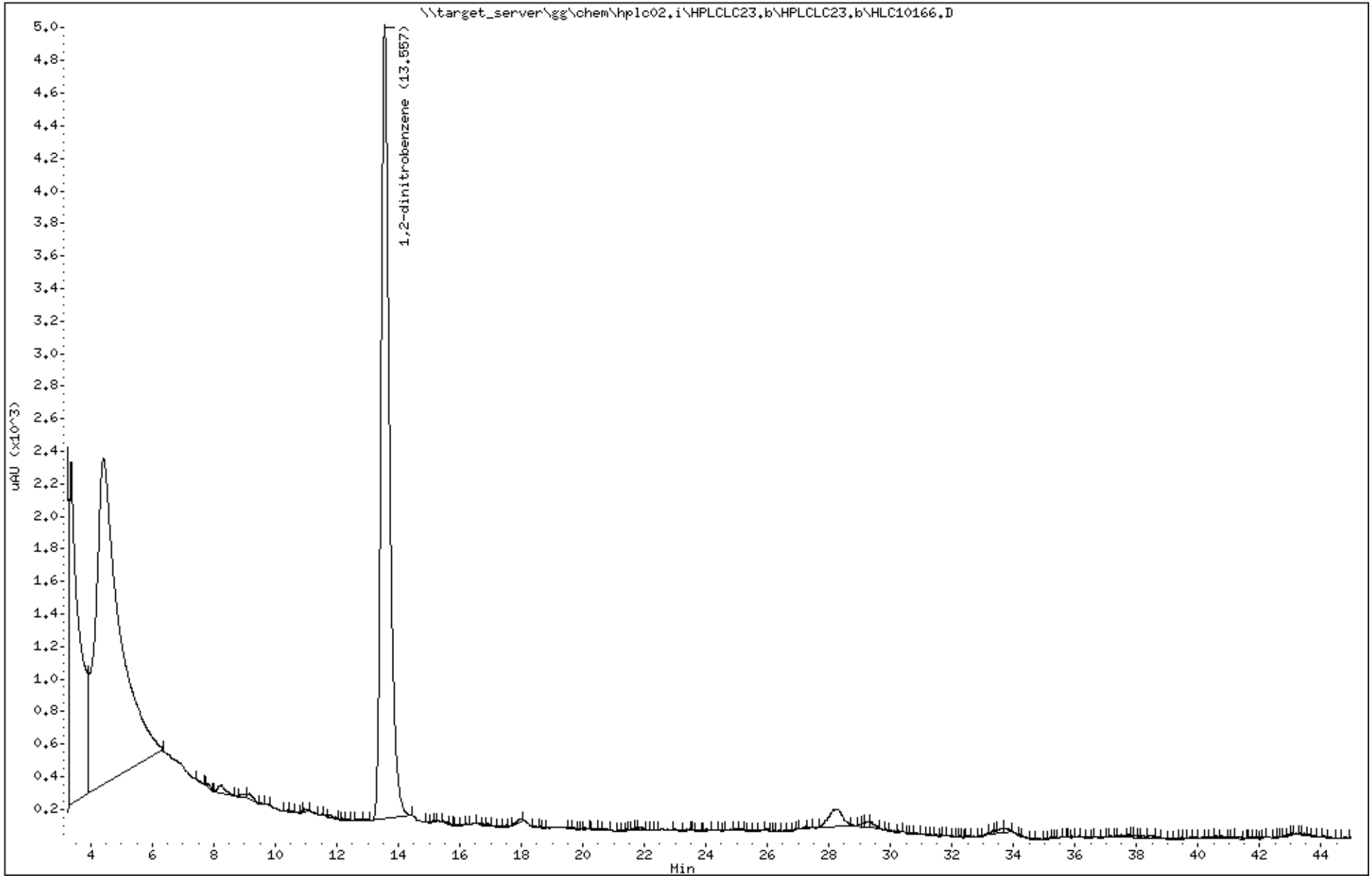
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10166.D
Lab Smp Id: SL2295-9C Client Smp ID: HAAP-21C-LGIA-DPT18
Inj Date : 24-MAR-2018 03:31
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-9C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 43
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.556	13.504	0.052	4883	0.92142	9.21	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10166.D
Date : 24-MAR-2018 03:31
Client ID: HAAP-21C-LGIA-DPT18
Instrument: hplc02.i
Sample Info: SL2295-9C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000073

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-10
Client ID: CHAAP-21C-LGIA-DPT20
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10061.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		97.1	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10061.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

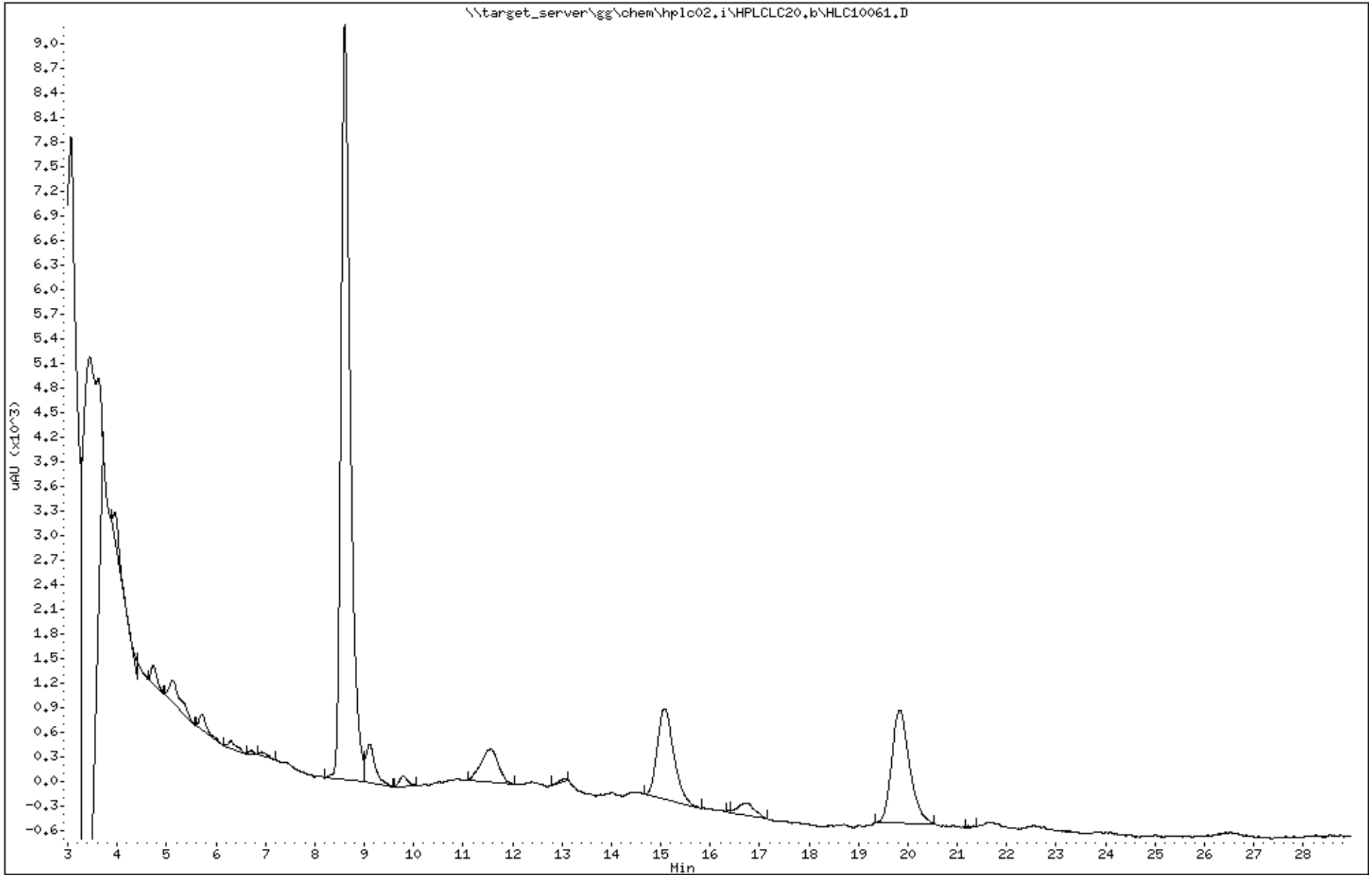
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10061.D
Lab Smp Id: SL2295-10 Client Smp ID: HAAP-21C-LGIA-DPT20
Inj Date : 21-MAR-2018 06:48
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-10
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 38
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10061.D
Date : 21-MAR-2018 06:48
Client ID: HAAP-21C-LGIA-DPT20
Instrument: hplc02.i
Sample Info: SL2295-10
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000076

Data File: HLC10061.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10061.D
Lab Smp Id: SL2295-10 Client Smp ID: HAAP-21C-LGIA-DPT20
Inj Date : 21-MAR-2018 06:48
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-10
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 38
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

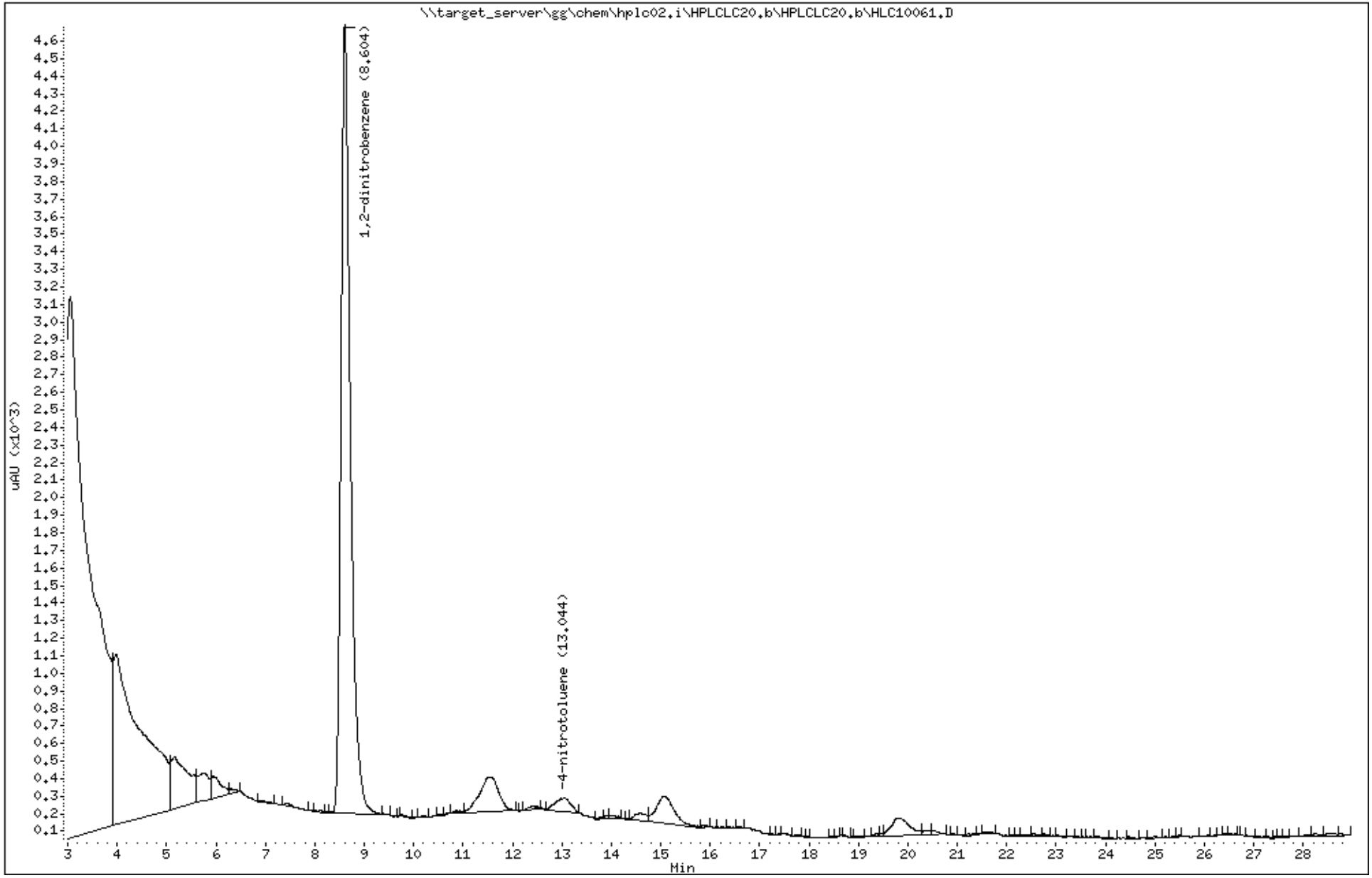
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE	
$ 2 1,2-dinitrobenzene	8.604	8.575	0.029	4492	0.97073	9.71		
~~16 4-nitrotoluene~~	~~13.044~~	~~13.022~~	~~0.022~~	~~78~~	~~0.03330~~	~~0.333(M)~~	~~M9~~	NC

QC Flag Legend

M - Compound response manually integrated.

AAB
3:02 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10061.D
Date : 21-MAR-2018 06:48
Client ID: HAAP-21C-LGIA-DPT20 Instrument: hplc02.i
Sample Info: SL2295-10
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000078

Data File: HLC10167.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

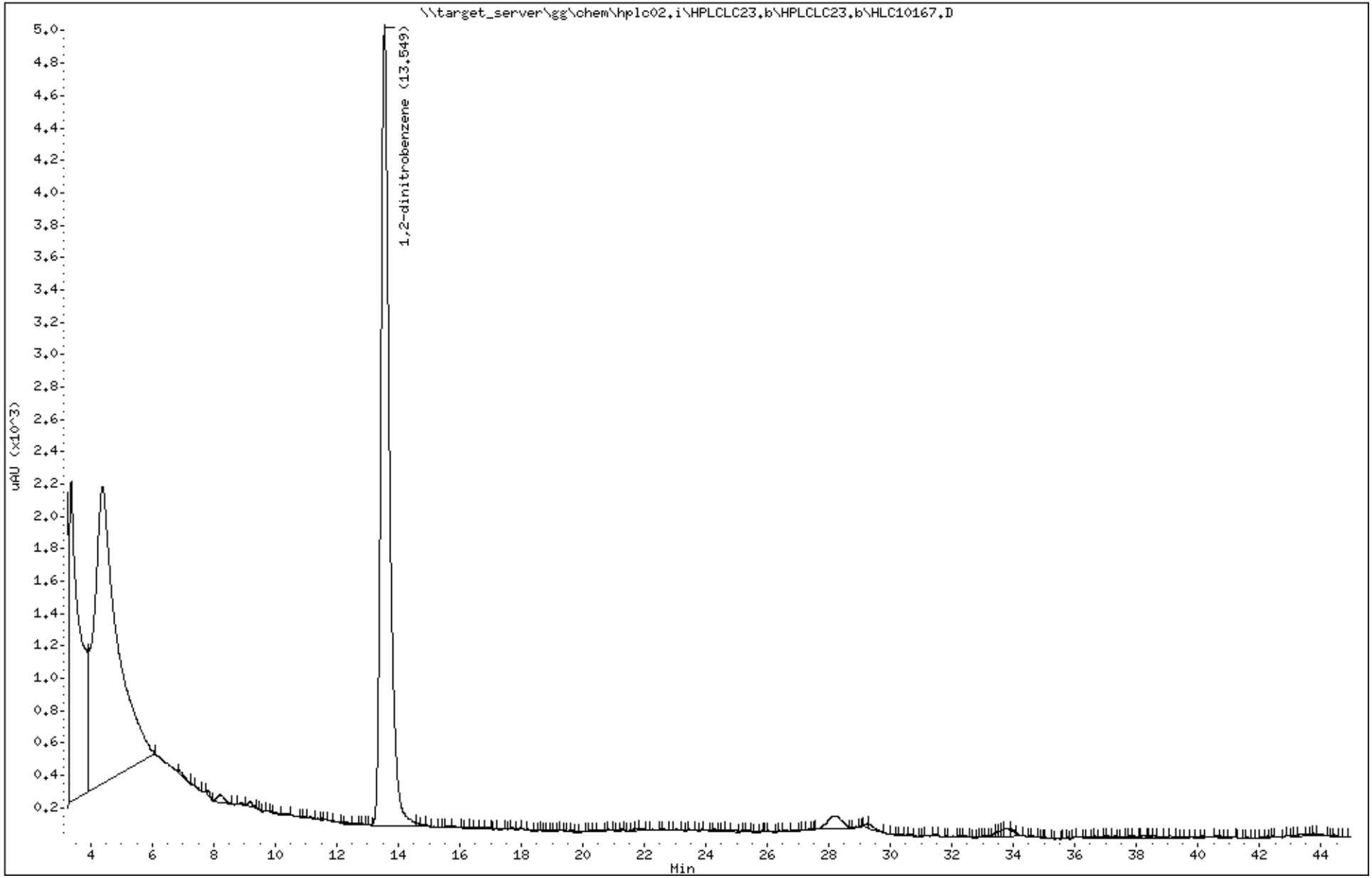
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10167.D
Lab Smp Id: SL2295-10C Client Smp ID: HAAP-21C-LGIA-DPT20
Inj Date : 24-MAR-2018 04:20
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-10C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.549	13.504	0.045	4948	0.93372	9.34	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10167.D
Date : 24-MAR-2018 04:20
Client ID: HAAP-21C-LGIA-DPT20 Instrument: hplc02.i
Sample Info: SL2295-10C
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E2 Column diameter: 4.60



Katahdin Analytical Services 2000080

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-11
Client ID: CHAAP-21C-UGIA-DPT01
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10062.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		101.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10062.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

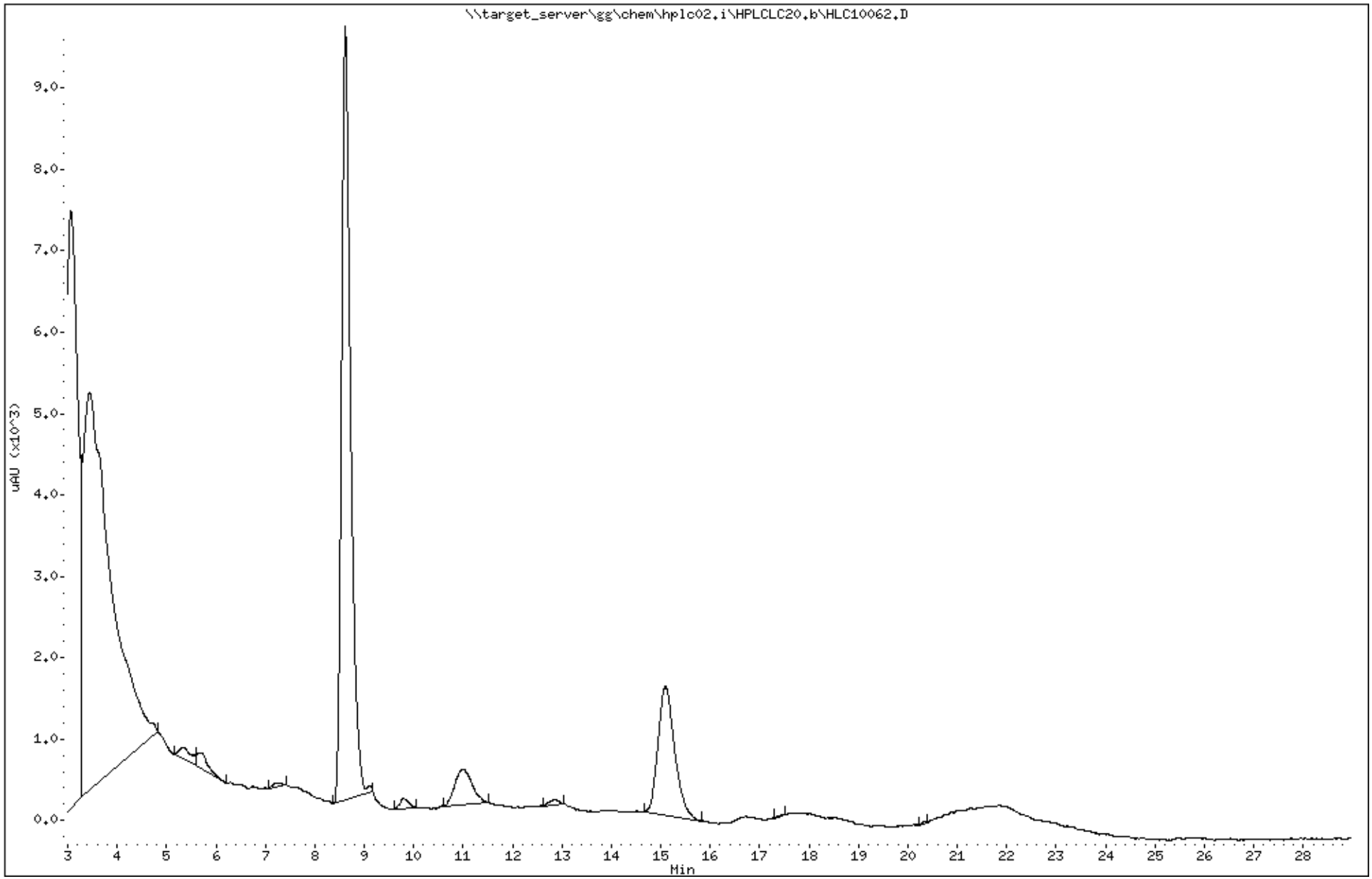
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10062.D
Lab Smp Id: SL2295-11 Client Smp ID: HAAP-21C-UGIA-DPT01
Inj Date : 21-MAR-2018 07:19
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-11
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 39
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10062.D
Date : 21-MAR-2018 07:19
Client ID: HAAP-21C-UGIA-DPT01
Instrument: hplc02.i
Sample Info: SL2295-11
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000083

Data File: HLC10062.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

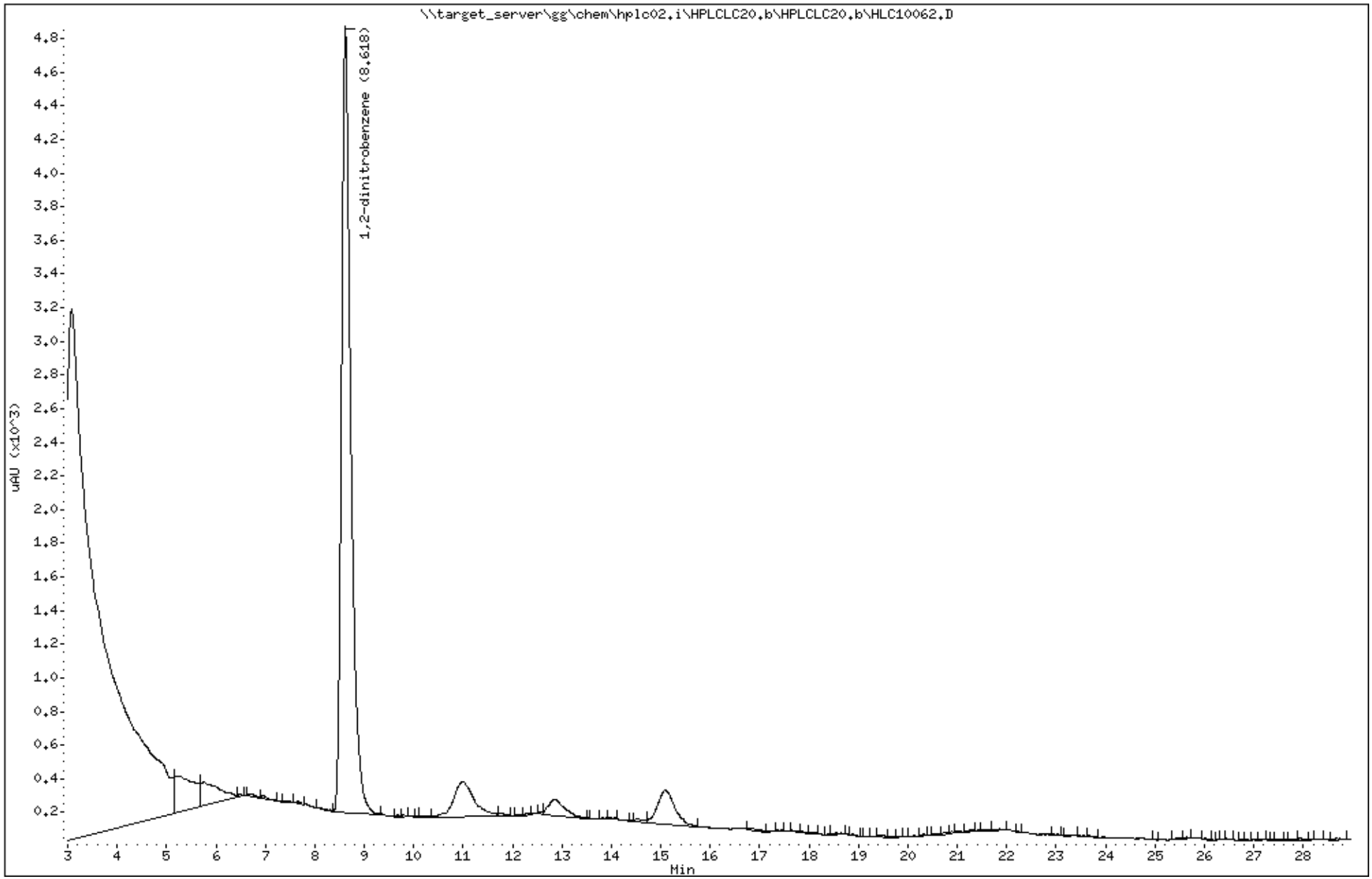
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10062.D
Lab Smp Id: SL2295-11 Client Smp ID: HAAP-21C-UGIA-DPT01
Inj Date : 21-MAR-2018 07:19
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-11
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 39
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.618	8.575	0.043	4672	1.00963	10.1	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10062.D
Date : 21-MAR-2018 07:19
Client ID: HAAP-21C-UGIA-DPT01 Instrument: hplc02.i
Sample Info: SL2295-11
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000085

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-12
Client ID: CHAAP-21C-UGIA-DPT03
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10063.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.9	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10063.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

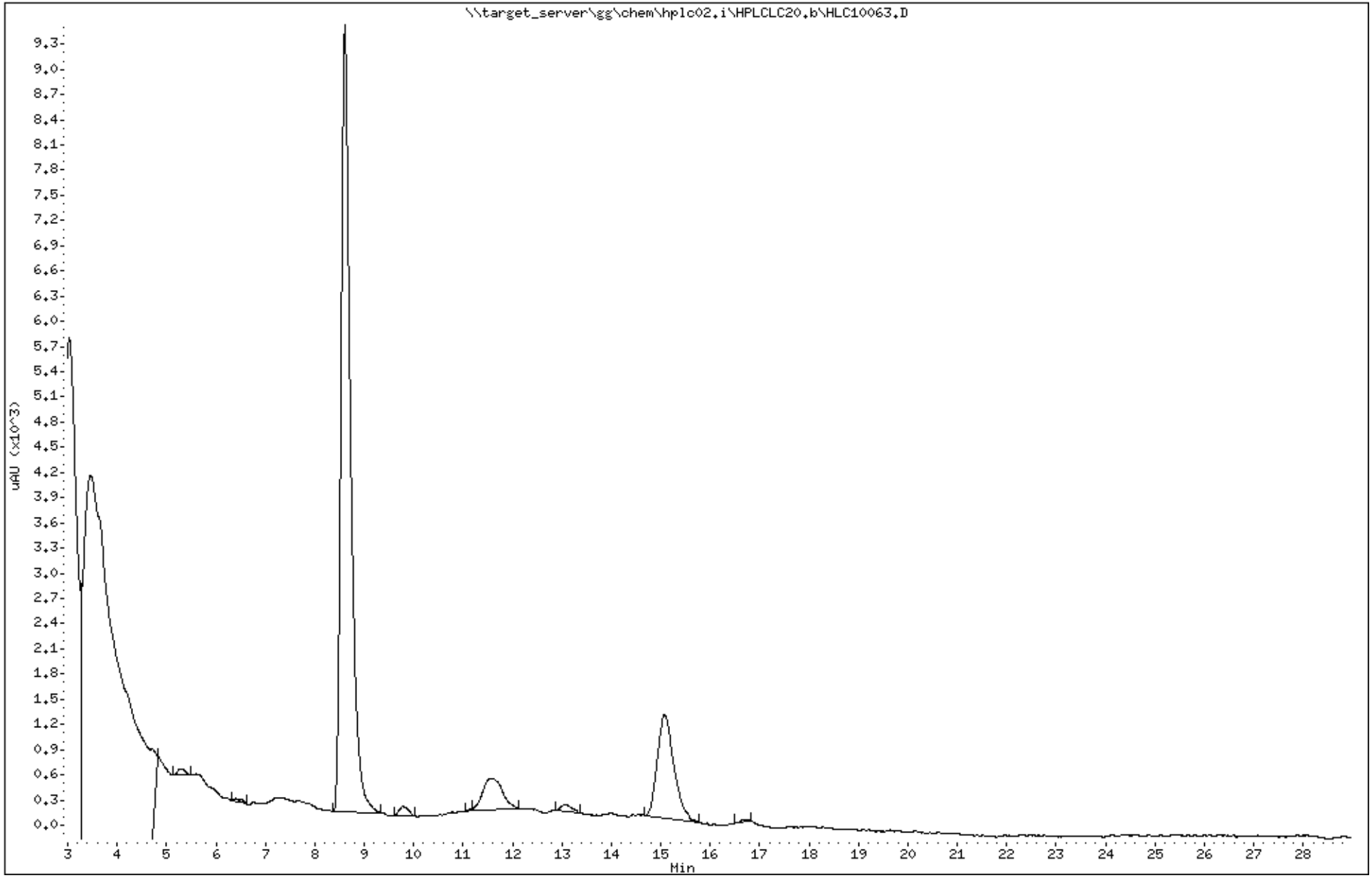
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10063.D
Lab Smp Id: SL2295-12 Client Smp ID: HAAP-21C-UGIA-DPT03
Inj Date : 21-MAR-2018 07:51
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-12
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 40
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10063.D
Date : 21-MAR-2018 07:51
Client ID: HAAP-21C-UGIA-DPT03
Instrument: hplc02.i
Sample Info: SL2295-12
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000088

Data File: HLC10063.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10063.D
Lab Smp Id: SL2295-12 Client Smp ID: HAAP-21C-UGIA-DPT03
Inj Date : 21-MAR-2018 07:51
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-12
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 40
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

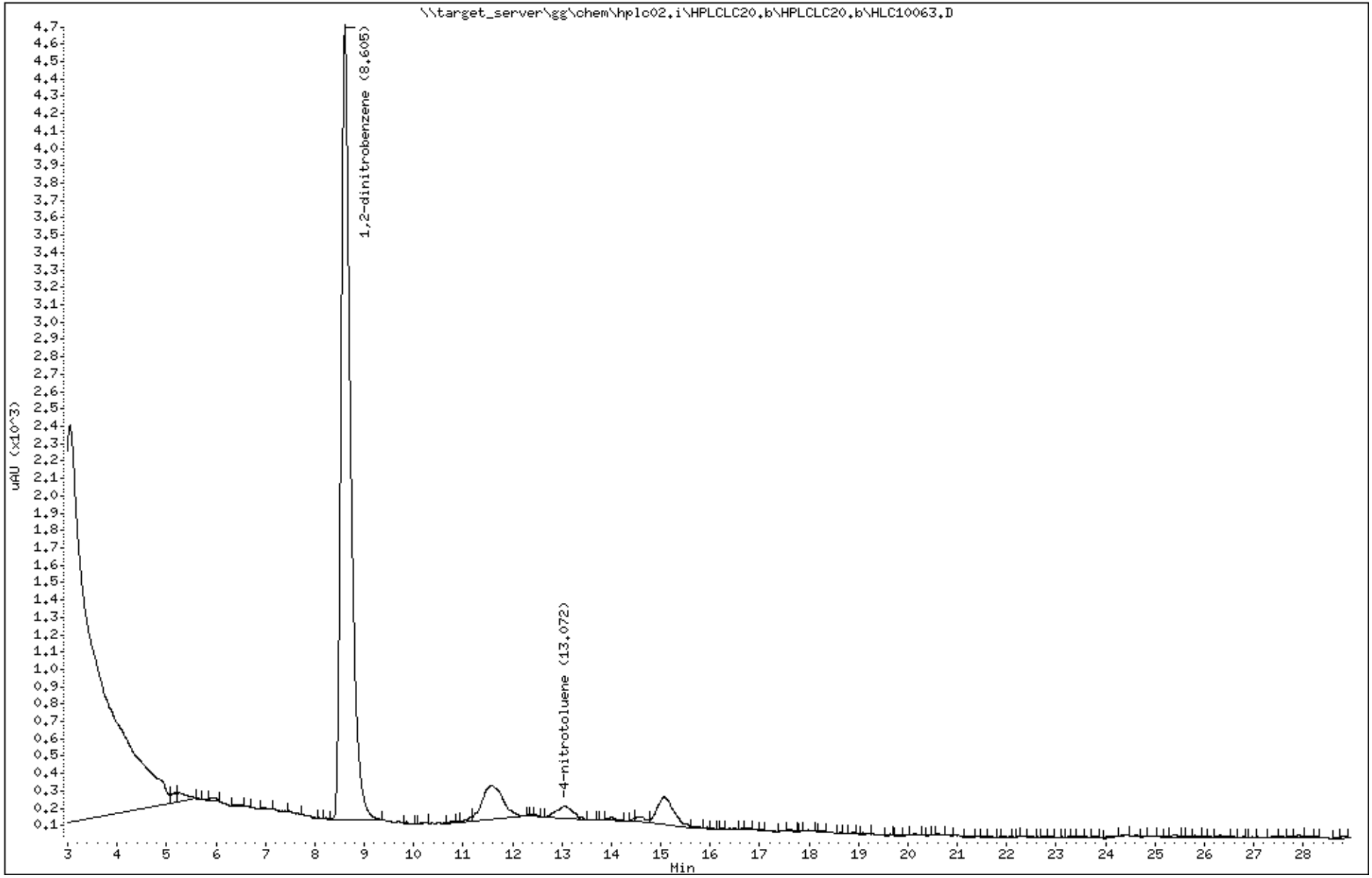
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.605	8.575	0.030	4576	0.98889	9.89	
~~16 4-nitrotoluene~~	~~13.071~~	~~13.022~~	~~0.049~~	~~72~~	~~0.03074~~	~~0.307~~	NC

3:03 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10063.D
Date : 21-MAR-2018 07:51
Client ID: HAAP-21C-UGIA-DPT03 Instrument: hplc02.i
Sample Info: SL2295-12
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E1 Column diameter: 4.60



Katahdin Analytical Services 2000090

Data File: HLC10168.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

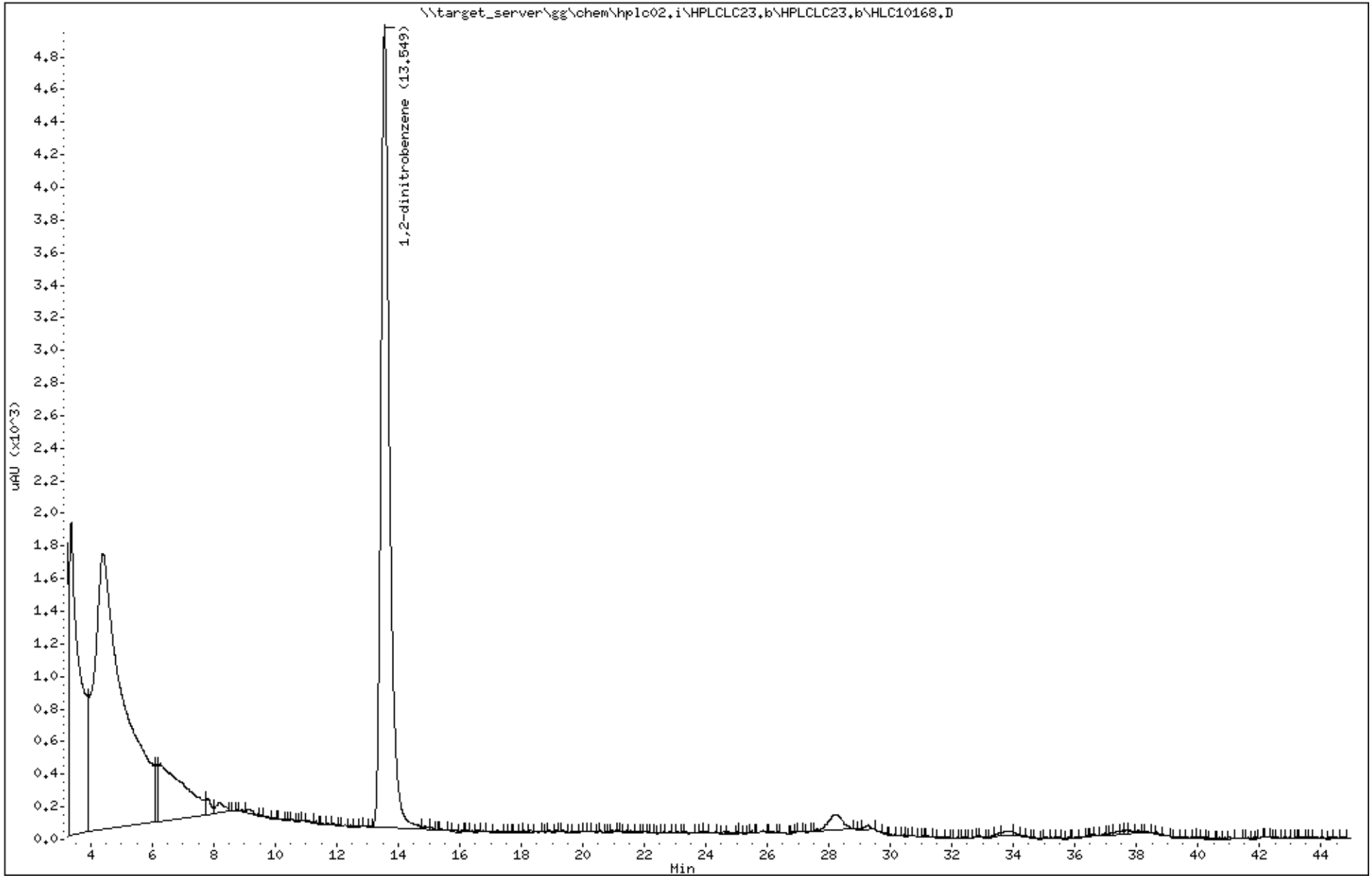
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10168.D
Lab Smp Id: SL2295-12C Client Smp ID: HAAP-21C-UGIA-DPT03
Inj Date : 24-MAR-2018 05:09
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-12C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 45
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.549	13.504	0.045	4925	0.92937	9.29	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10168.D
Date : 24-MAR-2018 05:09
Client ID: HAAP-21C-UGIA-DPT03
Instrument: hplc02.i
Sample Info: SL2295-12C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000092

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-13
Client ID: CHAAP-21C-UGIA-DPT05
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10064.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		105.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10064.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

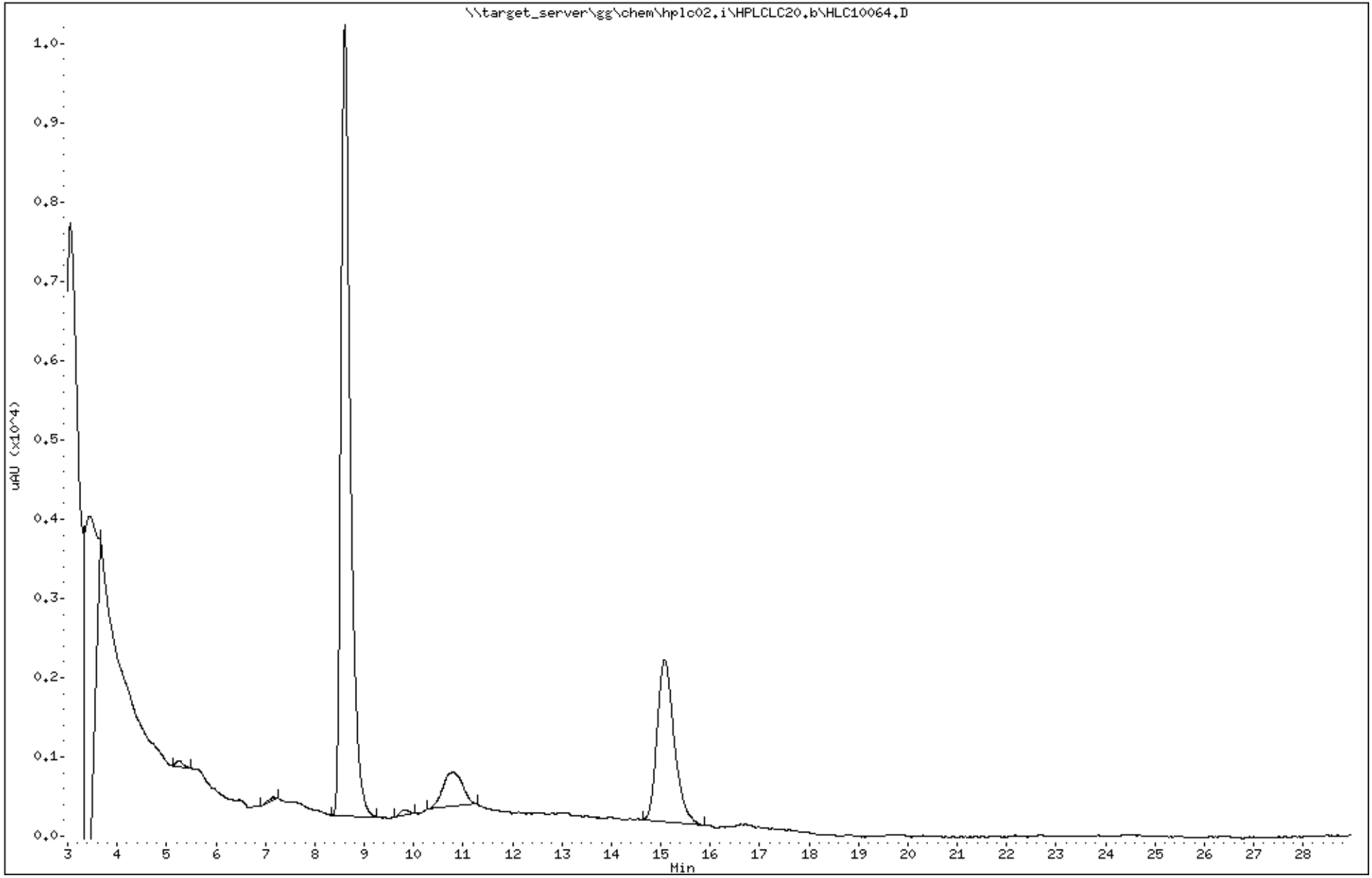
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10064.D
Lab Smp Id: SL2295-13 Client Smp ID: HAAP-21C-UGIA-DPT05
Inj Date : 21-MAR-2018 08:23
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-13
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 41
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10064.D
Date : 21-MAR-2018 08:23
Client ID: HAAP-21C-UGIA-DPT05
Instrument: hplc02.i
Sample Info: SL2295-13
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000095

Data File: HLC10064.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

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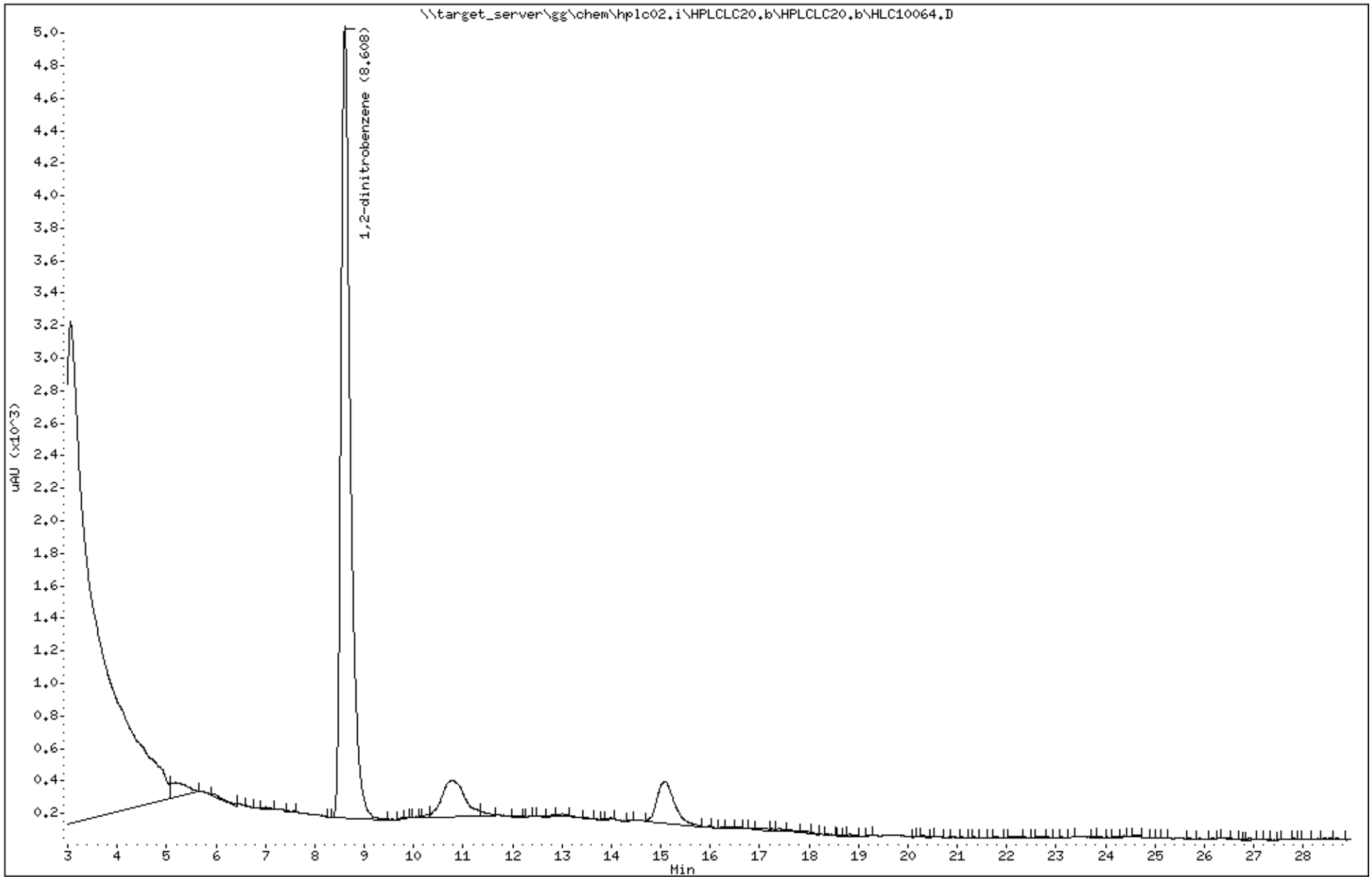
Lab Smp Id: SL2295-13 Client Smp ID: HAAP-21C-UGIA-DPT05
Inj Date : 21-MAR-2018 08:23
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-13
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 41
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.608	8.575	0.033	4872	1.05285	10.5	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10064.D
Date : 21-MAR-2018 08:23
Client ID: HAAP-21C-UGIA-DPT05
Instrument: hplc02.i
Sample Info: SL2295-13
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000097

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-14
Client ID: CHAAP-21C-UGIA-DPT07
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10065.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		118.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10065.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

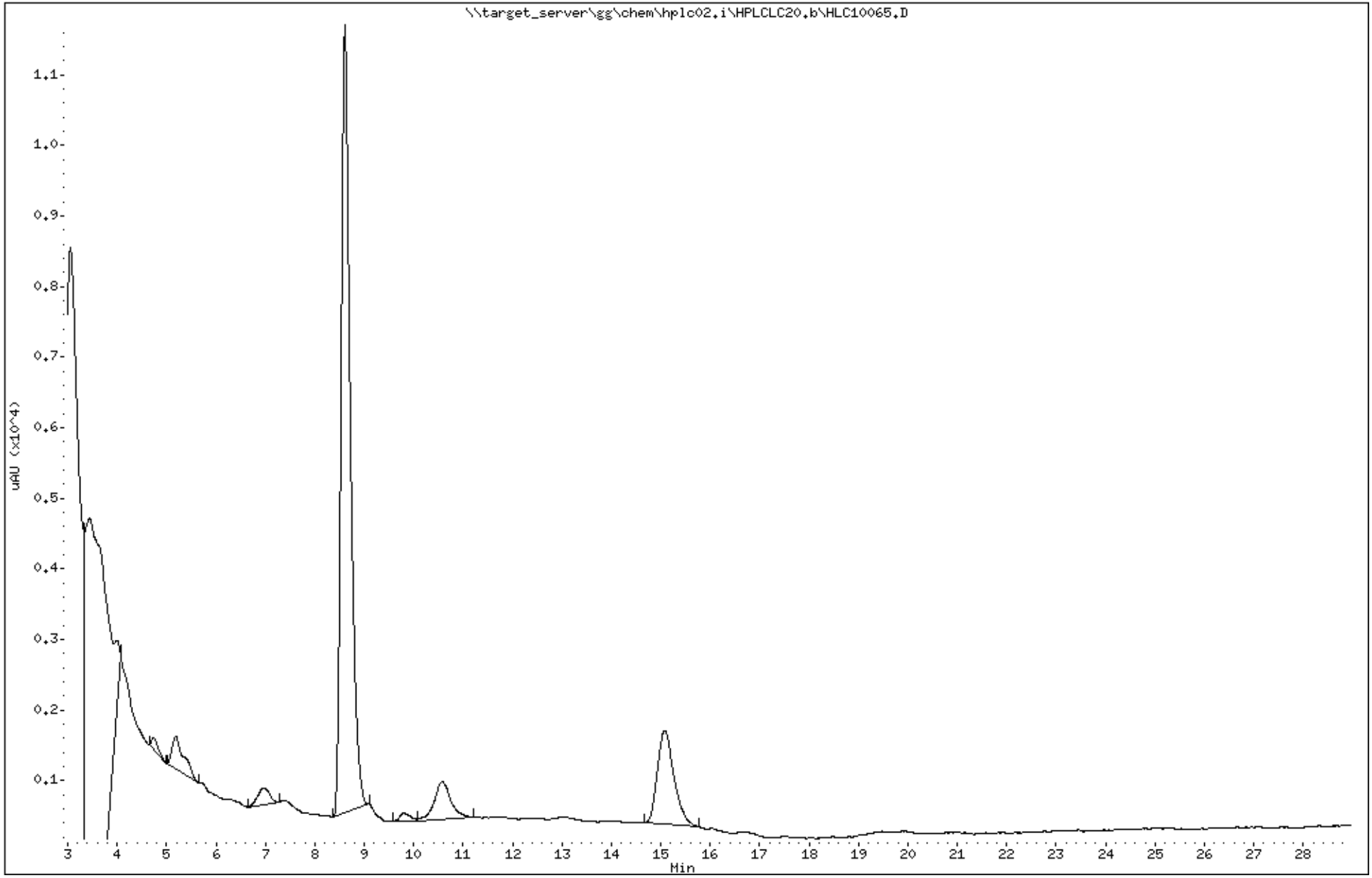
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10065.D
Lab Smp Id: SL2295-14 Client Smp ID: HAAP-21C-UGIA-DPT07
Inj Date : 21-MAR-2018 08:55
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-14
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 42
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10065.D
Date : 21-MAR-2018 08:55
Client ID: HAAP-21C-UGIA-DPT07
Instrument: hplc02.i
Sample Info: SL2295-14
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000100

Data File: HLC10065.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

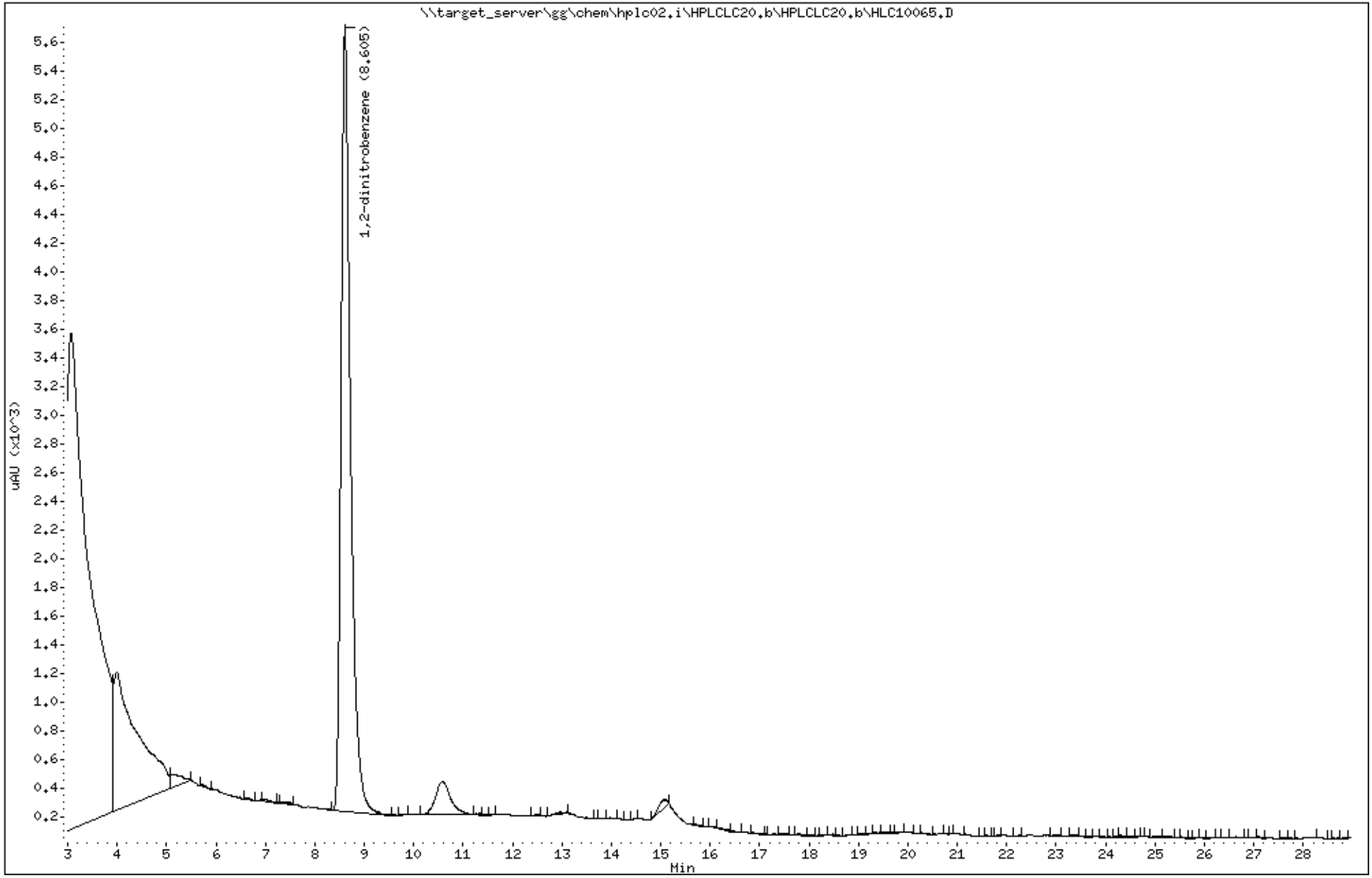
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10065.D
Lab Smp Id: SL2295-14 Client Smp ID: HAAP-21C-UGIA-DPT07
Inj Date : 21-MAR-2018 08:55
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-14
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 42
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.605	8.575	0.030	5487	1.18576	11.8	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10065.D
Date : 21-MAR-2018 08:55
Client ID: HAAP-21C-UGIA-DPT07
Instrument: hplc02.i
Sample Info: SL2295-14
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000102

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-15
Client ID: CHAAP-21C-UGIA-DPT09
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10066.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		113.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10066.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

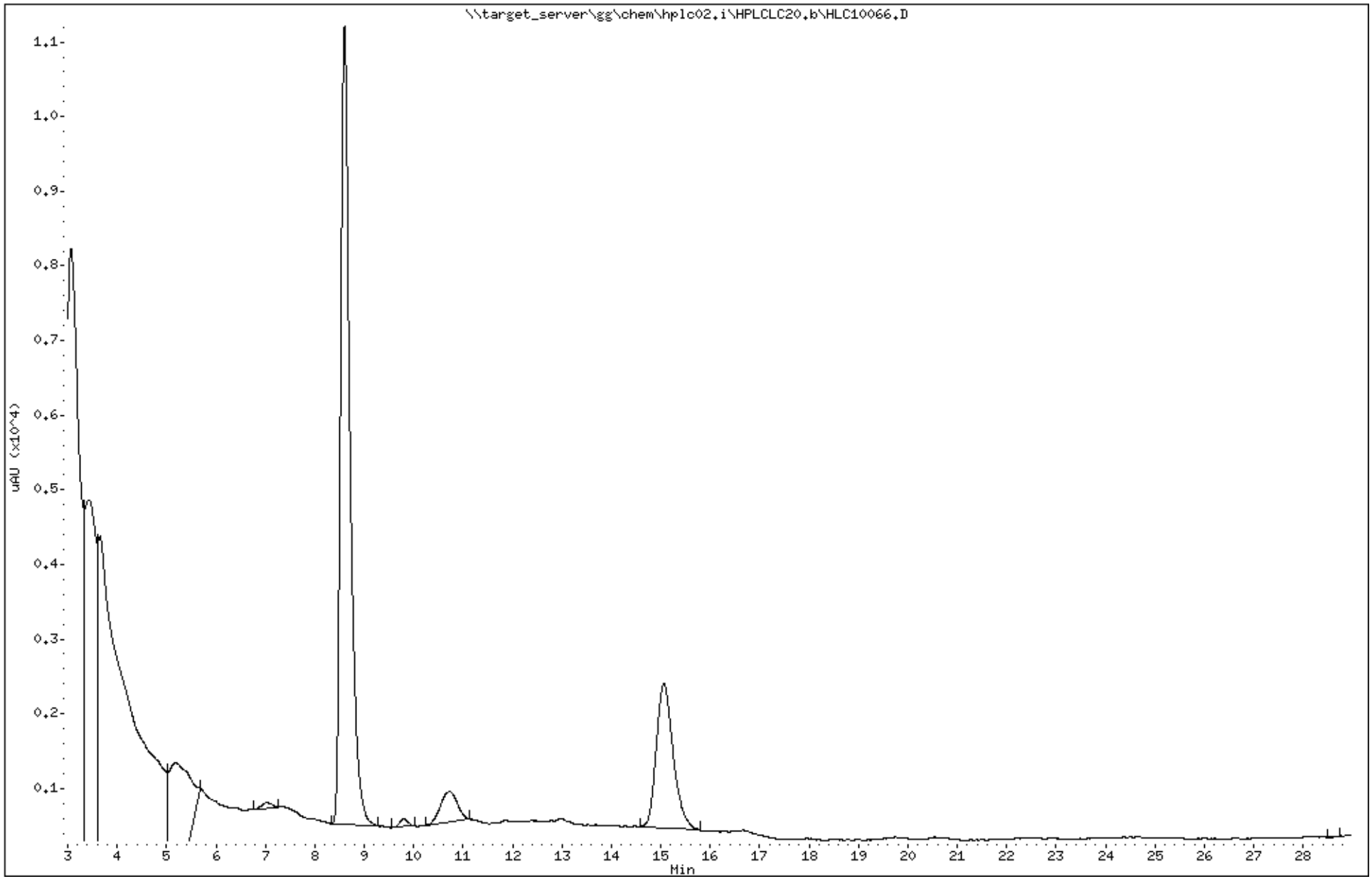
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10066.D
Lab Smp Id: SL2295-15 Client Smp ID: HAAP-21C-UGIA-DPT09
Inj Date : 21-MAR-2018 09:26
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-15
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 43
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10066.D
Date : 21-MAR-2018 09:26
Client ID: HAAP-21C-UGIA-DPT09
Instrument: hplc02.i
Sample Info: SL2295-15
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000105

Data File: HLC10066.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

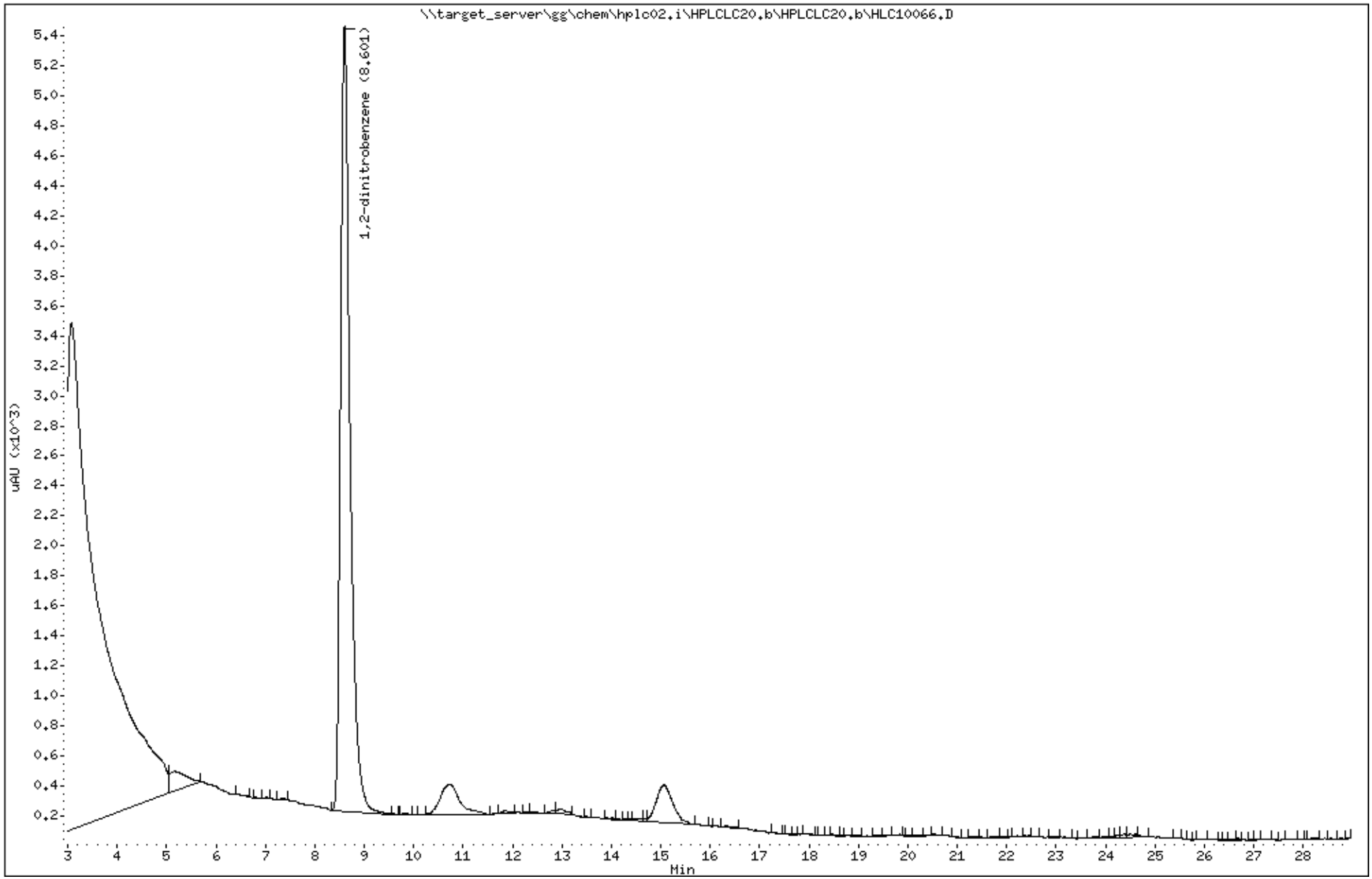
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10066.D
Lab Smp Id: SL2295-15 Client Smp ID: HAAP-21C-UGIA-DPT09
Inj Date : 21-MAR-2018 09:26
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-15
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 43
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.600	8.575	0.025	5226	1.12935	11.3	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10066.D
Date : 21-MAR-2018 09:26
Client ID: HAAP-21C-UGIA-DPT09
Instrument: hplc02.i
Sample Info: SL2295-15
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000107

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-16
Client ID: CHAAP-21C-UGIA-DPT11
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10067.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		111.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10067.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

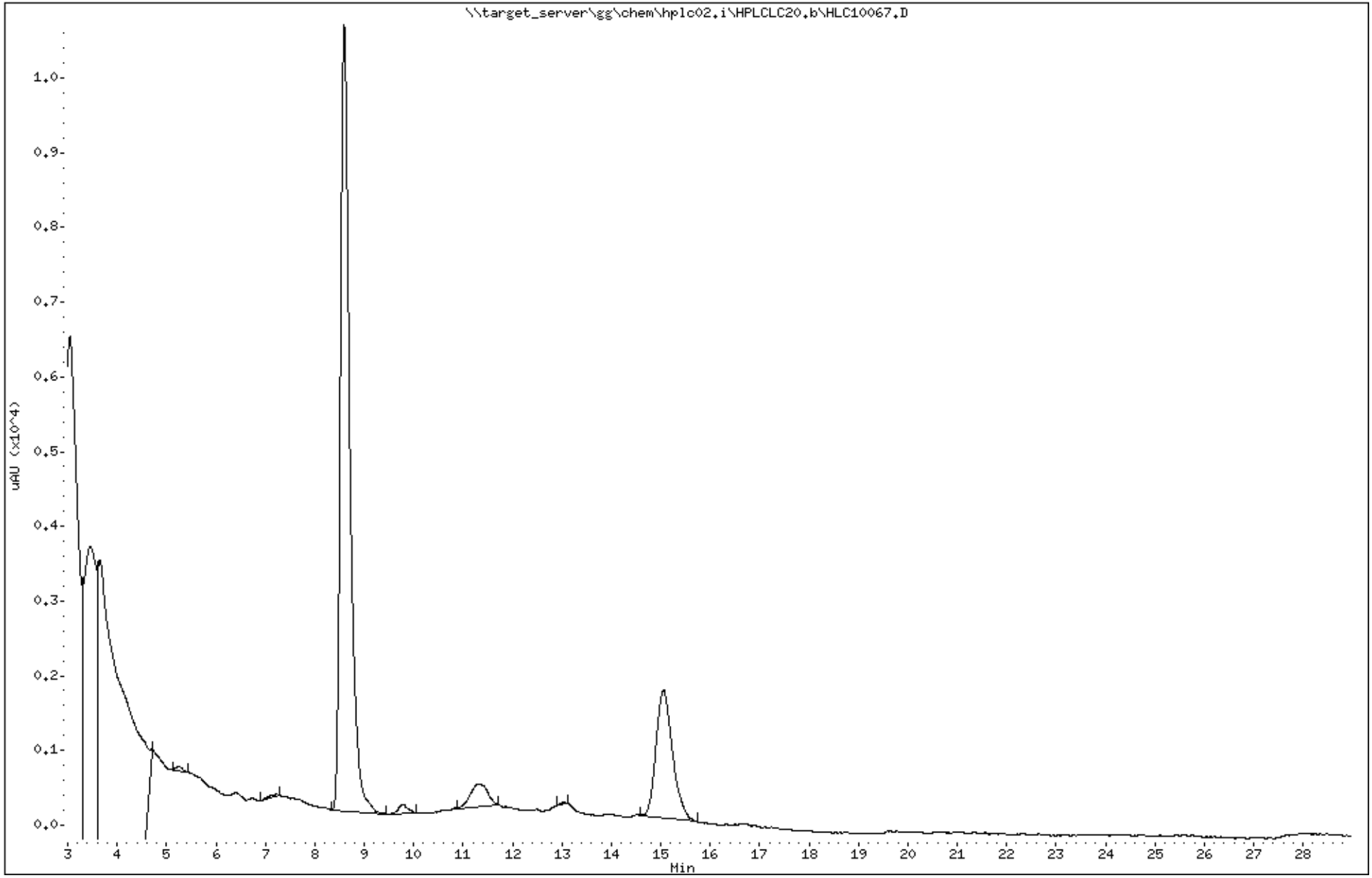
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10067.D
Lab Smp Id: SL2295-16 Client Smp ID: HAAP-21C-UGIA-DPT11
Inj Date : 21-MAR-2018 09:58
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-16
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10067.D
Date : 21-MAR-2018 09:58
Client ID: HAAP-21C-UGIA-DPT11
Instrument: hplc02.i
Sample Info: SL2295-16
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000110

Data File: HLC10067.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10067.D
Lab Smp Id: SL2295-16 Client Smp ID: HAAP-21C-UGIA-DPT11
Inj Date : 21-MAR-2018 09:58
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-16
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

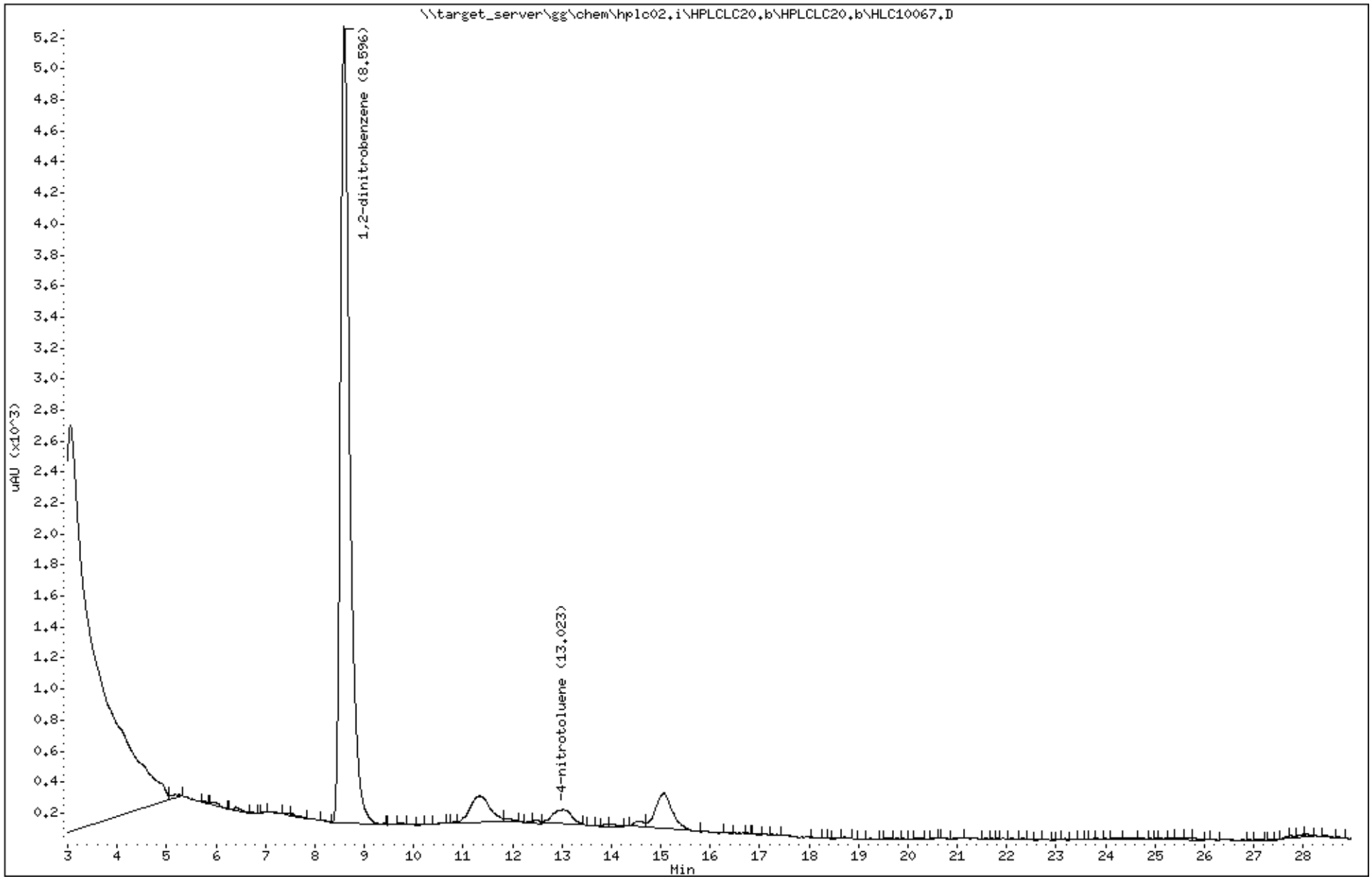
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE	
$ 2 1,2-dinitrobenzene	8.595	8.575	0.020	5142	1.11120	11.1		
~~16 4-nitrotoluene~~	~~13.022~~	~~13.022~~	~~0.000~~	~~88~~	~~0.03757~~	~~0.376(M)~~	~~M9~~	NC

QC Flag Legend

M - Compound response manually integrated.

3:03 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10067.D
Date : 21-MAR-2018 09:58
Client ID: HAAP-21C-UGIA-DPT11
Instrument: hplc02.i
Sample Info: SL2295-16
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000112

Data File: HLC10169.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

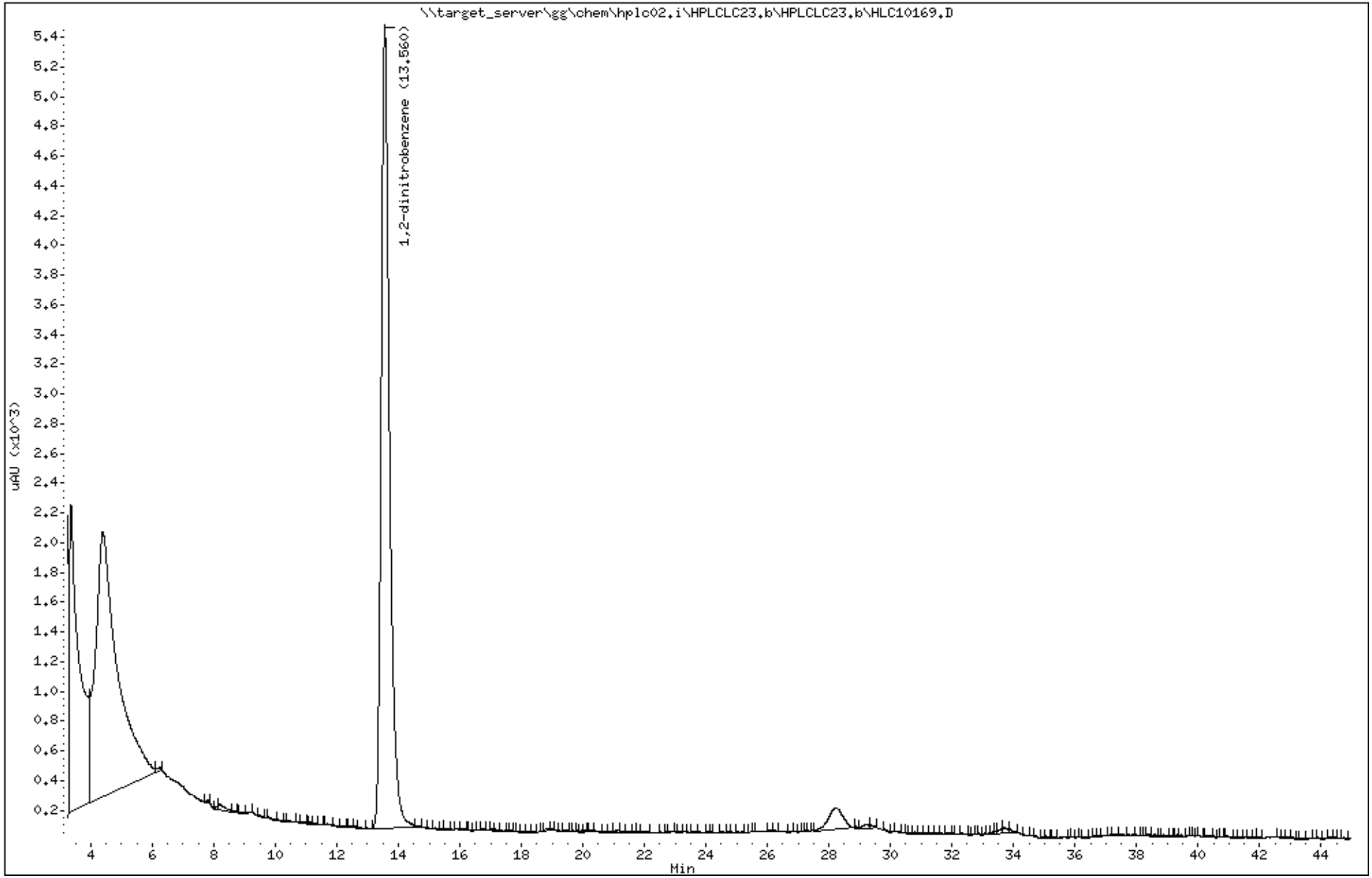
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10169.D
Lab Smp Id: SL2295-16C Client Smp ID: HAAP-21C-UGIA-DPT11
Inj Date : 24-MAR-2018 05:58
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-16C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 46
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.560	13.504	0.056	5409	1.02092	10.2	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10169.D
Date : 24-MAR-2018 05:58
Client ID: HAAP-21C-UGIA-DPT11
Instrument: hplc02.i
Sample Info: SL2295-16C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000114

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-17
Client ID: CHAAP-21C-UGIA-DPT13
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10068.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		102.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10068.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10068.D
Lab Smp Id: SL2295-17 Client Smp ID: HAAP-21C-UGIA-DPT13
Inj Date : 21-MAR-2018 10:30
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-17
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 45
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

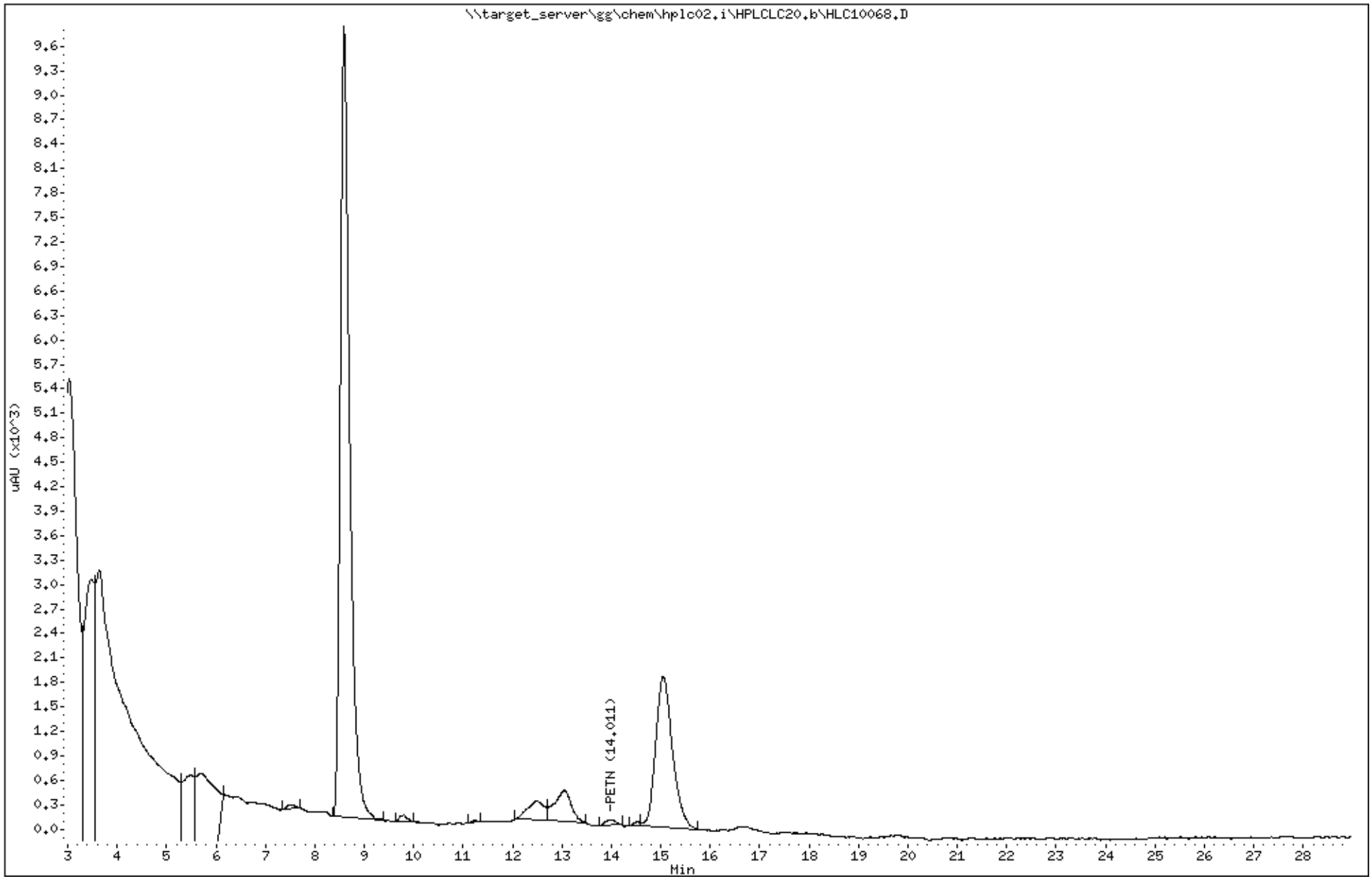
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
~~18 PETN~~	~~14.011~~	~~13.963~~	~~0.048~~	~~65~~	~~0.02260~~	~~0.226(a)~~	NC

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

3:04 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10068.D
Date : 21-MAR-2018 10:30
Client ID: HAAP-21C-UGIA-DPT13
Instrument: hplc02.i
Sample Info: SL2295-17
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000117

Data File: HLC10068.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10068.D
Lab Smp Id: SL2295-17 Client Smp ID: HAAP-21C-UGIA-DPT13
Inj Date : 21-MAR-2018 10:30
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-17
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 45
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

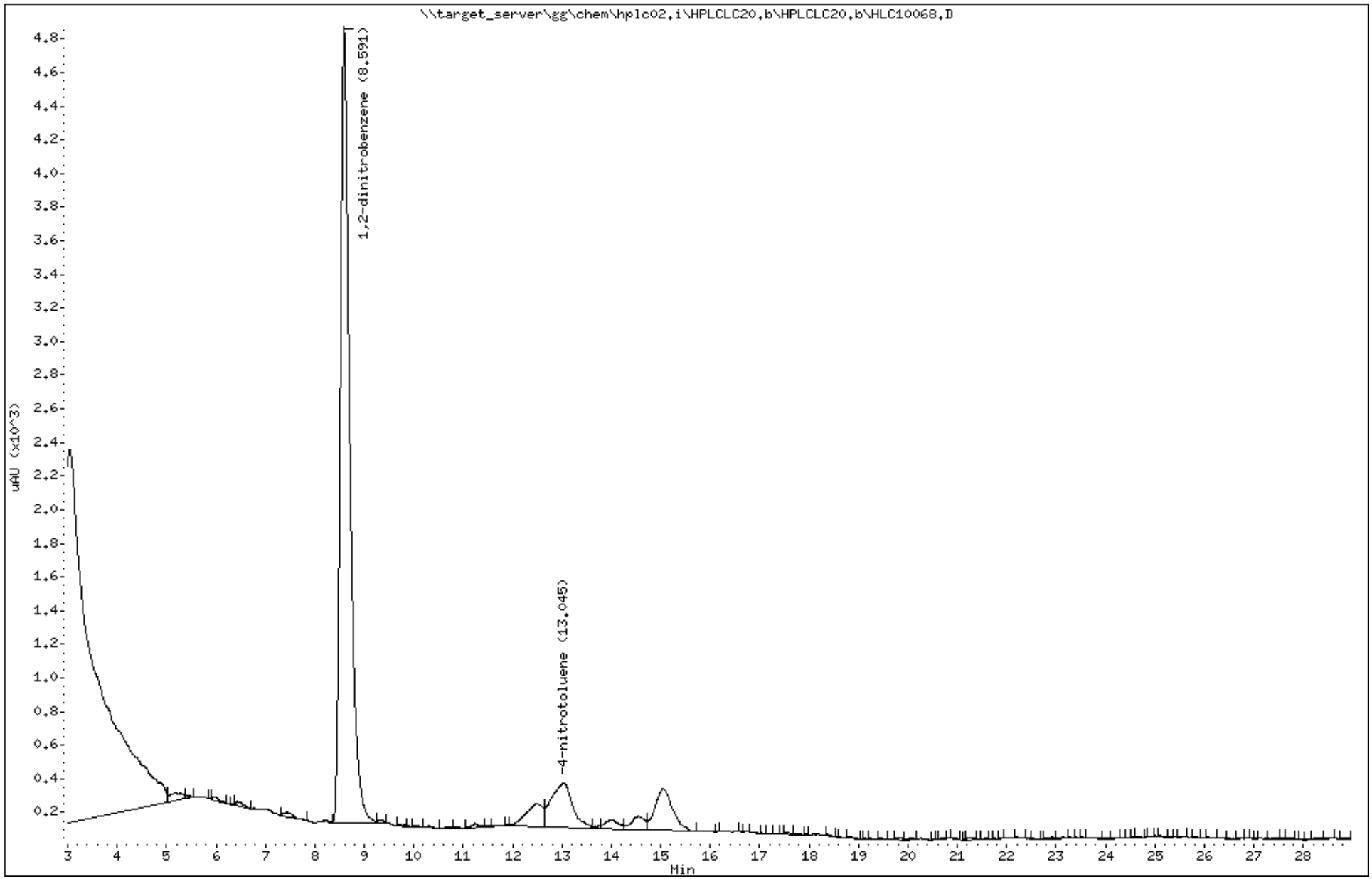
Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.591	8.575	0.016	4737	1.02368	10.2	
~~16 4-nitrotoluene~~	~~13.044~~	~~13.022~~	~~0.022~~	~~262~~	~~0.11185~~	~~1.12~~	NC

3:04 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10068.D
Date : 21-MAR-2018 10:30
Client ID: HAAP-21C-UGIA-DPT13
Instrument: hplc02.i
Sample Info: SL2295-17
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000119

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10170.D
Report Date: 26-Mar-2018 13:36

Katahdin Analytical Services

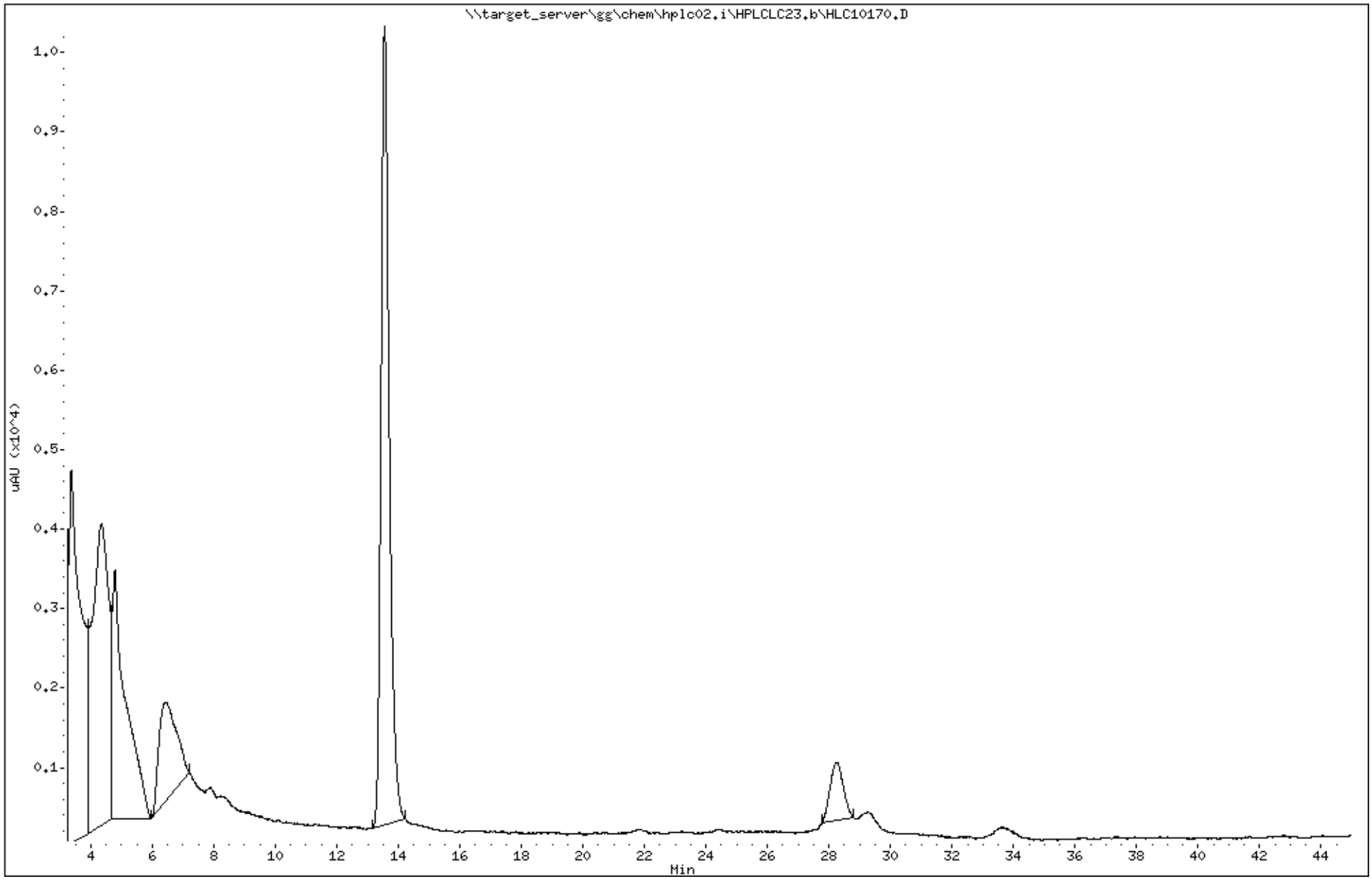
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10170.D
Lab Smp Id: SL2295-17C Client Smp ID: HAAP-21C-UGIA-DPT13
Inj Date : 24-MAR-2018 06:47
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-17C
Misc Info : WG225143,WG225094,WG210620-13
Comment   :
Method   : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m
Meth Date : 26-Mar-2018 13:35 hplc02.i Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 47
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: NGPETN.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HLC10170.D
Date : 24-MAR-2018 06:47
Client ID: HAAP-21C-UGIA-DPT13
Instrument: hplc02.i
Sample Info: SL2295-17C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000121

Data File: HLC10170.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

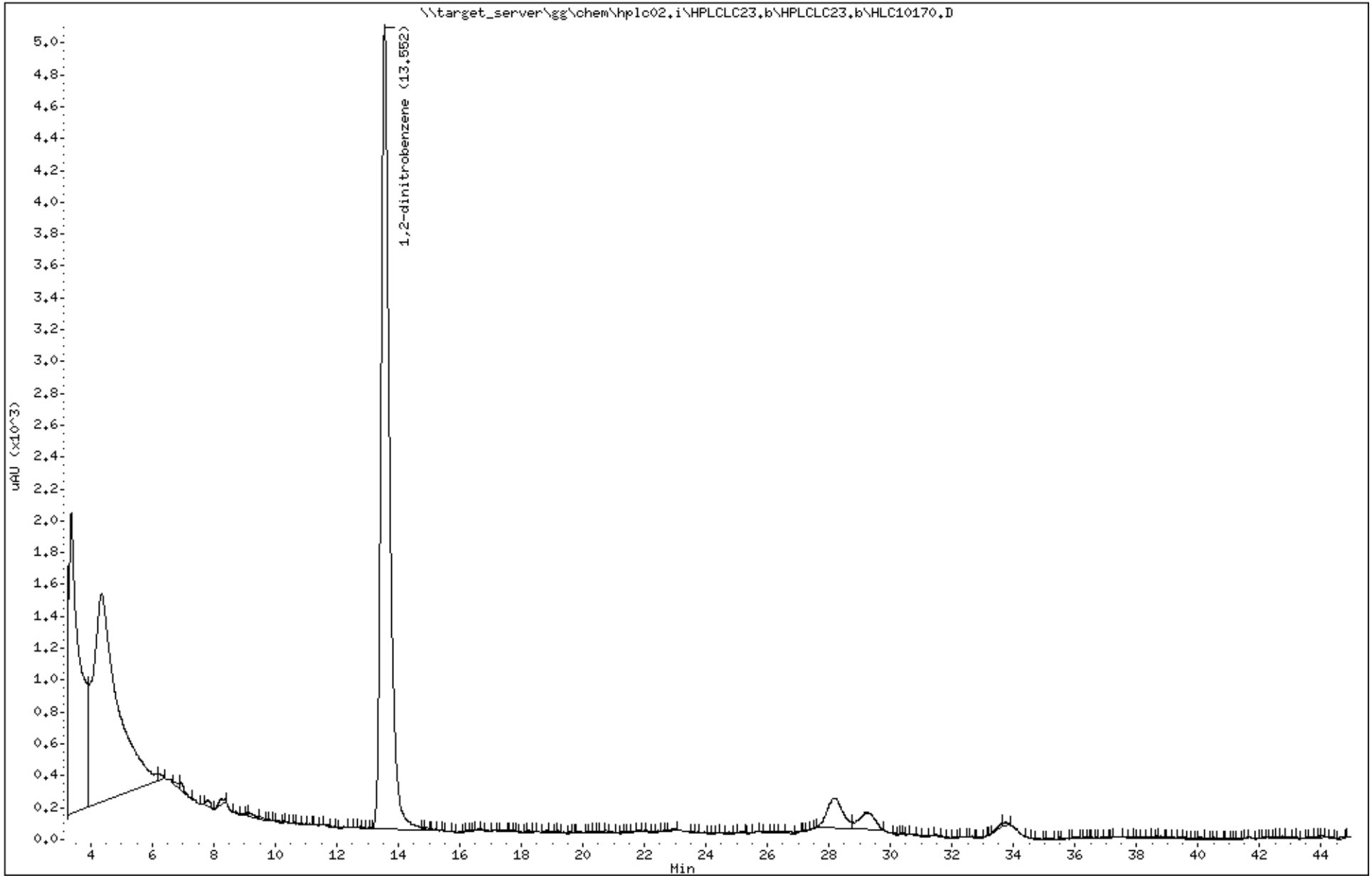
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10170.D
Lab Smp Id: SL2295-17C Client Smp ID: HAAP-21C-UGIA-DPT13
Inj Date : 24-MAR-2018 06:47
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-17C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 47
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.552	13.504	0.048	5048	0.95264	9.53	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10170.D
Date : 24-MAR-2018 06:47
Client ID: HAAP-21C-UGIA-DPT13
Instrument: hplc02.i
Sample Info: SL2295-17C
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E2
Column diameter: 4.60



Katahdin Analytical Services 2000123

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-18
Client ID: CHAAP-21C-UGIA-DPT15
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10069.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 19-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225094

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		103.	%					

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P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10069.D
Report Date: 26-Mar-2018 13:17

Katahdin Analytical Services

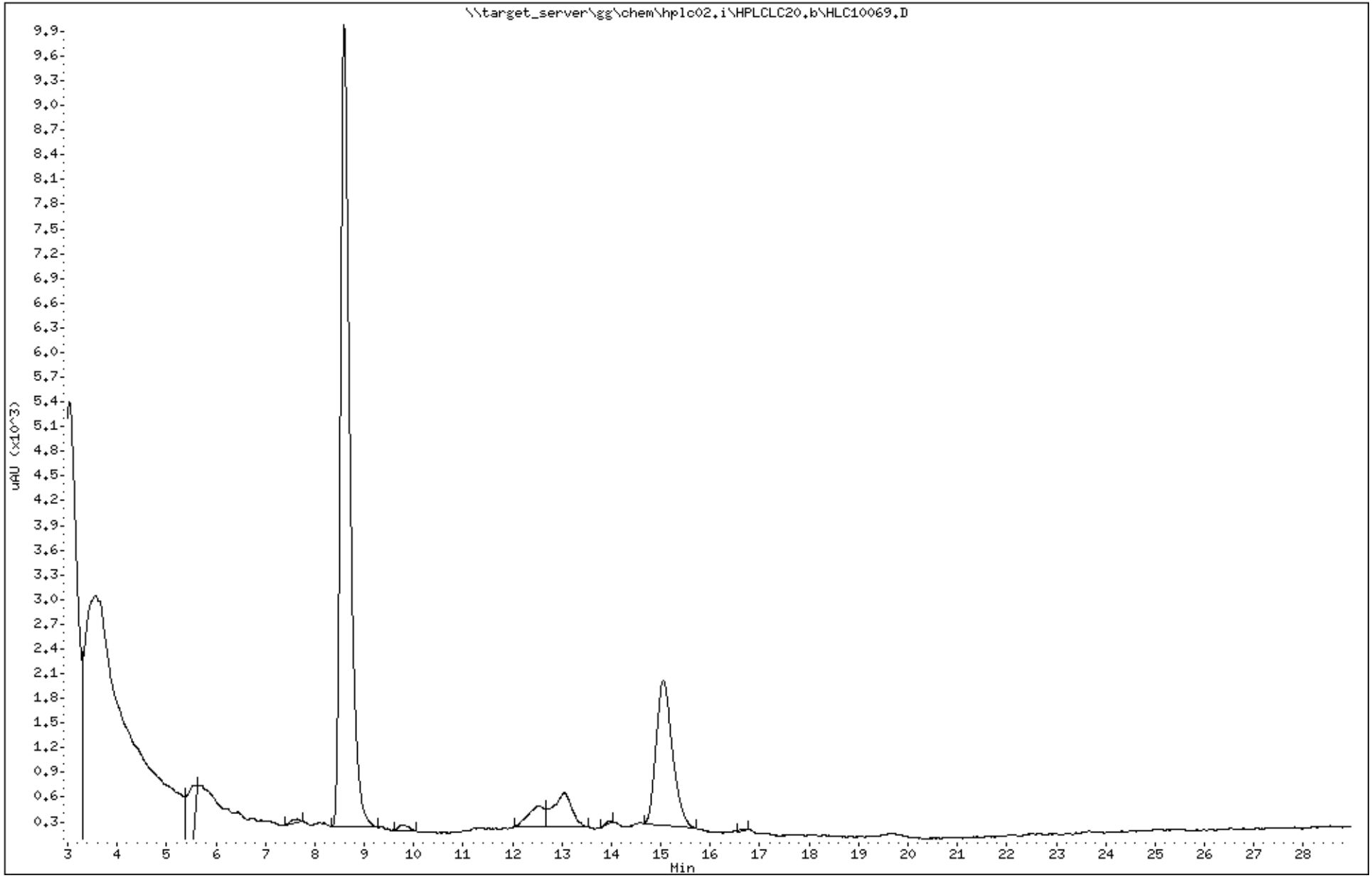
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10069.D
Lab Smp Id: SL2295-18 Client Smp ID: HAAP-21C-UGIA-DPT15
Inj Date : 21-MAR-2018 11:02
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-18
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m
Meth Date : 21-Mar-2018 11:31 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 46
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HLC10069.D
Date : 21-MAR-2018 11:02
Client ID: HAAP-21C-UGIA-DPT15
Instrument: hplc02.i
Sample Info: SL2295-18
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000126

Data File: HLC10069.D
Report Date: 26-Mar-2018 13:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10069.D
Lab Smp Id: SL2295-18 Client Smp ID: HAAP-21C-UGIA-DPT15
Inj Date : 21-MAR-2018 11:02
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-18
Misc Info : WG225143,WG225094,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC20.b\EXPB05A.m\EXPB05A.m
Meth Date : 22-Mar-2018 05:09 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 46
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

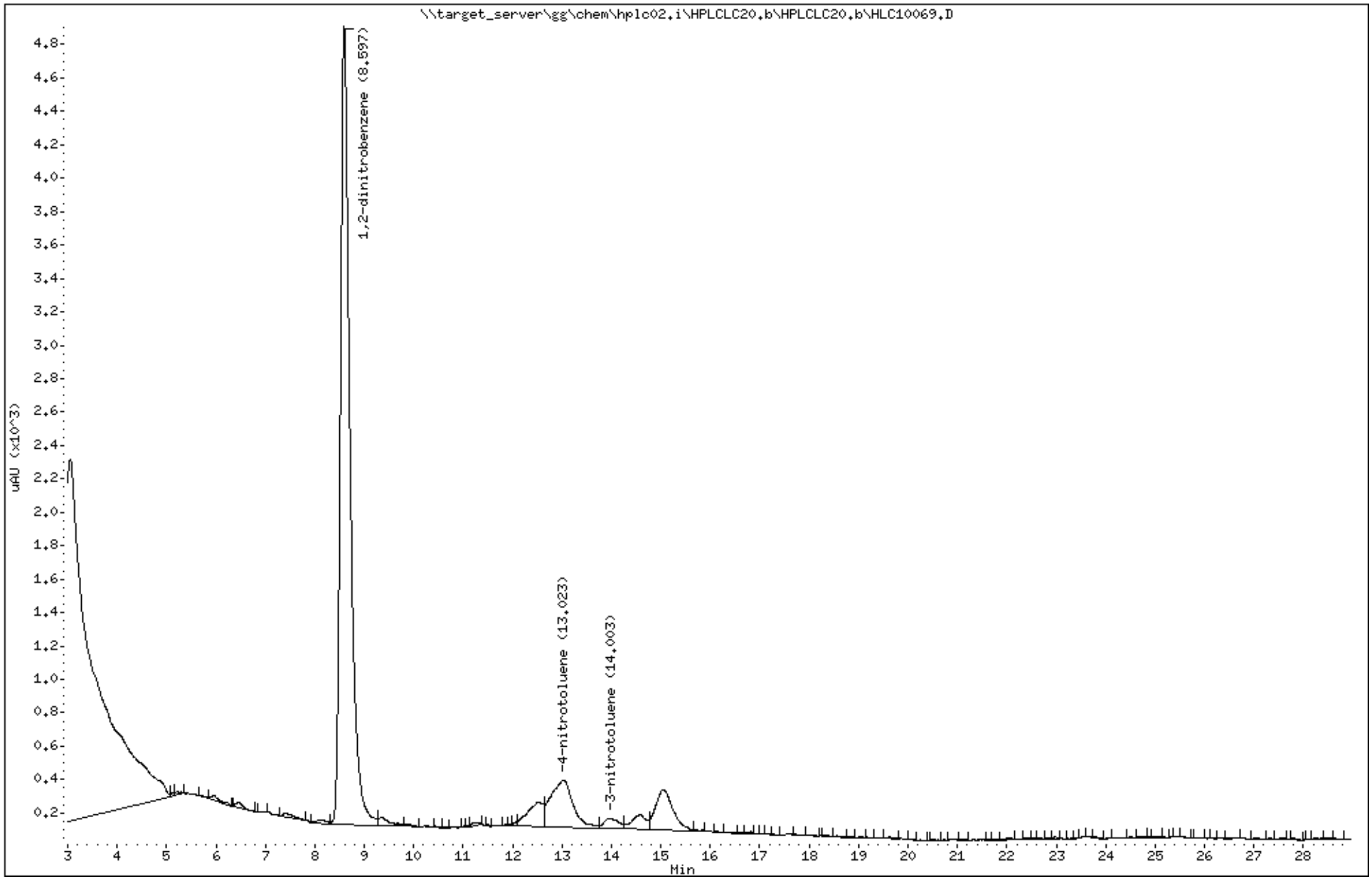
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.596	8.575	0.021	4776	1.03211	10.3	
~~16 4-nitrotoluene~~	~~13.023~~	~~13.022~~	~~0.001~~	~~284~~	~~0.12124~~	~~1.21~~	NC
~~17 3-nitrotoluene~~	~~14.003~~	~~13.389~~	~~0.614~~	~~60~~	~~0.01804~~	~~0.180(a)~~	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

3:05 pm, Mar 26, 2018

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC20.b\HPLCLC20.b\HLC10069.D
Date : 21-MAR-2018 11:02
Client ID: HAAP-21C-UGIA-DPT15
Instrument: hplc02.i
Sample Info: SL2295-18
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000128

Data File: HLC10171.D
Report Date: 26-Mar-2018 13:44

Katahdin Analytical Services

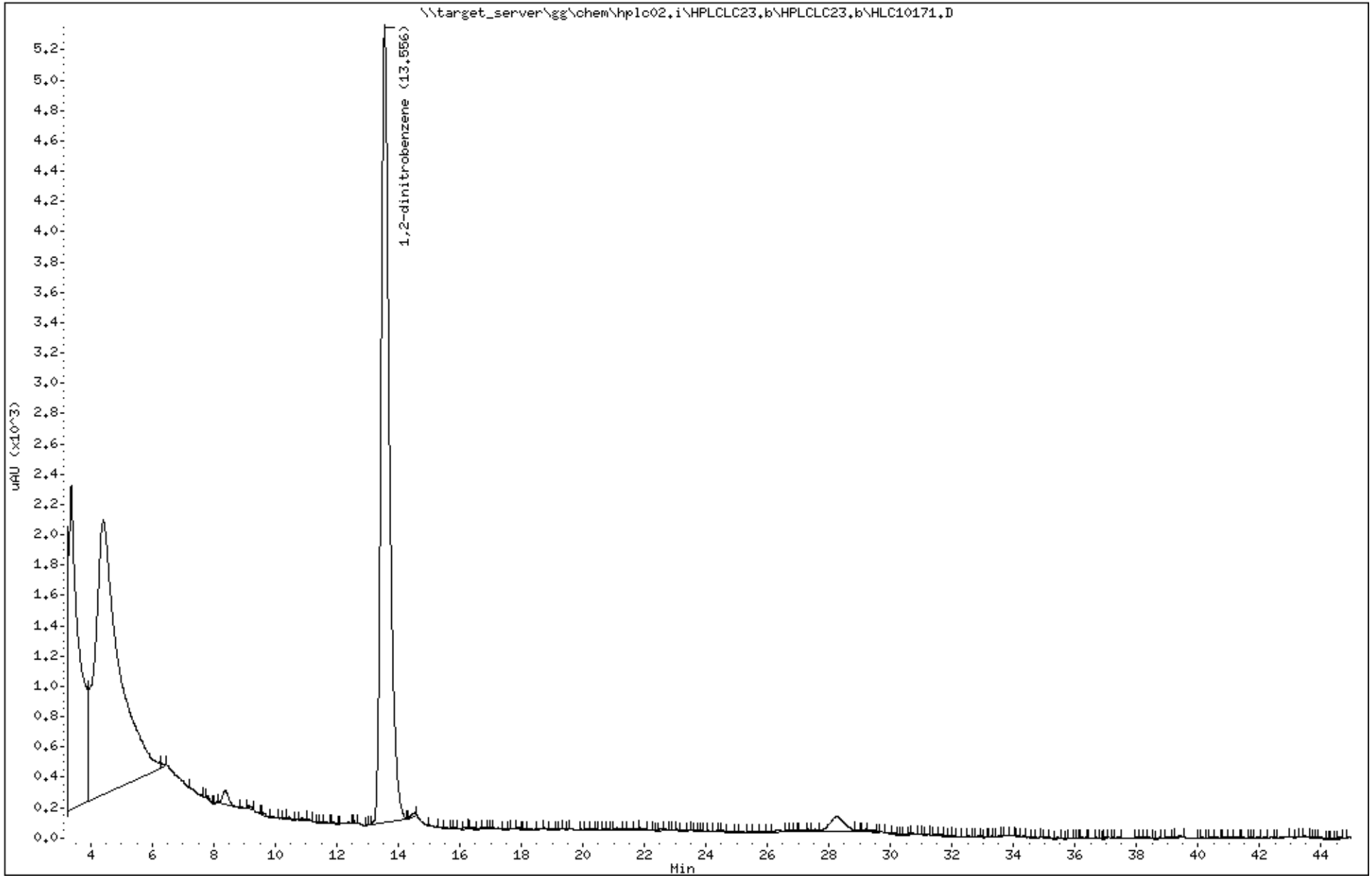
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10171.D
Lab Smp Id: SL2295-18C Client Smp ID: HAAP-21C-UGIA-DPT15
Inj Date : 24-MAR-2018 07:36
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-18C
Misc Info : WG225143,WG225094,WG210620-13
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC23.b\E2016A.m\E2016A.m
Meth Date : 26-Mar-2018 07:49 abullentin Quant Type: ESTD
Cal Date : 01-AUG-2017 14:33 Cal File: HKH10014.D
Als bottle: 48
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	13.556	13.504	0.052	5266	0.99387	9.94	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC23.b\HPLCLC23.b\HLC10171.D
Date : 24-MAR-2018 07:36
Client ID: HAAP-21C-UGIA-DPT15 Instrument: hplc02.i
Sample Info: SL2295-18C
Purge Volume: 0.5 Operator: AC
Column phase: Acclaim Exp E2 Column diameter: 4.60



Katahdin Analytical Services 2000130

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-19
Client ID: CHAAP-21C-UGIA-DPT17
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10074.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		98.2	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10074.D
Report Date: 26-Mar-2018 13:26

Katahdin Analytical Services

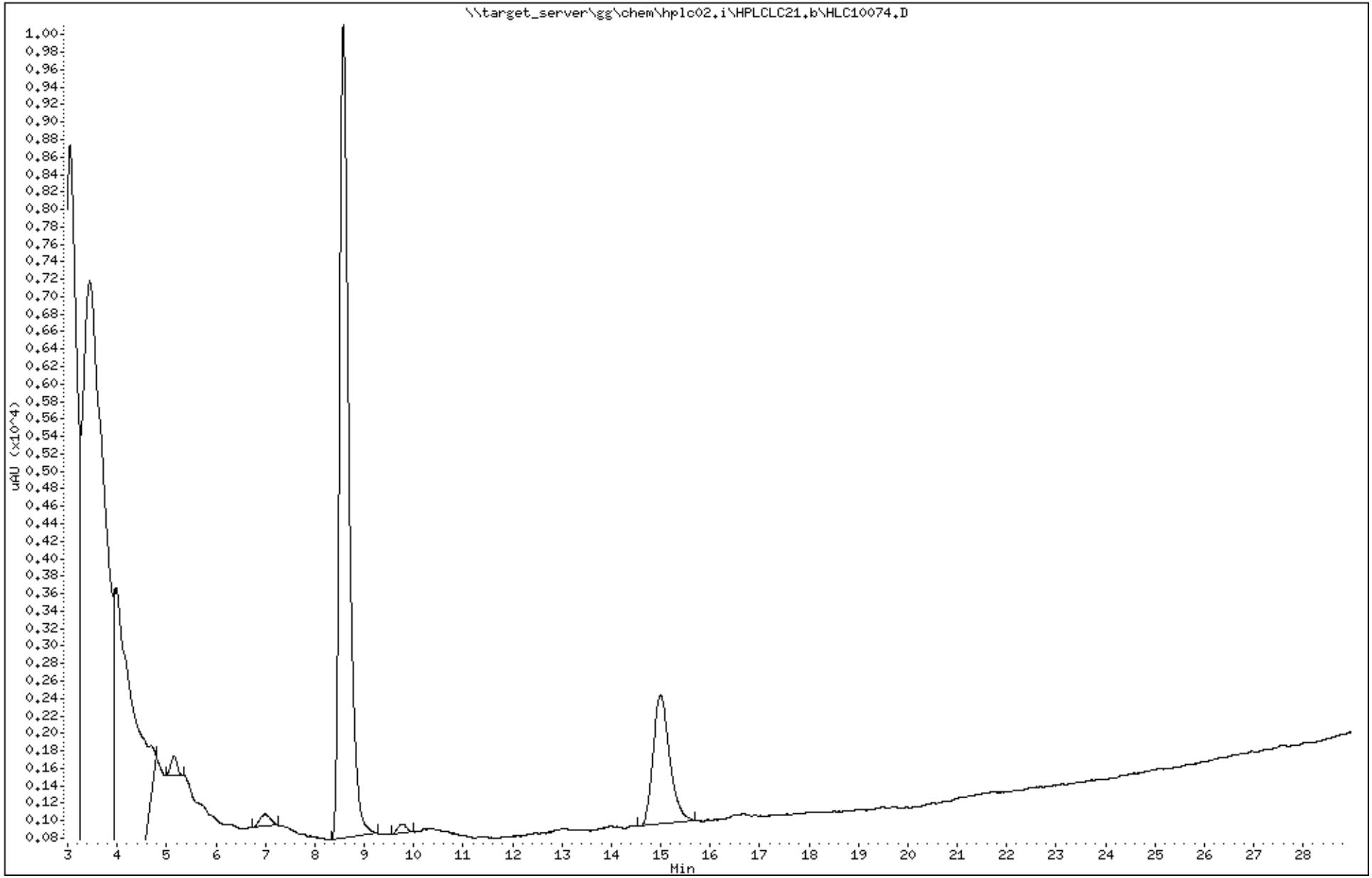
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10074.D
Lab Smp Id: SL2295-19 Client Smp ID: HAAP-21C-UGIA-DPT17
Inj Date : 21-MAR-2018 14:55
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-19
Misc Info : WG225143,WG225144,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10074.D
Date : 21-MAR-2018 14:55
Client ID: HAAP-21C-UGIA-DPT17
Instrument: hplc02.i
Sample Info: SL2295-19
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000133

Data File: HLC10074.D
Report Date: 26-Mar-2018 13:29

Katahdin Analytical Services

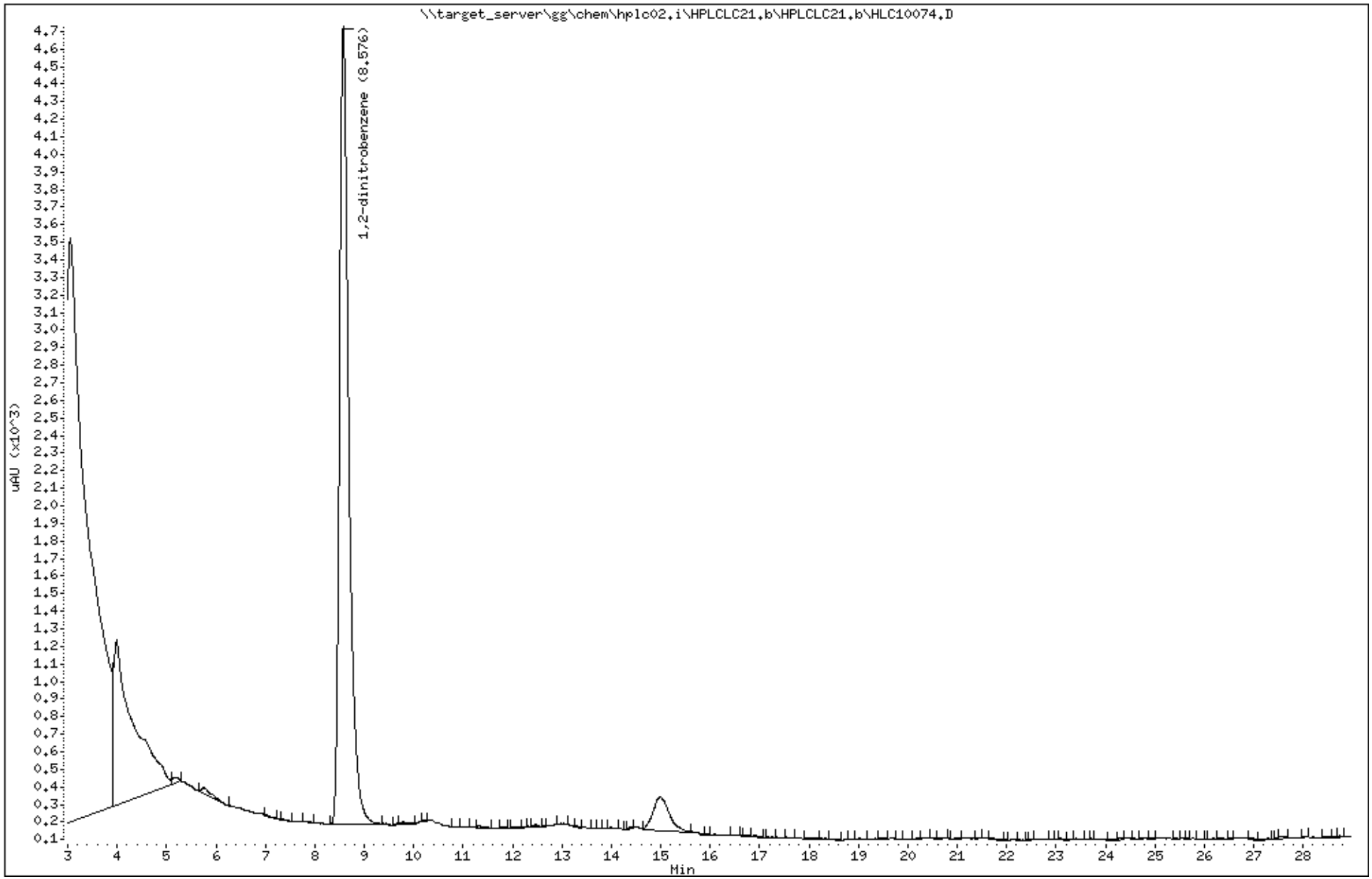
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10074.D
Lab Smp Id: SL2295-19 Client Smp ID: HAAP-21C-UGIA-DPT17
Inj Date : 21-MAR-2018 14:55
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-19
Misc Info : WG225143,WG225144,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 23-Mar-2018 09:11 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.575	8.549	0.026	4542	0.98154	9.82	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10074.D
Date : 21-MAR-2018 14:55
Client ID: HAAP-21C-UGIA-DPT17
Instrument: hplc02.i
Sample Info: SL2295-19
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000135

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-20
Client ID: CHAAP-21C-UGIA-DPT19
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10075.D

Sample Date: 18-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		103.	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10075.D
Report Date: 26-Mar-2018 13:26

Katahdin Analytical Services

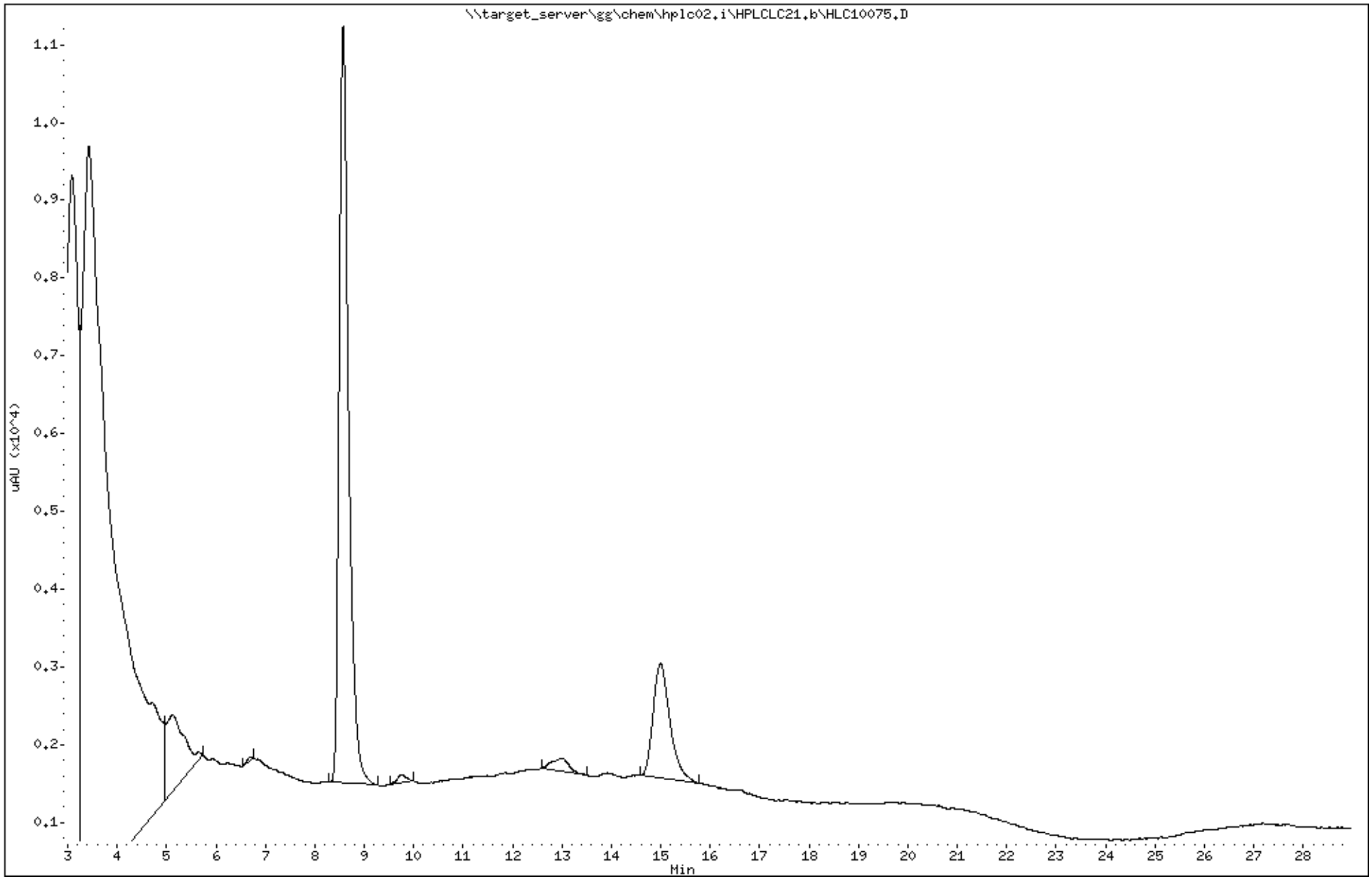
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10075.D
Lab Smp Id: SL2295-20 Client Smp ID: HAAP-21C-UGIA-DPT19
Inj Date : 21-MAR-2018 15:27
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-20
Misc Info : WG225143,WG225144,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 52
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10075.D
Date : 21-MAR-2018 15:27
Client ID: HAAP-21C-UGIA-DPT19
Instrument: hplc02.i
Sample Info: SL2295-20
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000138

Data File: HLC10075.D
Report Date: 26-Mar-2018 13:29

Katahdin Analytical Services

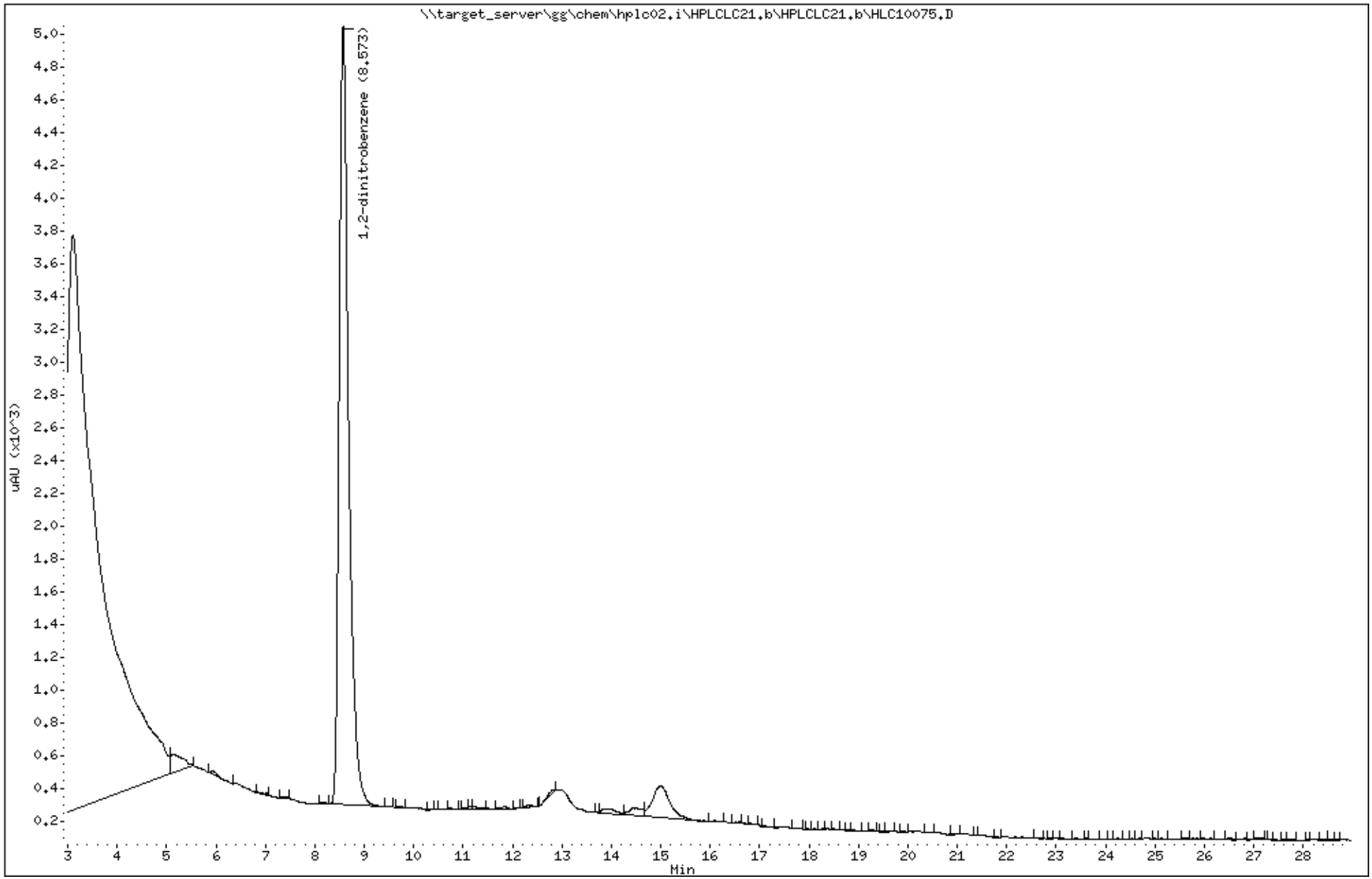
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10075.D
Lab Smp Id: SL2295-20 Client Smp ID: HAAP-21C-UGIA-DPT19
Inj Date : 21-MAR-2018 15:27
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-20
Misc Info : WG225143,WG225144,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 23-Mar-2018 09:11 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 52
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.573	8.549	0.024	4754	1.02735	10.3	

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10075.D
Date : 21-MAR-2018 15:27
Client ID: HAAP-21C-UGIA-DPT19
Instrument: hplc02.i
Sample Info: SL2295-20
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000140

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: ATI, Inc.
Lab ID: SL2295-22
Client ID: CHAAP-21C-LGIA-DPT106
Project: Cornhusker Army Ammunition Plant
SDG: SL2295
Lab File ID: HLC10076.D

Sample Date: 17-MAR-18
Received Date: 20-MAR-18
Extract Date: 21-MAR-18
Extracted By: JMS
Extraction Method: SW846 8330
Lab Prep Batch: WG225144

Analysis Date: 21-MAR-18
Analyst: AC
Analysis Method: SW846 8330B
Matrix: AQ
% Solids: NA
Report Date: 26-MAR-18

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
HMX	U	0.12	ug/L	1	.25	0.25	0.043	0.12
RDX	U	0.12	ug/L	1	.25	0.25	0.046	0.12
1,3,5-Trinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.040	0.12
1,3-Dinitrobenzene	U	0.12	ug/L	1	.25	0.25	0.045	0.12
Tetryl	U	0.12	ug/L	1	.25	0.25	0.060	0.12
Nitrobenzene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
2,4,6-Trinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.064	0.12
4-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.053	0.12
2-Am-DNT	U	0.12	ug/L	1	.25	0.25	0.038	0.12
2,6-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.056	0.12
2,4-Dinitrotoluene	U	0.12	ug/L	1	.25	0.25	0.052	0.12
2-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.071	0.12
4-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.060	0.12
3-Nitrotoluene	U	0.12	ug/L	1	.25	0.25	0.063	0.12
Nitroglycerin	U	2.0	ug/L	1	4	4.0	0.67	2.0
PETN	U	2.0	ug/L	1	4	4.0	0.58	2.0
1,2-Dinitrobenzene		95.9	%					

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Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10076.D
Report Date: 26-Mar-2018 13:26

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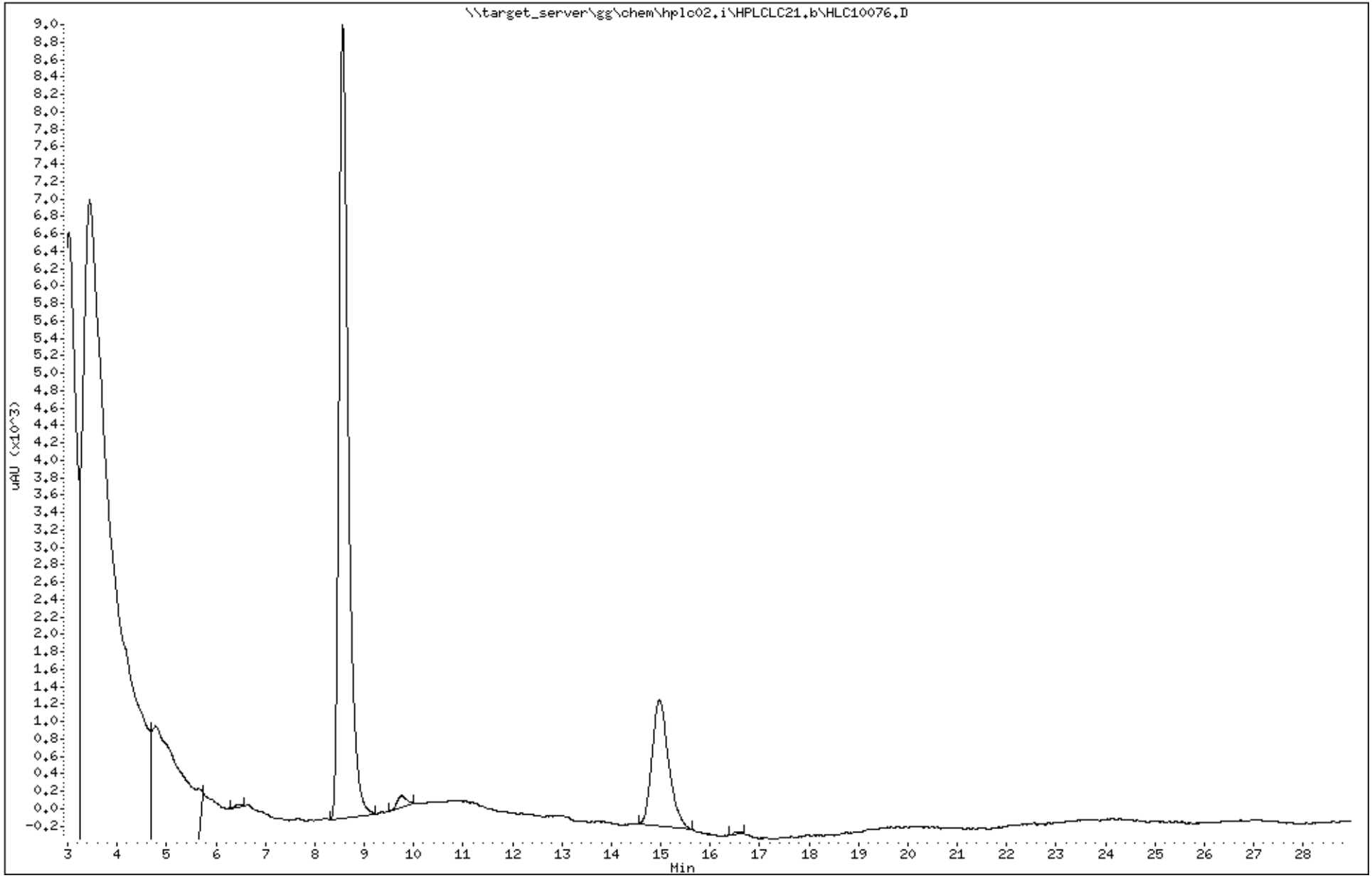
Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10076.D
Lab Smp Id: SL2295-22 Client Smp ID: HAAP-21C-LGIA-DPT10
Inj Date : 21-MAR-2018 15:59
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-22
Misc Info : WG225143,WG225144,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m
Meth Date : 22-Mar-2018 09:44 hplc02.i Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 53
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ngpetn.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)

Data File: \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HLC10076.D
Date : 21-MAR-2018 15:59
Client ID: HAAP-21C-LGIA-DPT10
Instrument: hplc02.i
Sample Info: SL2295-22
Purge Volume: 0.5
Operator: AC
Column phase: Acclaim Exp E1
Column diameter: 4.60



Katahdin Analytical Services 2000143

Data File: HLC10076.D
Report Date: 26-Mar-2018 13:29

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\HPLCLC21.b\HLC10076.D
Lab Smp Id: SL2295-22 Client Smp ID: HAAP-21C-LGIA-DPT10
Inj Date : 21-MAR-2018 15:59
Operator : AC Inst ID: hplc02.i
Smp Info : SL2295-22
Misc Info : WG225143,WG225144,WG225143-5
Comment :
Method : \\target_server\gg\chem\hplc02.i\HPLCLC21.b\EXPB05A.m\EXPB05A.m
Meth Date : 23-Mar-2018 09:11 abullentin Quant Type: ESTD
Cal Date : 20-MAR-2018 18:05 Cal File: HLC10037.D
Als bottle: 53
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: SW8330A.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * 1000*(Vt/Vo) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.50000	Sample Volume (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
$ 2 1,2-dinitrobenzene	8.562	8.549	0.013	4436	0.95863	9.59	